

# Widening the Boundaries of Mapping the Cultural Heritage of Vernacular Settlements in Architectural Education

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**Abstract:- Purpose:** The intent of this article is to reinstate the need for collaborations at the local, regional, national and international levels that facilitate both the development of database with a thrust on 'heritage; conservation' and 'culture' that facilitate interdisciplinary or multidisciplinary or trans-disciplinary studies at the undergraduate, post graduate level and also as research strand.

**Design/methodology/approach:** An exploratory study is adopted to explore the status of conservation in architectural education in Indian context.

**Findings:** From the literature review as well as the with the experiences of the authors in documenting, analysing and interpreting the vernacular heritage and this article highlights the need for collaboration at the local, regional, national and international level.

**Research limitations:** The findings are limited to the articles that were identified from the secondary resources. Besides, the thrust of this article is on mapping the 'vernacular heritage' in architectural education.

**Implications:** The findings demonstrate the need to widen the boundaries of 'conservation' in architectural programmes to make the students 'heritage conscious'. Besides, directions to address heritage at the undergraduate as well as post graduate levels is discussed so as to promote research along these lines of thought.

**Keywords—Heritage; conservation; culture; vernacular; architectural education**

## I. INTRODUCTION

The Oxford English Dictionary defines 'heritage' as 'property that is or may be inherited; an inheritance', 'valued things such as historic buildings that have been passed down

to the cultural value, value of identity and the capacity of the object to interact with memory (Vecco, 2010). The 1990s witnessed the birth of unique value system that included 'cultural landscapes, living history and heritage intangible values.

### *Role of conservation in architectural education*

'Architectural education must invest in heritage as an educational resource and continuum from the past' (Howard, 2019). Conservation is offered as a course in architectural education to sow the importance, need and role of heritage in today's context so as bridge the present with the past as well as the future. According to Rodwell (2003), architectural conservation is identified as a leading partner and a driving force. In the present context, the boundaries of mapping cultural heritage are expanding and there is an utmost need for architectural education to adapt to the diverse changes. (Szczepanski, 2019).

Rodwell (2003) has posited that architectural conservation will continue to under achieve until interventionist approach is adopted as a driving force to achieve sustainable development. Besides, there is a need for the strand 'architectural strand' to adapt to the widening boundaries of heritage (szczepanski, 2019). Akboy - Ilk(2017) has posited that in an era dominated by automatic tools and technology, the engagement with the built environment is significant. Moreover, students need to be involved in the conservation of heritage (Al-Subieh and Al - Rawashdeh, 2014). Focusing on the unprotected heritage, this article revolves around the heritage values of vernacular settlements.

# **TRIBOLOGY and CHARACTERIZATION of SURFACE COATINGS**

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## Tribological Properties of Carbon-Based Coatings

D. Dinesh Kumar<sup>1\*</sup>, P. Kuppusami<sup>1†</sup>, Gobi Saravanan Kaliaraj<sup>1</sup>, Silva Sankar Sana<sup>2</sup> and A.M. Kamalan Kirubaharan<sup>1</sup>

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<sup>2</sup>*School of Chemical Engineering and Technology, North University of China, Taiyuan, China*

### Abstract

The ongoing industrial revolution demands advanced tribological coatings for enhancing the performance of mechanical components by minimizing friction and wear-related losses. Recently, carbon-based coatings have been widely studied for many tribology applications. The functionality of the carbon-based coatings can be achieved by controlled modification of  $sp^2/sp^3$  hybridization ratio or hydrogen content during the deposition process. Amorphous carbon (a-C) coatings and hydrogenated a-C (a-C:H) or diamond-like carbon (DLC) coatings provide ultralow friction behavior due to the enrichment of  $sp^2$  hybridized carbon features. Similarly, hydrogen-free carbon coatings with tetrahedral  $sp^3$  bonded networks (70%) show higher wear resistance behavior. Crystalline diamond coatings with enriched  $sp^3$  hybridized carbon features like micro crystalline diamond (MCD) and ultra/nanocrystalline diamond (U/NCD) coatings exhibit superhardness (50-100 GPa) and remarkable wear resistance behavior. Though these coatings provide superior tribo-mechanical properties at low-temperature (<100°C), tribological properties, however, rapidly deteriorate at elevated temperatures which limit their applications in different operating conditions. To overcome these limitations, researchers have developed duplex structures of suitable metallic and/or ceramic materials doped/embedded in an a-C matrix. This chapter reviews the recent innovations that have reported on all the aspects of carbon-based coatings.

**Keywords:** Hydrogenated and hydrogen-free DLC coatings, diamond coatings,  $sp^3/sp^2$  hybridization, tribological properties, tribofilms, surface passivation

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**Title:**

**THERMAL PERFORMANCE STUDY OF BUILDING MATERIALS IN AN URBAN FORM**

**Authors & affiliations with email id:**

*Ar. Shobana, Associate Professor, Sathyabama Institute of Science and Technology,  
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**Abstract:**

Chennai, a tropical city, which is quickly urbanizing, is vulnerable to the stresses of global temperature rise. Further, proposals for urban development as an attempt to boost the economy during these times, will put additional stress. Thus it becomes vitally important to make informed decision for future developments in terms of methods of building and with what to build. This research attempts to fill the gap to help make sensitive urban development strategies and regulations on the most imperative methods for future development. The current paper assesses and demonstrates the performance of two wall materials – Clay Brick and AAC, usually utilized in urban developments within the context of an optimal urban morphological region. This is accomplished by making a compact mid-rise urban form of residential typology and utilizing ENVI-met 4.0 and re-creating the outdoor microclimatic conditions with AAC and Clay Brick walls. The urban form created with the Clay brick walls are found to be cooler by 0.010°C. Compared to daytime, at night time, the outside air temperature with clay brick walls and AAC dividers are cooler respectively. This investigation additionally discovered that a huge distinction to outside air temperature for studied urban form structure can be made by expanding the Sky View Factor (SVF), contrasted with an adjustment of material. The understandings from this study can be expanded and be applied productively to impact changes in Urban development guidelines.

**Keywords:** Urban form, material, Urban heat, mid-rise, outdoor micro-climate



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**1st International Conference on  
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**Title:**

**THE MYSTICAL DIMENSION IN ARCHITECTURE**

**Authors & affiliations with email id:**

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*Selvendiran S G, Faculty of Architecture, Sathyabama University,*  
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**Abstract:**

Architecture is an essential piece of human existence and it genuinely affects human behaviour. People gain from their encounters. In this manner, it is important to examine the human relationship with the built environment as it can assist designers in building places, with personality and significance by zeroing in on user experience. This study examines the creation of Architectural Experience that could channel emotion. It also helps in understanding how a space could make a sense of alteration in time and space perception., that uncovers this measurement called the Mystical Dimension making emotional responses. The research uses a methodology of The Cognitive perspective theory and sense of place in architecture which delineates the interconnection of defining a sense of place, Human Perception, Memory, and Experience. It further deciphers various Perceptual Factors, characteristics of creating an atmosphere in architecture through the classification of Psychological emotions. With various appraisals that are carried out in this research, progression of the emotional cycle in setting up a theme, language, and pattern to perceive the organization of experiences are found. The study leads to all possibilities that interpret the association with spaces, and fundamentally contrasting the experience focused with deference to design elements and reasoning towards the approach.

**Keywords :** Mysticism, Emotional Potential of Architecture, Human Behavior, Cognitive Perspective, Sense of Place in Architecture

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**Title:**

**SUSTAINABLE MANAGEMENT OF BIO MEDICAL WASTE**

**Authors & affiliations with email id:**

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*Suresh Ramamurthy, Assistant Professor, MARG Institute of Design and Architecture  
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**Abstract:**

The present paper aims to study the various treatment techniques involved in the management of Bio medical waste and to select the most appropriate treatment method based on cost savings, energy recovery and volume reduction in a sustainable manner. A number of HCF (Health care facilities) lacks the provision of on-site treatment facility. The reason for this could be a fear of high emission levels from the multiple machines or equipment used in the therapy, or it could be a lack of room within the clinical premises. To overcome the situation, a minor amendment of the Bio medical waste management rules has to be carried out which includes providing a suitable area necessary for the treatment of medical waste at the premises during the construction stage itself. Further identification of appropriate treatment technique based on the type of waste produced is also important. Even a small HCF should be equipped with the requisite treatment facilities considering the emission levels to be within standards. Installing an on-site treatment facility will lower the amount spent to the external agencies for disposal and treatment of medical waste. The leftover residue is then securely landfilled in the site or even be liable to mix with municipal solid garbage. The study concludes that implementing one of the treatment techniques in a specific hospital helps in energy recovery, huge reduction in the volume of waste and avoids illegal dumping of waste thereby creating less impact to the surrounding environment.

**Keywords:** Bio medical waste, Treatment techniques, on-site treatment facility, Energy recovery, cost savings



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**Title:**

**SUSTAINABLE DEVELOPMENT IN TRANSITION ZONE IN WARANGAL**

**Authors & affiliations with email id:**

*M Manasa, Asst.Prof, Sri Venkateswara College of Architecture, Madhapur-Hyderabad,  
manasa.mudhranj@gmail.com*

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**Abstract:**

Warangal is a satellite town to Hyderabad. It is strategically located 146 Kms from Hyderabad. Warangal is one of the oldest settlements during the Kakatiya's dynasty and well known for its water storage tanks mechanism. Warangal is a gateway to south India due to its connectivity through railways and known as Tri-City which comprises of Warangal, Kazipet and Hanumakonda. The main focus of sustainability is to address the three pillars such as environmental, economy, Social aspects in development process in "Peri Urban Area," where rural zones are engulfed by the and urban areas. The study revolves around the peri urban villages within Greater Warangal Municipal Corporation Area. Studying the new development within the peripheries of the urban areas impacting on rural livelihoods and which are in a process of transformation. With an intention to safeguard the agricultural practice within in the region and to analysis the growing prices of land which intern creating pressure on infrastructure in peripheral area this paper is an attempt to highlight the challenges in this process of transformation. As the study is based on the analysis of data collected from secondary sources to balance in the infrastructure and the livelihood of the people in that region in context to urban morphology. The findings highlight the plausible solutions that can be adopted in the region through participation of various stakeholders with a thrust on sustainable development.

**Key words:** Wrangle, Sustainability, Urban, Rural, Peri-Urban, Infrastructure.



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# Study on Missing Values and Outlier Detection in Concurrence with Data Quality Enhancement for Efficient Data Processing

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- I. Introduction
- II. Mechanisms of Missing Values
- III. Missing Values Identified Randomly
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## Abstract:

Data analytics is the process of analyzing raw data to make predictions and derive conclusions. This process involves collecting and organizing data to discover hidden patterns and draw insight into the data. The methods and approaches of data analytics are automated using various algorithms and mathematical formulas. Data analytics provides real-time and actionable perceptions on data that enable more accurate and prompt decision-making. During the data acquisition phase, missing values and outliers are encountered that affect the model's reliability. Missing values are the data missing in a dataset, more common on large datasets that arise due to information loss, dropout, or non-response of participants. Missing values affects the accuracy of the result and also may lead to biased results. Outliers are the abnormal values that happen to have deviated from the normal distribution pattern of data distribution. Outliers are extreme, unrealistic, extremely big, or small values in a dataset that arise due to manual errors like participant response errors and data entry errors. Outliers also affect the accuracy of the results and lead to over or underestimated resultant values. As missing values and outliers degrade the performance of the analytical data models, various research works have focused on finding and handling such values. This paper reviews the various aspects of missing values and outliers in the preprocessing phase of data analytics to enhance the accuracy of the data model.

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# Speech Emotion Recognition of Tamil Language: An Implementation with Linear and Nonlinear Feature

Authors : S. Prayla Shyry, A. Christy, Y. Bevish Jinila

Published in: [Proceedings of the 3rd International Conference on Communication, Devices and Computing](#)

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## New COVID-19 Normal: An Experimental Prototype of Smart Face Mask Vending Machine—An Indispensable Kiosk

### Abstract

In the ongoing COVID19 situation, one of the most basic yet necessary supplies for any human being is the face mask. Medical stores are facing shortage of face masks and it is also leading to crowding in confined spaces like medical stores hence aggravating the situation. The only solution to this is increasing the sources from where the citizens can get face masks and at the same time avoiding crowding and contact with any other

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S. Prayla Shyry, A. Christy, Y. Bevis Jirilla

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## A Simple but Accurate Mathematical Formalism for Prediction of the Far Field Pattern of First Higher Order (LP11) Mode in Kerr Type Nonlinear Step Index Optical Fiber

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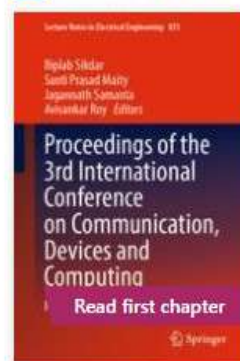
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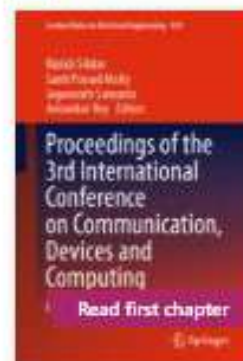
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### Document Sections

#### I. Introduction

#### II. Review of Related Works

#### III. Proposed System

#### IV. System Architecture

#### V. Proposed Methodology

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### Authors

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### References

### Keywords

### Metrics

## Abstract:

De-duplication is a method that removes duplicates of data to save storage space; it is commonly used in cloud storage. Cloud computing is considered as the basis of this research study. De-duplication addresses the issue of removing many duplicate files on the cloud. To maintain data security, it was recommended that data be encrypted and decrypted such that it could not be viewed by anyone. The existing systems lack accuracy and security. The proposed approach varies from traditional de-duplication systems, where each client has their own rights to the data that they have supplied. In the proposed hybrid cloud architecture, the S-CSP is hosted in the public cloud. According to a security study, the proposed research plan is reliable in terms of data protection.

**Published in:** 2022 6th International Conference on Computing Methodologies and Communication (ICCMC)**Date of Conference:** 29-31 March 2022**INSPEC Accession Number:** 21738800**Date Added to IEEE Xplore:** 13 April 2022**DOI:** 10.1109/ICCMC53470.2022.9753902

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**Electronic ISBN:**978-1-6654-1028-1**Publisher:** IEEE**DVD ISBN:**978-1-6654-1027-4**Conference Location:** Erode, India**Print on Demand(PoD) ISBN:**978-1-6654-1029-8

## I. Introduction

# Smart Farming using IoT

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**Abstract**— The advancement in technology has helped in developing the agriculture industry. The agriculture industry has just become smarter and data oriented. The recent lively growth in IOT based technologies has redesigned the way many industries work. This revolutionary change in Farming has generated various opportunities as well as new disputes. It's time for us to beat the clock and implement various IOT technologies in agriculture for higher production to keep up with the never-ending increasing demand for food all over the world. Supervising agricultural fields can be done with the help of data collection by various sensors for the farmer to monitor. Our Proposed System uses four different sensors with real time update on the status the sensors provide unlike existing systems which provides the status from time to time. The sensors that used helps in knowing the soil moisture, soil's ph. value, water level in the field. The water volume sensor detects the amount of water supplied to the field for a particular crop and supplies the required water and prevents overflow of water. The sensors are connected to the Arduino-UNO module for processing. The system can be operated from remote locations with the help of networking technology.

## Index Terms

1. Internet of Things (IoT),
2. Soil moisture sensor
3. Arduino-UNO.

## I. INTRODUCTION

Regardless of natural constraints such as bad weather and climate change, the agriculture industry must grow to meet demand despite a growing population. A system for observing the agricultural field with the help of sensors that automates the agricultural system is constructed in IoT smart farming.

When compared to conventional farming, IoT farming is very efficient. Farmers can access information on field conditions from anywhere. Farmers are reaping endless benefits from implementing the IoT system. It has aided farmers in lowering costs while increasing agricultural yields. The system's primary goal is to maintain the perfect growing environment for crops. Users can access the data via the mobile site using their cell phones and PCs. In the toolbar of the user interface, users may keep track of the crops and regulate the water supply, illumination, and motor. The basic goal of an irrigation control system is to produce and maintain best possible crop growth. Crop development can be improved by cultivating in an ecosystem with adequate water supply and an optimal temperature. As a result, the agricultural field's yield will rise. The productivity can be boosted and it is possible to keep up with the increasing demand in the future by utilizing this technology. With developments, IoT helps in transforming the agriculture industry and assists the farmers in dealing with their issues. They are cost-effective, and crop productivity will increase.

## II. LITERATURE SURVEY

V. Palazzi et al[1] presented a Leaf Compatible temp sensing system using RFID.

Jitendra Patidar et al[2] explained the benefits of IoT based farming by using various parameters by using programming hardware over traditional farming.



2022 | OriginalPaper | Chapter

# Simulation and Analysis of Hybrid Energy Resources in Chennai Using Homer Software

Authors : P. Abirami, M. Pushpavalli, V. Geetha, P. Sivagami, R. Harikrishnan

Published in: *Advancement in Materials, Manufacturing and Energy Engineering*, Vol. II

Publisher: Springer Nature Singapore

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## Abstract

The vision of our nation is to implement renewable energy resources in a wide range for all industrial and commercial processes. The efficient way of extracting power from renewable sources is obtained by interconnecting two or more resources. Emerging renewable energy sources in power sector are wind and solar since they are inexhaustible sources. These resources will help in attaining future energy demands. So, in this research paper, solar and wind sources are interconnected through buses. Wind source is connected with AC bus and Solar is connected with DC bus. Since the load considered here is AC, a converter is used to convert DC to AC. This design ensures that the selected solar and wind energy are eco-friendly sources. The simulation is carried out using Hybrid Optimization Model for Electric Renewables Pro software. The objective of this simulation is to obtain optimal solution and to minimize the cost of design. Sensitivity cases are also obtained by varying the derating factor of solar and hub height of wind systems. The availability of wind and solar energy sources in Chennai is discussed and analyzed. The simulated system is used to supply a load of 11.26 kW/d and a peak load of 2.09 kW. From the simulation results, it is clear that solar and wind hybridization is a pollution free cost-effective method when compared with the conventional methods.

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# Simulation and Analysis of Hybrid Energy Resources in Chennai Using Homer Software

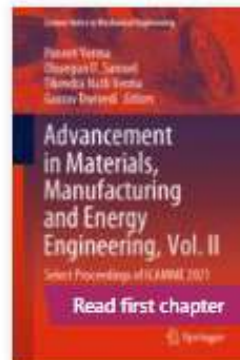
Authors : P. Abirami, M. Pushpavalli, V. Geetha, P. Sivagami, R. Harikrishnan

Published in: *Advancement in Materials, Manufacturing and Energy Engineering, Vol. II*

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**Title**

Simulation and Analysis of Hybrid Energy Resources in Chennai Using Homer Software

**Authors**

P. Abirami  
M. Pushpavalli  
V. Geetha  
P. Sivagami  
R. Harikrishnan

**Copyright Year**

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**Book**

Advancement in Materials, Manufacturing and Energy Engineering, Vol. II  
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## Aging of a Thermoplastic Polymer Under the Combined Effect of Ultraviolet Ray and Temperature

### Abstract

Polycarbonate (PC) is an amorphous thermoplastic polymer known for lightness, transparency and high-impact resistance. However, its long-term exposure to the elements makes it fragile and opaque. The objective of this study is the exposure of this material to ultraviolet ray (UV) combined at different temperatures (40, 80 and 120 °C) and to highlight the changes in its physicochemical and thermal properties. After aging, polycarbonate

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## Effects of Additives and Treatment on Fly Ash -Based Polymer Composites

### Abstract

India generates about 283,470 MW of electricity. Out of which, 70% of the demand is carried out by fossil fuels. A total of 54% of that demand is fulfilled by coal. Open cast mining plays an important role in fulfilling the demand of coal for the generation of power from thermal power plants. But as the requirement of coal is increasing day by day, it also produces health risks because the burning of coal results in the generation of fly ash

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## Powder Mixed Electrical Discharge Machining of EN 31 Steel

### Abstract

In this study, effort is made to see the effect of micron size powder particle of SiC on dielectric fluid used in electrical discharge machining (EDM) of EN 31 steel. The effect of input parameter such as tool material, peak current, pulse on time and concentration of powder particle taken as input parameter. Taguchi design of experiment L18 orthogonal array used to plan the experiment on newly made setup for PMEDM. The EDM

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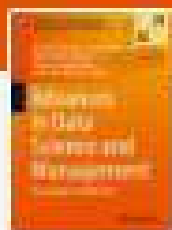
## Simulation and Analysis of Hybrid Energy Resources in Chennai Using Homer Software

### Abstract

The vision of our nation is to implement renewable energy resources in a wide range for all industrial and commercial processes. The efficient way of extracting power from renewable sources is obtained by interconnecting two or more resources. Emerging renewable energy sources in power sector are wind and solar since they are inexhaustible sources. These resources will help in attaining future energy demands. So, in this research paper, solar and wind sources are interconnected through buses. Wind source is connected with AC bus and Solar is connected with DC bus. Since the load considered here is AC, a converter is used to convert DC to AC. This design ensures that the selected solar and wind energy are eco-friendly sources. The simulation is carried out using Hybrid Optimization Model for Electric Renewables Pro software. The objective of this simulation is to obtain optimal solution and to minimize the cost of design. Sensitivity cases are also obtained by varying the derating factor of solar and hub height of wind systems. The availability of wind and solar energy sources in Chennai is discussed and analyzed. The simulated system is used to supply a load of 11.26 kW/d and a peak load of 2.09 kW. From the simulation results, it is clear that solar and wind hybridization is a pollution free cost-effective method when compared with the conventional methods.

R. Abirami, M. Pushpavalli, V. Geetha, R. Sivagami, R. Harikrishnan

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[Advances in Data Science and Management](#) pp 555–563 | [Cite as](#)

# Sentinel-2 Images-Based Intelligent Crop Type Determination

[L. Sujithelen](#), [N. Naga Praveen Kumar](#), [P. Pramod Sai](#) & [G. Nagarajan](#)

Conference paper | [First Online: 13 February 2022](#)

269 Accesses

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 86)

## Abstract

Agriculture is the primary source of each livelihood which forms the backbone of our country. Nowadays in agriculture, there is a low yield of crops due to the climatic changes, poor irrigation, and reduction in soil fertility. Some of the factors on which agriculture is dependent are soil, climate, flooding, fertilizers, temperature, precipitation, crops, insecticides and herb. The conditions of soil and crop production in farming change from every day as well as all through the developing season. This proposed work predicts which crop is grown in which soil. Also, it predicts which crop is grown in which season. The soil is detected by using the Sentinel-2 images. The proposed work performs better when compared with the existing system.

## Keywords

IoT Crop type identification Random forest (RF) Sentinel-2A Climatic changes

## About this paper



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### Cite this paper

Sujihelen, L., Naga Praveen Kumar, N., Pramod Sai, P., Nagarajan, G. (2022). Sentinel-2 Images-Based Intelligent Crop Type Determination. In: Borah, S., Mishra, S.K., Mishra, B.K., Balas, V.E., Polkowski, Z. (eds) *Advances in Data Science and Management . Lecture Notes on Data Engineering and Communications Technologies*, vol 86. Springer, Singapore. [https://doi.org/10.1007/978-981-16-5685-9\\_54](https://doi.org/10.1007/978-981-16-5685-9_54)

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# Semantics Accommodated K-Anonymization (SAKA) Technique for Assorted Data

Publisher: IEEE

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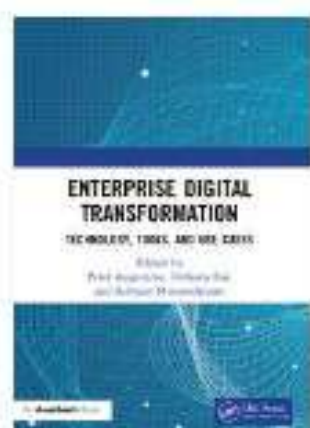
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K. Mohana Prasad ; A. Pravin ; T. Prem Jacob ; R. Rajakumar [All Authors](#)

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|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Abstract                                            | <b>Abstract:</b><br>Techniques approaching k-anonymity for shielding the mini data privacy over data mining. Mini gatherings and abstraction are two conventional techniques for deploying the k-anonymity method. However, the above two methodologies lead to major errors over the anonymity of combined small data gathering. To approach this problem, we propose an efficient and new anonymity method SAKA that accommodates extra semantics than abstraction and mini data gatherings that can handle combined small data combinations. SAKA is the abbreviation for Semantics Accommodated K-Anonymity technique implied for anonymization of assorted data. The concept of SAKA is to merge the mean assorted vector of arithmetic data with abstraction values of classified data as a grouping centroid. It uses its epitome of tuples along with its equivalent clusters. Here we propose efficient algorithms to anonymize assorted data. An empirical result proves that SAKA can anonymize the assorted mini data persuasively and the algorithm implemented will provide good rapport between the quality of data and effectiveness of the algorithm thus it correlates anonymization algorithms with anonymous data. |                                                       |
| Document Sections                                   | <b>Published in:</b> 2022 <a href="#">Second International Conference on Power, Control and Computing Technologies (ICPC2T)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| I. Introduction                                     | Date of Conference: 01-03 March 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | INSPEC Accession Number: 21779719                     |
| II. Basics of Anonymization                         | Date Added to IEEE <i>Xplore</i> : 26 May 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DOI: <a href="#">10.1109/ICPC2T53885.2022.9776664</a> |
| III. SAKA for Assorted Data                         | <b>▼ ISBN Information:</b><br>Electronic ISBN:978-1-6654-5858-0<br>Print on Demand(PoD) ISBN:978-1-6654-5859-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Publisher: IEEE                                       |
| IV. Assorted Data Algorithm                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Conference Location: Raipur, India                    |
| V. Experimental Analysis and Performance Evaluation |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| Show Full Outline ▼                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| Authors                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| Figures                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| References                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| Keywords                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| Metrics                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |



Chapter

# Security Challenges and Attacks in MANET-IoT Systems

*By Serin V. Simpson, G. Nagarajan*

Book [Enterprise Digital Transformation](#)

Edition 1st Edition

First Published 2022

Imprint Auerbach Publications

Pages 43

eBook ISBN 9781003119784

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## ABSTRACT

Digital transformation (DT) has become a buzzword. Every industry segment across the globe is consciously jumping toward digital innovation and disruption to get ahead of their competitors. In other words, every aspect of running a business is being digitally empowered to reap all the benefits of the digital paradigm. All kinds of digitally enabled businesses across the globe are intrinsically capable of achieving bigger and better things for their constituents. Their consumers, clients, and customers will realize immense benefits with real digital transformation initiatives and implementations. The much-awaited business transformation can be easily and elegantly accomplished with a workable and winnable digital transformation strategy, plan, and execution.

There are several enablers and accelerators for realizing the much-discussed digital transformation. There are a lot of digitization and digitalization technologies available to streamline and speed up the process of the required transformation. Industrial Internet of Things (IIoT) technologies in close association with decisive advancements in the artificial intelligence (AI) space can bring forth the desired transitions. The other prominent and dominant technologies toward forming digital organizations include cloud IT, edge/fog computing, real-time data analytics platforms, blockchain technology, digital twin paradigm, virtual and augmented reality (VR/AR) techniques, enterprise mobility, and 5G communication. These technological innovations are intrinsically competent and versatile enough to fulfill the varying requirements for establishing and sustaining digital enterprises.

**Enterprise Digital Transformation: Technology, Tools, and Use Cases** features chapters on the evolving aspects of digital transformation and intelligence. It covers the unique competencies of digitally transformed enterprises, IIoT use cases, and applications. It explains promising technological solutions widely associated with digital innovation and disruption. The book focuses on setting up and sustaining smart factories that are fulfilling the Industry 4.0 vision that is realized through the IIoT and allied technologies.



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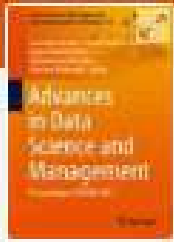
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Machine and Deep Learning (ML/DL) Algorithms for Next-Generation Healthcare Applications

*By V. Pavithra, V. Jayalakshmi*

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# Removal of Outliers and Missing Values in Diabetes Dataset Using Ensemble Method

[M. D. Anto Praveena](#) & [B. Bharathi](#)

Conference paper | [First Online: 13 February 2022](#)

**273** Accesses

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 86)

## Abstract

Missing data imputation is an ongoing and crucial research topic in data mining. There may be many missing values in large dataset. However, there are few methods used solely for downstream analyses, with a few prediction tools, which definitely do need a full descriptor value matrix. We propose and assess a looping imputation method called ensemble based on few imputation methods. By calculating an average over a lot of regression trees which are unpruned, the ensemble method intrinsically constitutes a multiple imputation scheme. Using bagging estimate, boosting estimate and stacking estimate of the ensemble method, we are able to estimate the imputation error. Evaluation is finished on molecular descriptor datasets generated from a diverse choice of pharmaceutical fields with artificially delivered missing values ranging from 10 to 30%. The experimental end result demonstrate that missing values have an amazing impact at the effectiveness of imputation strategies and our approach ensemble is sturdier to missing values than the alternative ten imputation strategies used as benchmark. Additionally, the ensemble method exhibits appealing computational performance and can address high-dimensional data.

## About this paper



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### Cite this paper

Anto Praveena, M.D., Bharathi, B. (2022), Removal of Outliers and Missing Values in Diabetes Dataset Using Ensemble Method. In: Borah, S., Mishra, S.K., Mishra, B.K., Balas, V.E., Polkowski, Z. (eds) *Advances in Data Science and Management . Lecture Notes on Data Engineering and Communications Technologies*, vol 86. Springer, Singapore.  
[https://doi.org/10.1007/978-981-16-5685-9\\_33](https://doi.org/10.1007/978-981-16-5685-9_33)

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**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

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**Title:**

**RE-INVENT ARCHITECTURAL DESIGN AND BUILDING CONSTRUCTION  
PROCESSES WITH ARTIFICIAL INTELLIGENCE**

**Authors & affiliations with email id:**

*R Ramkumar, Associate Professor, Department of Architecture, Sathyabama Institute of  
Science and Technology, Chennai, India  
email ID: prof.ar.rk@gmail.com*

**Abstract:**

Artificial Intelligence (referred as AI henceforth) is everywhere around us now, whether we like it or not we will need to learn about AI, because it obligates to change most key processes of building construction leaving a lot more to be explored in future. AI can help do mundane activities much efficient, quicker and defect-free. This paper would initially start by briefing terminologies and concepts specific to AI, like 1. Data gathering - with the help of sensors, 2. Associating tags to various components, 3. Machine Learning and 4. AI based tools.

And secondly describe how AI can help influence processes like 1. Architectural Concepts and Design, 2. Construction processes, 3. Project management and 4. Operation and Maintenance. The paper will be the reader's stepping stone into the world of building automation using AI and machine learning, providing insights to professionals, research scholars and students who are willing to grab these changes that AI is going to bring to construction industry. This paper will not cover cost factors involved with this change, and save them for future analysis.

**Keywords:** Artificial Intelligence, Architectural Design, Construction processes, Machine Learning, Predictive analysis

# Real Time Prediction of Cab Fare Using Machine Learning

Publisher: IEEE

[Cite This](#)[PDF](#)T. Prem Jacob; A. Pravin; K. Mohana Prasad; G. T. Judgi; R. Rajakumar [All Authors](#)

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## Abstract

### Document Sections

#### I. Introduction

#### II. METHODOLOGY

#### III. IMPLEMENTATION

#### IV. MODULE EVALUATION

#### V. CONCLUSION

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### Authors

### Figures

### References

### Keywords

### Metrics

## Abstract:

For predicting the longer-term events predictive analysis use data which is an archive. For capturing the trends which are important mathematical model is used from past data. The model then uses present data to predict the longer-term or to derive actions to require optical outcomes tones of appreciation in recent time for predictive analytics thanks to development in support technology within areas of massive data in machine learning. Many industries use predictive analytics for making an accurate forecast like giving the amount of fare for the ride within the city. These resource planning are enabled by the forecast as an example, cab fare can be predicted more accurately. A lot of factors are taken into consideration for a taxi start-up company. This research work tries to know the patterns and use different methods for fare prediction. This research work is developed for predicting the cab fare amount within a certain city. The research work involves different steps like training, testing by using different variables like pickup, drop-off location for predicting cab fare.

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DVD ISBN:978-1-6654-8424-4

Conference Location: Tuticorin, India

Print on Demand(PoD) ISBN:978-1-6654-8426-8

# Quality Analysis of Rice Grains Using Morphological Techniques

Publisher: IEEE

Cite This

PDF

Chandrika Vijaya Krishna ; Bade Suchitra ; L. Sujihelen ; M.S. Roobini ; Suja Cherukullapurath ; A. Jesudoss All Authors

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|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Abstract                          | <b>Abstract:</b><br>Human beings from all over the world prefer and consume rice more than any other food. Rice is at its peak of demand when its quality is good. Currently, the kind and quality of rice is determined through a naked-eye visual assessment approach. This method, however, is arduous, time-consuming, requires human skill, and is dependent on the inspector's physical health. To address these issues, this work introduces an automated system that uses digital image processing techniques to identify and classify rice grains. The image processing approach is the most appropriate since it is a non-contact technique that captures the picture of the rice grains. MATLAB is used to pre-process, segment, and extract features from the captured images. Using Neural Networks (NN) and Support Vector Machines (SVM) algorithmic classifications, the quality of rice is assessed based on the extracted features. The results indicate that SVM-based classification performs better than its counterpart based on our comparison study. |                                       |
| Document Sections                 | Published in: 2022 International Conference on Communication, Computing and Internet of Things (IC3IoT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                       |
| I. Introduction                   | Date of Conference: 10-11 March 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | INSPEC Accession Number: 21728630     |
| II. Related Works                 | Date Added to IEEE Xplore: 12 May 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DOI: 10.1109/IC3IoT53935.2022.9767925 |
| III. Proposed System Architecture | ▼ ISBN Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Publisher: IEEE                       |
| IV. Results and Discussion        | Electronic ISBN:978-1-6654-7995-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Conference Location: Chennai, India   |
| V. Conclusion                     | Print on Demand(PoD) ISBN:978-1-6654-7996-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |
| Authors                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |
| Figures                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |
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[Proceedings of the First International Conference on Advanced Scientific Innovation in Science, Engineering and Technology, ICASISSET 2020, 16-17 May 2020, Chennai, India](#)

Research Article

### **PWM based Motor Speed Control using PIC Micro Controller**

Cite [BibTeX](#) [Plain Text](#)

**S. Nirmalraj<sup>1,\*</sup>, V. Senthil Nayagam<sup>1</sup>, M Kavitha<sup>1</sup>, A. Samhith<sup>1</sup>, A. Samhitha<sup>1</sup>**

<sup>1</sup>: Sathyabama Institute of Science and Technology, Chennai, India

\*Contact email: [nirmalraj.eeee@sathyabama.ac.in](mailto:nirmalraj.eeee@sathyabama.ac.in)



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#### **Abstract**

This paper is proposed DC motor for speed controlling using PWM control with the PIC microcontroller. The DC machine is explicitly comparing to the voltage associated over its terminals for controlling the speed. Consequently, on the off chance that the voltage over the terminal of motor is moved, at that point the speed can in like manner be changed. This venture uses the above rule to control the speed of the DC machine by fluctuating the duty cycle of the pulse associated with this. This task uses two data gets interfaced to the microcontroller, which are used to control the speed of motor.

**Keywords** pulse width modulation (pwm) direct current (dc) motor duty cycle motor driver integrated circuit (ic)

Published 2021-01-27 Publisher EAI

<http://dx.doi.org/10.4108/eai.16-5-2020.2304163>

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**Solid State Batteries** pp 65–81 | [Cite as](#)

## Prospective Anodes for Solid-State Lithium-Ion Battery

[Prabhakarn Arunachalam](#) , [Govindhasamy Murugadoss](#), [Chelladurai Karuppiyah](#), [Abdullah M. Al-Mayouf](#) & [Chun-Chen Yang](#)

Chapter | [First Online: 02 November 2022](#)

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Part of the [Advances in Material Research and Technology](#) book series (AMRT)

### Abstract

Due to the high energy demand, the finding of renewable energy resources is of great concern in the global community. In recent years, all-solid-state lithium-ion batteries (ASSLBs) have been a better choice to fulfill these energy requirements. Such a solid battery system employs a solid electrolyte, unlike the modern-day liquid electrolyte-based batteries, and thus facilitates the usage of high-capacity Li metal anodes, thereby realizing high energy densities. However, commercial awareness and practicality of ASSLBs continue to be a hurdle owing to the primary material and cell level concerns that must be overwhelmed. This book chapter thus describes the specific challenges, working principles, and recent advances about carbonaceous and its composites and other kinds of anode materials and discusses their electrochemical features toward ASSLBs. Perspectives and outlooks on particular applications that can profit from the effective execution of ASSLBs are also debated.

### Keywords

## About this chapter



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Arunachalam, P., Murugadoss, G., Karuppiyah, C., Al-Mayouf, A.M., Yang, CC. (2022). Prospective Anodes for Solid-State Lithium-Ion Battery. In: Palaniyandy, N., Abhilash, K.P., Nalini, B. (eds) Solid State Batteries. Advances in Material Research and Technology. Springer, Cham. [https://doi.org/10.1007/978-3-031-12470-9\\_3](https://doi.org/10.1007/978-3-031-12470-9_3)

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## Techniques

Philips Chidubem Tagbo, Onyeka Stanislaus Okwundu, Johnmary Orjiewulu, Cyril Oluchukwu Ugwuoke, Chukwujekwu Augustine Okaro, Sabastine Ezugwu et al.

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## Prospective Anodes for Solid-State Lithium-Ion Battery

Prabhakarn Arunachalam, Govindhasamy Murugadoss, Chelladurai Karuppiiah, Abdullah M. Al-Mayouf, Chun-Chen Yang

Pages 65-81

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## Prospective Cathode Materials for All-Solid-State Batteries

M. S. Ratsoma, K. Makgopa, K. D. Modibane, K. Raju

Pages 83-125

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## Prospective Electrolytes for Solid-State Battery

Sudheer Kumar Yadav, Suman Yadav, K. P. Abhilash, P. Sivaraj, Zdenek Sofer, Jörg J. Schneider

Pages 127-155

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## Novel Design Aspects of All-Solid-State Batteries

P. Robert Ilango, Jeevan Kumar Reddy Modigunta, Abhilash Karuthedath Parameswaran, Zdenek Sofer, G. Murali, Insik In

Pages 157-191

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## Interfaces in Solid-State Batteries: Challenges and Design Strategies

P. Sivaraj, K. P. Abhilash, P. Nithyadharseni, Seema Agarwal, Sagar A. Joshi, Zdenek Sofer

Pages 193-218

# Predicting Stock Price using Data science technique

Publisher: IEEE

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M.S. Roobini ; K. Babu ; Jophra Joseph ; G Ieshwarya. All Authors

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| Show Full Outline ▼                           |
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| Figures                                       |
| References                                    |
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| Metrics                                       |

**Abstract:**  
Persuasion of the topic is aimed at predicting the stability of future markets stocks. The movement of future market evolution has been studied by many researchers. Data fluctuates in stocks, so it becomes a source of efficiency. The purpose of this article is to propose a machine-learning-based model for predicting the stock price Index value from comparing supervise classification machine learning algorithms by predicting stock price increases or stable states. Moreover, the aim of this study is to compare and discuss the performance of various machine learning algorithms based on the data from the transport traffic department. For this project, logistic regression, random forest, decision trees, and naive bayes theorem were used to calculate stock price predictions. An evaluation of the proposed machine learning algorithm technique has been made with regard to identifying the confusion matrix, categorizing data based on priority and comparing it with the best levels of precision, recall and the F1 score.

Published in: 2022 Second International Conference on Artificial Intelligence and Smart Energy (ICAIS)

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| Date of Conference: 23-25 February 2022     | INSPEC Accession Number: 21681158      |
| Date Added to IEEE Xplore: 30 March 2022    | DOI: 10.1109/ICAIS53314.2022.9742772   |
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**Title:**

**PLANNING FOR TRANSIT ORIENTED DEVELOPMENT - A CASE STUDY OF  
CHENNAI**

**Authors & affiliations with email id:**

*Dr.Devyani Gangopadhyay, Dean, School of Building and Environment, Sathyabama Institute of  
Science and Technology, devyanigangopadhyay@gmail.com*

**Abstract:**

Ever increasing density of population in the cities, has led to number of challenges in the urban areas of today. One of such challenges includes the growing number of automobiles in the cities which in turn leads to traffic congestion, pollution, increased travel time for the inhabitants leading to deteriorated quality of life. To address this problem and provide a sustainable solution, many of the cities in the world have proposed a sustainable mobility plan by promoting the mass rail transit system. India is no exception to this. Metro rails are being proposed and executed in more than twenty cities in India. The cities aim towards an integrated land use and transport or a transit-oriented development. The task is difficult especially in cities which are already developed and the introduction of metros an afterthought. The paper studies the case of Chennai, India and devises a methodology to assess the existing land use characteristics and propose for a transit-oriented development for future. Factor Analysis is used to assess the factors which influence the existing development in the influence zone of the new metro transit corridor, analyse the existing scenario and propose for future development.



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**Title:**

**PASSIVE DESIGN TECHNIQUES AND THERMAL COMFORT IN A  
TRADITIONAL SETTLEMENT  
CASE OF CHAMPAGUDA NEAR ARAKU**

**Authors & affiliations with email id:**

*Jhannupriyaa, Assistant Professor, Sathyabama Institute of Science & Technology,  
jhannupriyaa.arch@sathyabama.ac.in*

*Deepalakshmi S, Associate Professor, Sathyabama Institute of Science & Technology,  
deepalakshmi.arch@sathyabama.ac.in*

**Abstract:**

Vernacular architecture by its passive design strategies, developed by the local people gives a comfortable indoor environment. This study is carried out in vernacular settlement located in the valley of Araku which has moderate climate. Qualitative analysis on the passive strategies adopted and quantitative analysis of thermal comfort in the Built form. To understand the thermal comfort between traditional and modern building the field study was conducted simultaneously on the indoor and outdoor temperature of the building and on the components of the building in the month of July with the Calibrated digital instruments. Findings from the comparative study exhibit the traditional construction to achieve thermal comfort in comparison with modern buildings. This paper also demonstrates the distinct ways available vernacular materials are used in their dwelling units to achieve thermal comfort efficiently.

**Keywords:** traditional, Passive design, thermal comfort, vernacular





**1st International Conference on  
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**Title:**

**OUTDOOR THERMAL COMFORT IN PEDESTRIAN WALKWAYS**

**Authors & affiliations with email id:**

*Shwetha M, Master student, Sathyabama Institute of Science and technology,  
shwethaarch1419@gmail.com*

*Ebin Harrison, Associate professor, Sathyabama Institute of Science and technology,  
ebinharrison.arch@sathyabama.ac.in*

*Sheetal Amraotkar, Associate professor, Sathyabama Institute of Science and technology,  
sheetal.arch@sathyabama.ac.in*

**Abstract:**

Thermal comfort is one of the most critical parameters that contribute to comfortable outdoor environment. The outdoor spaces are equally vital for improving comfort in indoor environment and also contribute to social, environmental, and economic well-being of the end users. The purpose of this research is to investigate the key parameters that influence the outdoor thermal comfort of pedestrians in a university campus in Chennai, India, which experience hot and humid climate. The thermal environment of tropical cities is complex, and thermal indices like physiological equivalent temperature (PET) and mean radiant temperature (T<sub>mr</sub>) can provide detailed information on how this environment perform thermally in outdoor areas. Micro meteorological measurements like air temperature, relative humidity and wind speed were recorded using data loggers on strategic locations within the university campus based on built parameters like sky view factor, orientation and geometry of streets, and vegetation. Physiological equivalent temperature and mean radiant temperature were simulated for the studied locations using ENVI-met software. By altering the sky view factor, vegetation cover and aspect ratio new scenario was developed and analysed. The thermal performance of outdoor areas for existing and the new iteration were compared and the relationship between built parameters and outdoor thermal comfort is established. The study will enable architects to consider outdoor thermal comfort as an important parameter while designing and developing campuses, particularly in tropical climates.

**Key words:** thermal comfort, pedestrian walkways, hot and humid climate

2022 | OriginalPaper | Chapter

# Object Detection in Railway Track Using Industrial IoT (IIoT)

Authors : L. Sujihelen, Kota Vinodh Kumar, Madhav Srinivas, G. Nagarajan

Published in: [Technology Innovation in Mechanical Engineering](#)

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## Abstract

In railway track, more accidents occur due to the objects in the railway track. In train, everyday getting to thousands of passengers traveling by trains. Consequently, the protection of the travelers has to be safeguarded. The proposed system is used to sense the object in the railway track and intimate information to the control office and engine driver. So, this proposed work can observe the object using sensor, and the information about the object is transferred before the 10 min of the arrival of the train. The railroad is totally automated using Bluetooth, RFID, Wi-Fi, GPS, live video streaming, and GPS. The live video stream is transmitted to the cloud from the mobile application. To avoid the accidents, the train may be stopped.

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### Sensorless Control of Reboost Converter for Grid-Connected WECS

#### Abstract

WECS for brushless DC motor using a reboost converter has been proposed using sensorless concept of electromotive force. Wind output power is erratic in nature; hence, sensorless control is proposed by using a reboost converter with the varied firing angle of power switches at  $90^\circ - \alpha$  and  $150^\circ$  which is introduced to operate the brushless DC motor with various ranges of speed. A closed loop control is attained with the help of PI

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### Intelligent Securing the Industrial IoT Data Based on Consensus Mechanism

#### Abstract

Industrial Mechanical Internet of Things (IIoT) assumes a crucial job for industry 4.0; individuals are focused on actualizing a general, versatile and make sure about IIoT framework to be embraced across different ventures. Be that as it may, existing IIoT frameworks are powerless against single purpose-of-disappointment and noxious assaults, which can not offer stable types of assistance. Because of the versatility and security guarantee of

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### Object Detection in Railway Track Using Industrial IoT (IIoT)

#### Abstract

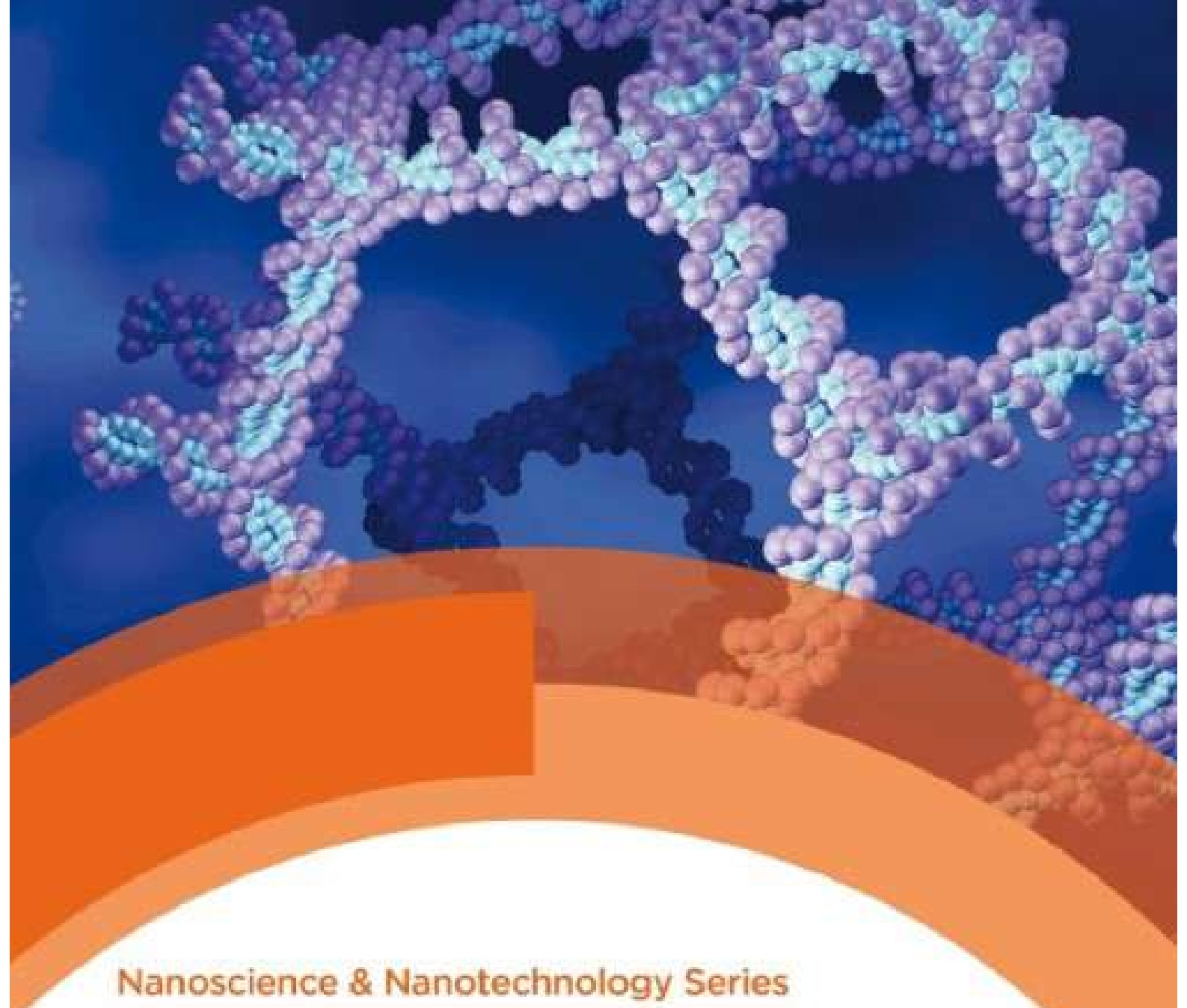
In railway track, more accidents occur due to the objects in the railway track. In train, everyday getting to thousands of passengers traveling by trains. Consequently, the protection of the travelers has to be safeguarded. The proposed system is used to sense the object in the railway track and intimate information to the control office and engine driver. So, this proposed work can observe the object using sensor, and the information about the object is transferred before the 10 min of the arrival of the train. The railroad is totally automated using Bluetooth, RFID, Wi-Fi, GPS, live video streaming, and GPS. The live video stream is transmitted to the cloud from the mobile application. To avoid the accidents, the train may be stopped.

L. Sujithelen; Kota Vinodh Kumar; Madhav Srinivas; G. Nagarajan

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### Construction of Hele Shaw Apparatus for Subsonic Flow Visualization

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| Object Detection in Railway Track Using Industrial IoT (IIoT)        | Springer Nature Singapore                                                                                                                      |
| <b>Authors</b>                                                       | <b>Book</b>                                                                                                                                    |
| L. Sujihelen<br>Kota Vinodh Kumar<br>Madhav Srinivas<br>G. Nagarajan | Technology Innovation in Mechanical Engineering<br>Print ISBN: 978-981-16-7908-7<br>Electronic ISBN: 978-981-16-7909-4<br>Copyright Year: 2022 |
| <b>Copyright Year</b><br>2022                                        | <b>DOI</b><br><a href="https://doi.org/10.1007/978-981-16-7909-4_35">https://doi.org/10.1007/978-981-16-7909-4_35</a>                          |

The top half of the cover features a complex molecular structure, possibly a protein or a nanoscale material, rendered in shades of purple, blue, and white. Below this, several overlapping, semi-transparent orange arcs curve across the page, creating a sense of depth and movement.

Nanoscience & Nanotechnology Series

# Concepts and Design of Materials Nanoarchitectonics

Edited by Omar Azzaroni and Katsuhiko Ariga

# Nanostructured Biocompatible Materials

V. KARTHICK<sup>\*a</sup> AND KATSUHIKO ARIGA<sup>\*b, \*c</sup>

<sup>a</sup> Centre for Ocean Research (DST-FIST Sponsored Centre), Sathyabama Institute of Science and Technology, Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai – 600119, India, <sup>b</sup> International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0044, Japan, <sup>c</sup> Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa, Chiba 277-8561, Japan

\*E-mail: vkarthick.cor@sathyabama.ac.in, ARIGA.katsuhiko@nims.go.jp

## 6.1 Introduction

Biomaterials are of widespread interest as their relevance in improving clinical research is immense. The current challenge remains in developing biocompatible materials for improving the quality and efficiency of therapies. Materials science and bioengineering have combined to offer various approaches and nanostructured biomaterials play a huge role in the emergence of tissue engineering, regenerative medicine, and therapies. Biomaterials have helped in prolonging patients' health and relieving suffering in clinical settings. They also serve as an excellent tool for doctors, biomedical researchers, and scientists. Nanostructured biomaterials intended for human applications when implanted undergo cellular responses and the tolerable materials are often considered biocompatible materials. An ideal biocompatible material will have very little *in vivo* toxicity, minimal inflammatory response, site-specificity, cell support, and fewer graft rejections. Biocompatibility is defined as the ability of the material or device to perform a set of specific functions with appropriate host response and evaluation of adverse alterations in homeostatic conditions that determine the response. Simply put, it is the evaluation of the biological response to the material studied to check whether that material works as intended and presents no significant side effects to the patients or study organism. The ability to tune the size, shape and structure of materials led to the concept of nanoarchitectonics, where self-assembly is an important component.<sup>1</sup> In this chapter, we will discuss some of the nanostructured materials that have improved the efficiency of biomaterials in the field of medicine.



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## **Chapter 5 Surface Engineering Towards Better Material Performance**

*Ying Wang, Zili Pang and Junhui He*

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## **Chapter 6 Nanostructured Biocompatible Materials**

*V. Karthick and Katsuhiko Ariga*

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# Music Generation Using Deep Learning

[R. I. Minu](#) , [G. Nagarajan](#), [Rishabh Bhatia](#) & [Aditya Kumar](#)

Conference paper | [First Online: 04 June 2022](#)

**195** Accesses

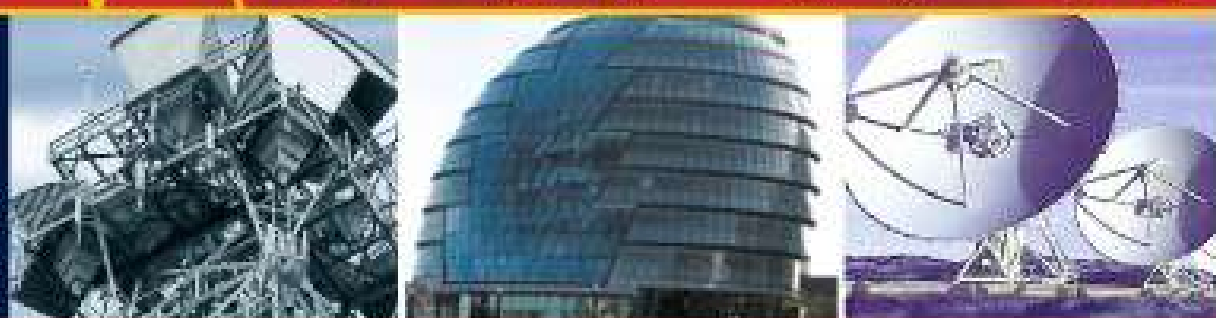
Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 271)

## Abstract

In recent years, recurrent neural network models have defined the normative process in producing efficient and reliable results in various challenging problems such as translation, voice recognition and image captioning, thereby making huge strides in learning useful feature representations. With these latest advancements in deep learning, RNNs have garnered fame in computational creativity tasks such as even that of music generation. In this paper, we investigate the generation of music as a sequence-to-sequence modelling task. We compare the performance of multiple architectures to highlight the advantages of using an added attention mechanism for processing longer sequences and producing more coherent music with a better quality of harmony and melody. The dataset used for training the models consists of a suitable number of MIDI files downloaded from the Lakh MIDI dataset. To feed the MIDI files to the neural networks, we use piano roll as the input representation. The recurrent neural networks learn long-term temporal specific structures and patterns present in musical data. Once we are done with training, we can generate the musical data using a primer of musical notes.

## Keywords

Satchidananda Dehuri  
Bhabani Shankar Prasad Mishra  
Pradeep Kumar Mallick  
Sung-Bae Cho *Editors*



# Biologically Inspired Techniques in Many Criteria Decision Making

Proceedings of BITMDM 2021



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G. Kalaiarasi, M. Maheswari, M. Selvi, R. Yogitha, Prathima Devadas  
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## [Effect of COVID-19 on Stock Market Prediction Using Machine Learning](#)

# Multi-variant Analysis of Climatic Conditions and Soil Rainfall with Best Crop Prediction

Publisher: IEEE

[Cite This](#)[PDF](#)T. Prem Jacob ; A. Pravin ; K.Mohana Prasad ; R. Rajakumar [All Authors](#)

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## Abstract

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- IV. Proposed System
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### Metrics

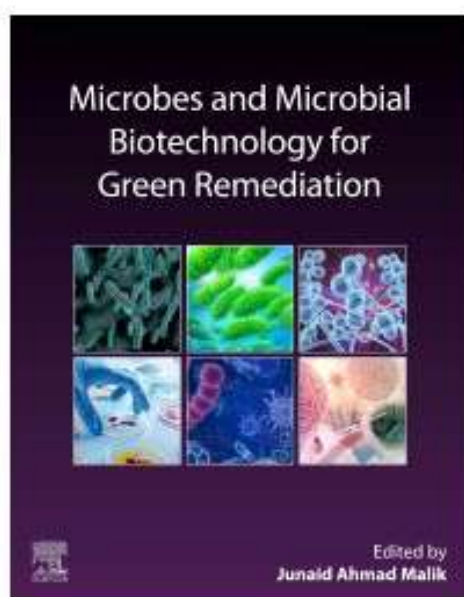
## Abstract:

Agriculture is an important job in the development of the nation's economy. The climate along with other natural variations has to turn out to be a significant risk in the agricultural field. Machine Learning technology can be used for determining the best crop suitable for the climatic condition, soil condition from the data set for addressing this issue. Crop Yield Prediction includes anticipating the yield of the crop from accessible verifiable information like climate parameter, soil parameter, and notable yield. Such huge numbers of individuals are doing fertile agriculture by developing the yield on ill-advised soil. To actualize the application to recognize the sorts of oil, water wellspring of that land whether that land depends on downpour or bore water. Furthermore, recommend what of the crop is reasonable for that dirt. So, through this application to the individual to think about agriculture. It tends to be improved by the utilization of many mechanical assets, device, and methods. Find the kind of crop that is appropriate for that specific soil.

**Published in:** 2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)**Date of Conference:** 28-30 April 2022**INSPEC Accession Number:** 21763770**Date Added to IEEE Xplore:** 24 May 2022**DOI:** 10.1109/ICOEI53556.2022.9777102

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# Chapter 29 - Biodegradation of microplastics and synthetic polymers in agricultural soils

Kamarajan Rajagopalan <sup>1\*</sup>, Johnson Retnaraj Samuel Selvan Christyraj <sup>1\*</sup>, Subbiahannadar Chelladurai Karthikeyan <sup>1</sup>, Madesh Jeevanandam <sup>2</sup>, Harsha Ganesan <sup>3</sup>, Melinda Grace Rossan Mathews <sup>1</sup>, Jackson Durairaj Selvan Christyraj <sup>1</sup>

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## Abstract

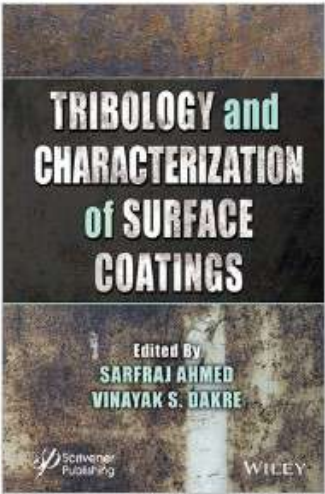
Microplastics and synthetic polymers are some of the most significant pollutants in agricultural soil. According to the US National Oceanic and Atmospheric Administration declaration, when the plastic fragment is less than 5 mm, it is considered to be microplastic. The presence of microplastics has been detected ubiquitously in the agricultural soil. The environmental release of microplastics has increased unaccountably, whereas the help of advanced and updated technologies can stop the accumulation of plastics. The advanced bioremediation and natural process of biodegradation is an effective environmental safety process to eliminate the plastic fragments from the agricultural soil. However, understanding the biodegradation process of microplastics and synthetic polymers in agricultural soil is a challenge due to the multifactorial process such as abiotic effects, hydrolysis, fragmentation, heat, UV rays, and enzymatic degradation under anaerobic condition. The yield of the biodegradation process provides Environmental Protection Agency (EPA), glycol, carbon source, and the production of green gases. Whereas, the micro- and nanosize particles of plastics have mixed with natural fertilizers and that can cause a severe impact on the production of biogas. In this chapter, we have included the severe direct and indirect effects, identification techniques, and advance perspectives to eliminate the plastic fragments from the agricultural soil.

# **TRIBOLOGY and CHARACTERIZATION of SURFACE COATINGS**

**Edited By**  
**SARFRAJ AHMED**  
**VINAYAK S. DAKRE**

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# Tribology and Characterization of Surface Coatings

Sarfraz Ahmed (Editor), Vinayak S. Dakre (Editor)

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## DESCRIPTION

TRIBOLOGY AND CHARACTERIZATION OF SURFACE COATINGS

## Methods of Microstructural Characterization of Coatings

A. M. Kamalan Kirubaharan\*, D. Dinesh Kumar, K. Gobi Saravanan and Subhenjit Hazra

*Center for Nanoscience and Nanotechnology, Sathyabama Institute of Science and Technology, Jeppiaar Nagar, Chennai, India*

### *Abstract*

This chapter describes the microstructural characterization of coatings prepared through physical vapor deposition (PVD) route. Coatings prepared through PVD are extensively used to enhance the tribological performance of forming tools, cutting tools, and machine components. In such applications, the microstructure of coatings are the most important factors widely used to evaluate the product and materials property. Recently, considerable attention has given to focus on the microstructure at the micro/nano level to clarify and to study the influence of microstructure in tribological performance of the coating. The primary characterization techniques used for the microstructural analysis of the coatings are X-ray diffraction (XRD), Raman spectroscopy, scanning electron microscopy (SEM) coupled with energy dispersive X-ray spectroscopy (EDS), atomic force microscopy (AFM), transmission electron microscopy (TEM), and X-ray photoelectron spectroscopy (XPS). These techniques are particularly useful in assisting the development of novel coatings by studying their microstructure at different scales.

**Keywords:** Microstructure, X-ray diffraction, Raman spectroscopy, tribochemistry, microscopic analysis



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## 2 Tribological Investigation of Developed Nanocomposite $\text{MoS}_2$ - $\text{TiO}_2$ - $\text{ZrO}_2$ Coating Material

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### 2.2 Materials and Methods

### 2.3 Experimental Details

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### 3.4 Scanning Electron Microscopy

### 3.5 Energy Dispersive X-Ray Spectroscopy

### 3.6 Transmission Electron Microscopy

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### 4.3 Methods of Wear Testing

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## 5 Mechanical Behavior of Thermal Spray Coatings

### 5.1 Introduction

# Intrusion Detection System in Network using Decision Tree

Publisher: IEEE

Cite This



Avula Venkata Srinadh Reddy ; Boddu Prasanth Reddy ; L. Sujihelen ; A.Viji Amutha Mary ; A. Jesudoss ; P. Jeyanthi All Authors

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|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                              |
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| Abstract                  | <b>Abstract:</b><br>In recent decades, researchers have been working on improving intrusion detection systems (IDS). Computer networks can be detected as potentially harmful by using Genetic Algorithms (GAs). A series of classification rules has been generated based on various features of connection data, such as duration and types of connections. Detection of data originating from attackers or originals is easily done in this proposed work. This proposed work is to detect the data which is received from attacker or non-attacker node. |                                              |
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# Integrative System of Remote Accessing Without Internet Through SMS

[L. Sujihelen](#), [M. Dinesh](#), [Sai Shiva Shankar](#), [S. Jancy](#), [M. D. Antopraveena](#) & [G. Nagarajan](#)

Conference paper | [First Online: 17 May 2022](#)

**113** Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 430)

## Abstract

A mobile phone is a device that is used to make and receive calls from anywhere in the world. The major problems of these mobiles are losing it. This proposed system is to focus on the problem of finding the lost cell phone. The observations compiled in existing mobile applications show that most mobile applications for keeping track of lost phones focus on three functions, namely, client–server communication, recovery of SIM card data and the activation event. The major drawback of these existing applications is that they require Internet. The proposed system focuses on overcoming those A problems without Internet as it may not be available all the time. This proposed system develops an application that helps to track our lost mobile phone without the help of Internet with less communication and less memory storage.

## Keywords

## About this paper



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### Cite this paper

Sujihelen, L., Dinesh, M., Shankar, S.S., Jancy, S., Antopraveena, M.D., Nagarajan, G. (2022). Integrative System of Remote Accessing Without Internet Through SMS. In: Mohanty, M.N., Das, S. (eds) Advances in Intelligent Computing and Communication. Lecture Notes in Networks and Systems, vol 430. Springer, Singapore. [https://doi.org/10.1007/978-981-19-0825-5\\_42](https://doi.org/10.1007/978-981-19-0825-5_42)

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## Abstract

The worldwide energy demand urges to pay attention to the third-generation renewable energy sources. Microalgae are a potential resource that plays a vital role to meet the energy crisis as well as bioremediation of wastewater. The combination of biodiesel production from microalgae and industrial wastewater treatment leads to minimize the utilization of freshwater resource, reduces the nutrients supplement cost for microalgae growth, helps to remove the presence of nitrogen and phosphorus available in the industrial wastewater. Depending on the microalgae species the culture conditions like temperature, light intensity, nutrients, and aeration, the lipid accumulation, and its compositions are varied. The accumulation of lipid content in microalgae can also be improved under nitrogen starvation, phosphate limitation and presence of high iron content. Lipid accumulation within microalgae also gets varied between the different microalgae species. Oleaginous microalgae are recommended for biodiesel production due to its adverse adaptability to grow even at extreme environmental conditions, capability to utilize the nutrients available in the wastewater for their growth, ability to be cultivated in lesser land space, capacity to accumulate an enormous amount of triglycerols and characteristics to fix atmospheric carbon dioxide. Few lipids-rich microalgae *Chlorella* sp., *Scenedesmus* sp., *Neochloris* sp., *Botryococcus* sp. are capable to accumulate about 20–50% of lipid content. The objective of the study is to analyze the industrial wastewater treatment via microalgae for biodiesel production which is more economics, eco-friendly, and cost-effective, and their prospects and challenges.

## Notices

Knowledge and best practice in this field are constantly changing. As new research and experience broaden our understanding, changes in research methods, professional practices, or medical treatment may become necessary.

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Integrated Environmental Technologies for  
Wastewater Treatment and Sustainable  
Development  
2022, Pages 303-320



## Chapter 13 - Wastewater treatment by oleaginous algae and biodiesel production: Prospects and challenges

Narasiman Nirmala <sup>a</sup>, Shanmuganantham Selvanantham Dawn <sup>a, b</sup>, Jayaseelan Arun <sup>a</sup>

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# 11 - Hydrothermal gasification of biomass for hydrogen production: Advances, challenges, and prospects

Narasiman Nirmala <sup>a</sup>, Munusamy Subathra <sup>b</sup>, Sivaprasad Shyam <sup>c</sup>, Shanmuganantham S. Dawn <sup>a</sup>  
, Kannappan P. Gopinath <sup>c</sup>, Jayaseelan Arun <sup>a</sup>

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## Abstract

This chapter summarizes the various routes to produce gaseous fuel from biomass. Urbanization, modernization and smart living style meet huge energy need globally. Biomass like algae, plants, forest waste, agricultural residue, etc., is processed via hydrothermal gasification, hydrothermal liquefaction, and pyrolysis for biofuels production. Hydrogen is also produced from wastewater, the aqueous phase of hydrothermal liquefaction via photocatalysis and steam reforming processes. In recent years, researchers have reported routes for hydrogen production via methanation reactions. Novel photocatalysts were decoded in recent years for simultaneous treatment of wastewater and production of hydrogen gas. Future research was directed towards the safe storage and distribution of hydrogen gas for commercial vehicles.



Previous chapter in book

Next chapter in book





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# Improving the Efficiency of E-Healthcare System Based on Cloud

[L. Sujihelen](#), [S. T. Nikhil Sidharth](#), [Miryala Sai Kiran](#), [M. D. Antopraveena](#), [M. S. Roobini](#) & [G. Nagarajan](#)

Conference paper | [First Online: 17 May 2022](#)

**113** Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNs, volume 430)

## Abstract

The human services supplier might be moving from paper records to electronic health records (EHRs) or might be utilizing EHRs as of now. EHRs permit suppliers to utilize data all the more successfully to improve the quality and productivity of your consideration; however, EHRs won't change the protection assurances or security shields that apply to your wellbeing data. This venture centers around creating secure cloud structure for developing and getting to believe registering administrations in all degrees of open cloud sending model. Along these lines, disposes of both inside and outside security dangers. These outcomes in accomplishing information classification, information honesty, confirmation, and approval, disposing of both dynamic and detached assaults from cloud arrange condition. Building up a safe cloud structure for getting is to believe figuring and capacity benefits in all degrees of open cloud organization model.

## Keywords

## About this paper



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Sujihelen, L., Nikhil Sidharth, S.T., Kiran, M.S., Antopraveena, M.D., Roobini, M.S., Nagarajan, G. (2022). Improving the Efficiency of E-Healthcare System Based on Cloud. In: Mohanty, M.N., Das, S. (eds) *Advances in Intelligent Computing and Communication. Lecture Notes in Networks and Systems*, vol 430. Springer, Singapore. [https://doi.org/10.1007/978-981-19-0825-5\\_45](https://doi.org/10.1007/978-981-19-0825-5_45)

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# Improved Grid Power Transmission using Solar Panel (Pv-Statcom) in Day and Night

Publisher: IEEE

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PDF

Waseem Sultana ; S.D. Sundarsingh Jebaseelan [All Authors](#)

46

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## Abstract

### Abstract:

A swift emergent of inhabitants providing electricity to the humanity is prime confront for electrical engineering. Implementation of generations mounting quick as a flash universally which makes electricity act as a backbone to run any business. A Contemporary conception of employing solar PV panel inverter as STATCOM, titled as PV-STATCOM, in interconnected transmission system to improve the limits of stable power transfer. For the purpose of improving stable power transmission restrictions, the intact inverter evaluation of solar PV farm which remains aestivating in the hours of darkness is deployed with voltage. The above objective is attained for usage of the inverter capacity in day time which is left behind the production of real power. In the day and night even whilst generating huge quantities of real power, improvement is done by PV-STATCOM under which transmission limits are stable. If there is no sag occurs in the transmission line. It can be performed in both voltage sag and swell condition of operations

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I. Introduction

II Literature Survey

III Proposed Methodology

IV Results and Discussion

V Conclusion

## Authors

## Figures

## References

## Keywords

## Metrics

## About this chapter



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Ravikanth, R., Jacob, T.P. (2022). Implementation of Robust Privacy-Preserving Machine Learning with Intrusion Detection and Cybersecurity Protection Mechanism. In: Kumar, P., Obaid, A.J., Cengiz, K., Khanna, A., Balas, V.E. (eds) A Fusion of Artificial Intelligence and Internet of Things for Emerging Cyber Systems. Intelligent Systems Reference Library, vol 210. Springer, Cham. [https://doi.org/10.1007/978-3-030-76653-5\\_10](https://doi.org/10.1007/978-3-030-76653-5_10)

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# Implementation of Intelligent Residential Fire Extinguisher System

Publisher: IEEE

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PDF

C. Bhuvaneswari ; M. Kavitha ; W.Abitha Memala ; M. Pushpavalli All Authors

105  
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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Abstract               | <b>Abstract:</b><br>A new generation Intelligent fire extinguishing systems have been proposed to rescue humans and important documents which would be flamed. The Automatic Fire Extinguisher system can be controlled by Smartphones through Internet of things. It is a hardware-based model, accustomed automatically to extinguish the fireplace. Instructions may be given to the robot concerning its movement, turning on its water pump. It starts to manoeuvre within the direction with reference to fire intensity once when it senses the heat. The motor speed is adjusted with regard to the temperature range to pump the water. So that this robot pumps the accurate amount of water which is required to extinguish the fireplace. Proteus is used for Simulation of Fire Extinguisher and Python is used for coding in the Proteus. |                                                |
| Document Sections      | <b>Published in:</b> 2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                |
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| IV. Simulation Results |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Conference Location:</b> Tirunelveli, India |
| V. Flowchart           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                |
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**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

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**Title:**

**EVALUATING THE IMPACT OF TRANSITION SPACES ON THE INDOOR  
COMFORT CONDITIONS OF A NATURALLY VENTILATED INSTITUTION  
BUILDING**

**Authors & affiliations with email id:**

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and Technology, Chennai India, [sheetal.arch@sathyabama.ac.in](mailto:sheetal.arch@sathyabama.ac.in)*

**Abstract:**

The Transition spaces connect between the interior space and exterior environment, and act as intermediate or a third space. A well-designed transition space acts as microclimate modifier for the interior spaces. The study focuses on the role of transition spaces in creating comfortable thermal environment in classrooms of an educational Institute for a hot humid climate. The aim of the study is to investigate the impact of transition spaces on creating Indoor thermal comfort. The quantitative data was collected through field measurements for Air Temperature on typical summer Day. Further, field data was collected in different orientations and various Classrooms within an institutional campus. Adaptive thermal comfort metrics was used to compare the performance on the built geometry. The spatial distribution of adaptive thermal comfort was simulated using IESVE software. Further, proposed new scenarios in built geometry were developed by altering built parameters like aspect ratio and depth of the transition space. The Indoor thermal comfort performance of the proposed scenarios was compared with the existing condition to establish the relationship between built parameters and comfort conditions. Significant improvement in comfort level of indoor spaces was evident in the results which suggest that transition spaces optimize the indoor space comforts levels by reducing the Indoor temperature by 0.5oC to 2oC. The study proves that changes in aspect ratio and corridor width significantly impacts on the Indoor comfort. This study can further help designers for understanding that best efficient transitions space has positive impact for a healthy learning space.

**Keywords:** Adaptive Thermal comfort, Aspect Ratio, Corridor Depth, Orientation



# About this paper



## Cite this paper

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[Intelligent Technologies and Robotics](#)

[Intelligent Technologies and Robotics \(RO\)](#)



**Biologically Inspired Techniques in Many Criteria Decision Making** pp 603–612 | [Cite as](#)

# Image Colorization Using CNNs

[R. I. Minu](#) , [S. Vishnuvardhan](#), [Ankit Pasayat](#) & [G. Nagarajan](#)

Conference paper | [First Online: 04 June 2022](#)

**184** Accesses

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 271)

## Abstract

This paper presents a survey on the current technological processes that are used to colorize images with little or no human intervention, using image processing and machine learning techniques. We also analyze the more recent deep- learning-based approaches, specifically those using convolutional neural networks (CNNs), which are specially optimized mathematical models for image processing and manipulation. By diving deep into the mathematical and statistical theory behind the implementation of these models, we have managed to decipher the essence of the process of colorization. Here, in this paper we present a comparative study of different approach and then propose changes that may theoretically increase the accuracy and color-reproducibility of these models.

## Keywords

 Chapter and Conference Paper

## Image Colorization Using CNNs

This paper presents a survey on the current technological processes that are used to colorize images with little or no human intervention, using image processing and machine learning techniques. We also ... recen...

R. I. Minu, S. Vishnuvardhan, Ankit Pasayat... in *Biologically Inspired Techniques in Many C...* (2022)

 Chapter and Conference Paper

## Video Colorization Using CNNs and Keyframes Extraction: An Application in Saving Bandwidth

A raw colored video takes up around three times more memory size than it's grayscale version. We can exploit this fact and send the grayscale version of a colored video along with a colorization model instead ...

Ankur Singh, Anurag Chanani, Harish Kamick in *Computer Vision and Image Processing* (2020)

 Book and Conference Proceedings

## Computer Vision – ECCV 2016

14th European Conference, Amsterdam, The Netherlands, October 11–14, 2016, Proceedings, Part IV

Bastian Leibe, Jiri Matas, Nicu Sebe... in *Lecture Notes in Computer Science* (2016)



# Hybrid Algorithm for Security of Data Over Wireless Transfer with Disease Prediction in Machine Learning

Publisher: IEEE

Cite This

PDF

Deepa, D.; Vignesh, R.; GowriManohari, V.; Meenil Jenifer, Y.; Nithya, S.; Daphine Desona C.A Clemency [All Authors](#)

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## Abstract

### Document Sections

I. Introduction

II. Related Work

III. Proposed Work

IV. System Architecture

V. Performance Analysis

[Show Full Outline](#)[Authors](#)[Figures](#)[References](#)[Keywords](#)[Metrics](#)

## Abstract:

Data security is major issue in the entire field. With the evolving technological advancements in our day to day life security of personal data is a primary concern for all. Many intruders and hackers are eagerly waiting for personal data of the people which can be used in various means for their works. They always have an eye on the personal information of the people. And the second issue is that diagnosing of diabetes by the doctor will be some time prone to mistakes because it is natural that human makes mistakes but not the machines. So to overcome this issue we develop a hybrid secure algorithm which encrypts the patient personal information which they wish not to share to anyone outside the hospital by crypto AES encryption and hashing using SHA-256 and then storing the data in database which will be accessible only to the patient and the doctor. Together with encryption of the patient personal data and medical data our proposed system will effectively evaluate the data by a trained machine learning model to check whether a person is actually suffering from diabetes or not. We use logistic regression for evaluating the patient medical data to predict the health status so mistakes can be avoided in prediction as the prediction is done by the trained machine. Then doctor can give the treatment depending on the health status. As a result this system will give a sustainable solution to people for safely transmitting their personal data as well as medical data through wireless medium along with diabetes disease prediction.

Published in: 2022 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)

Date of Conference: 07-09 April 2022

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DOI: 10.1109/ICSCDS53736.2022.9761030

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Conference Location: Erode, India





## Waste to Chemicals

[P. Priyadharsini](#), [S. Sarojadevi](#), [S. A. Anitha](#), [S. S. Dawn](#), [N. Nirmala](#) & [J. Arun](#)

Chapter | [First Online: 02 September 2022](#)

292 Accesses

### Abstract

Waste is generated globally in various sectors like forest, food, agriculture, wastewater treatment plants, and industrial left out. Globally, various research groups have explored these wastes as a sustainable resource for the production of energy (biofuels), feed, chemicals, and value-added materials. These wastes are primarily biodegradable and underutilized. Reduce, recycle, and reuse are the common terms that come in waste management, in the current scenario, "recover and reutilize" has also been added to it since it is a valuable resource. Aim and need for sustainable production and latest technologies pave way for the usage of waste biomass for synthesis of valuable materials. Platform chemicals (lignin, biofuels, bioactive compounds, Nano cellulose, 5-Hydroxymethylfurfural (5-HMF), etc.) were produced via fermentation, depolymerization, hydrothermal liquefaction, etc. from waste biomass. Value-added products recovery primarily depends upon the biochemical composition of waste. Processing of renewable and abundantly available waste helps in reduction of production costs and environmental concerns. This book chapter provides the routes for sustainable production of platform chemicals from waste with simultaneous solution of effective waste management.

### Keywords

## About this chapter



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### Cite this chapter

Priyadharsini, P., Sarojadevi, S., Anitha, S.A., Dawn, S.S., Nirmala, N., Arun, J. (2022). Waste to Chemicals. In: Jacob-Lopes, E., Queiroz Zepka, L., Costa Deprá, M. (eds) Handbook of Waste Biorefinery. Springer, Cham. [https://doi.org/10.1007/978-3-031-06562-0\\_18](https://doi.org/10.1007/978-3-031-06562-0_18)

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[Biomedical and Life Sciences](#)

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## [Waste to Chemicals](#)

P. Priyadharsini, S. Sarojadevi, S. A. Anitha, S. S. Dawn, N. Nirmala, J. Arun

Pages 505-524

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## [Fundamentals for Waste-to-Energy from Anaerobic Digestion Technologies: An Overview](#)

Terrell Thompson, Phuong Linh Ngo, Mazdak Rasapoor, Navid Taghavi, Saeid Baroutian

Pages 525-564

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## [Composting Technologies for Biowastes: Environmental and Techno-Economic Feasibilities under Biorefinery Concepts](#)

Ayoub Hacuas, Anas Tallou, Fatima Ezzahra El Minaoui, Omar Bouhnik, Ilham Zahir, Aziz Faissal et al.

Pages 565-581

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## [Vermicomposting Technology: A Sustainable Option for Waste Beneficiation](#)

Hupenyu A. Mupambwa, Mayday Haulofu, Adornis D. Ncizah, Pearson N. S. Mkeni

Pages 583-600

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## [Land Application of Organic Waste Compost](#)

# Hand Sign Language Interpreter using Machine Learning Model

Publisher: IEEE

Cite This

PDF

T. Prem Jacob ; A. Pravin ; K. Mohana Prasad ; G T. Judgi ; R. Rajakumar All Authors

74  
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Text Views



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| IV. Deploying the model in Django framework |
| V. RESULTS AND DISCUSSION                   |
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**Abstract:**  
Hand gestures are those gestures that are very expressive. Hand gestures are the non-verbal method of communication. These hand gestures involve different movements or positioning of fingers which convey a message. These hand gestures may represent any short messages like numbers, greetings, or any other message. Here, a machine learning model which classifies images of various gestures has been built and trained. This model is implemented in many types of convolution neural networks (CNN) and obtain an accuracy graph. The best convolution neural network with the best results is chosen and that model is deployed in the Django framework by converting it to a (.h5) file. Hence the output will be in a web application.

**Published in:** 2022 International Conference on Electronics and Renewable Systems (ICEARS)

**Date of Conference:** 16-18 March 2022

**Date Added to IEEE Xplore:** 13 April 2022

**INSPEC Accession Number:** 21688375

**DOI:** 10.1109/ICEARS53579.2022.9752405

**Publisher:** IEEE

**Conference Location:** Tuticorin, India

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**Print on Demand(PoD) ISBN:**978-1-6654-8426-8





**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

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**Title:**

**EVALUATING THE IMPACT OF TRANSITION SPACES ON THE INDOOR  
COMFORT CONDITIONS OF A NATURALLY VENTILATED INSTITUTION  
BUILDING**

**Authors & affiliations with email id:**

*Manaswini Devi S, Department of Architecture, Sathyabama Institute of Science and Technology,  
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*Sheetal Amraotkar, Associate Professor, Department of Architecture, Sathyabama Institute of Science  
and Technology, Chennai India, [sheetal.arch@sathyabama.ac.in](mailto:sheetal.arch@sathyabama.ac.in)*

**Abstract:**

The Transition spaces connect between the interior space and exterior environment, and act as intermediate or a third space. A well-designed transition space acts as microclimate modifier for the interior spaces. The study focuses on the role of transition spaces in creating comfortable thermal environment in classrooms of an educational Institute for a hot humid climate. The aim of the study is to investigate the impact of transition spaces on creating Indoor thermal comfort. The quantitative data was collected through field measurements for Air Temperature on typical summer Day. Further, field data was collected in different orientations and various Classrooms within an institutional campus. Adaptive thermal comfort metrics was used to compare the performance on the built geometry. The spatial distribution of adaptive thermal comfort was simulated using IESVE software. Further, proposed new scenarios in built geometry were developed by altering built parameters like aspect ratio and depth of the transition space. The Indoor thermal comfort performance of the proposed scenarios was compared with the existing condition to establish the relationship between built parameters and comfort conditions. Significant improvement in comfort level of indoor spaces was evident in the results which suggest that transition spaces optimize the indoor space comforts levels by reducing the Indoor temperature by 0.5oC to 2oC. The study proves that changes in aspect ratio and corridor width significantly impacts on the Indoor comfort. This study can further help designers for understanding that best efficient transitions space has positive impact for a healthy learning space.

**Keywords:** Adaptive Thermal comfort, Aspect Ratio, Corridor Depth, Orientation

2022 | OriginalPaper | Chapter

# Virtual Plan of the Domestic Enlistment Warming Framework to Reproduce Electromagnetic Boundaries

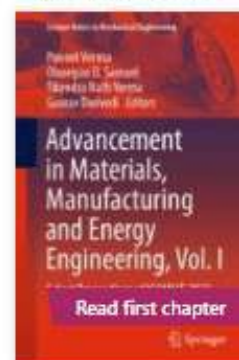
Authors : V. Geetha, M. Pushpavalli, P. Abirami, P. Sivagami, R. Harikrishnan

Published in: [Advancement in Materials, Manufacturing and Energy Engineering, Vol. I](#)

Publisher: Springer Singapore

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## Abstract

A 5 A (rms), 28 kHz domestic induction heating system was developed for the analysis of the distribution of the heat in the work piece. Finite element analysis of the IH system was carried out efficiently by EM simulation software for evaluating the magnetic parameters of the system which are key factors for temperature distribution. Ferromagnetic materials with various thicknesses are taken for study and performance of 1.5 mm thickness work piece suited for domestic heating application.

Literature ▾

Metadata ^

#### Title

Virtual Plan of the Domestic Enlistment Warming Framework to Reproduce Electromagnetic Boundaries

#### Authors

V. Geetha  
M. Pushpavalli  
P. Abirami  
P. Sivagami  
R. Harikrishnan

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#### Publisher

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Copyright Year: 2022

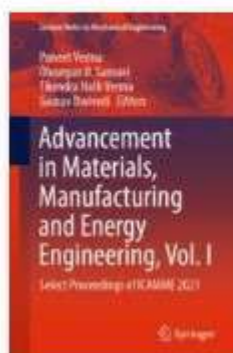
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[https://doi.org/10.1007/978-981-16-5371-1\\_50](https://doi.org/10.1007/978-981-16-5371-1_50)



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2022 | OriginalPaper | Chapter

### Virtual Plan of the Domestic Enlistment Warming Framework to Reproduce Electromagnetic Boundaries

A 5 A (rms), 28 kHz domestic induction heating system was developed for the analysis of the distribution of the heat in the work piece. Finite element analysis of the IH system was carried out efficiently by EM simulation software for evaluating ...

Authors: V. Geetha, M. Pushpavalli, R. Abirami, P. Sivagami, R. Harikrishnan

Published in: Advancement in Materials, Manufacturing and Energy Engineering, Vol. I (2022)



# Energy Efficient Routing Approach for IoT Assisted Smart Devices in WSN

Publisher: IEEE

Cite This

PDF

L. Sujihelen ; C. Senthilsingh ; A. Christy ; M.D.Anto Praveena ; M.S. Roobini ; Suja Cherukullapurath Mana [All Authors](#)

125

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Text Views



## Abstract

### Document Sections

#### I. Introduction

#### II. Proposed System

#### III Results and Discussion

#### IV Conclusion

## Abstract:

With the rapid growth of the technology, nowadays more IoT devices are enabled and more data is transferring from one device to another device. Due to huge data transmission from one node to another a traffic or collision may occur in IoT Assisted Smart devices in WSN. To avoid the issues an energy efficient routing protocol is used. In this regard, routing is a challenging task while transmitting the packets to some storage repositories. This paper presents the Energy Efficient Routing Approach (EERA) to identify the routing paths where less energy is consumed to enhances the network lifespan.

Published in: 2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT)

### Authors

Date of Conference: 20-22 January 2022

INSPEC Accession Number: 21707344

### Figures

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DOI: 10.1109/ICSSIT53264.2022.9716448

### References

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Publisher: IEEE

DVD ISBN:978-1-6654-0117-3

Conference Location: Tirunelveli, India

Print on Demand(PoD) ISBN:978-1-6654-0119-7

### Keywords

### Metrics

# Energy Efficient Routing Approach for IoT Assisted Smart Devices in WSN

Publisher: IEEE

Cite This



L. Sujihelen ; C. Senthil Singh ; A. Christy ; M.D.Anto Praveena ; M.S. Roobini ; Suja Cherukullapurath Mana [All Authors](#)

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| Abstract                   | <b>Abstract:</b><br>With the rapid growth of the technology, nowadays more IoT devices are enabled and more data is transferring from one device to another device. Due to huge data transmission from one node to another a traffic or collision may occur in IoT Assisted Smart devices in WSN. To avoid the issues an energy efficient routing protocol is used. In this regard, routing is a challenging task while transmitting the packets to some storage repositories. This paper presents the Energy Efficient Routing Approach (EERA) to identify the routing paths where less energy is consumed to enhances the network lifespan. |                                         |
| Document Sections          | <b>Published in:</b> 2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |
| I. Introduction            | Date of Conference: 20-22 January 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | INSPEC Accession Number: 21707344       |
| II. Proposed System        | Date Added to IEEE <i>Xplore</i> : 25 February 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | DOI: 10.1109/ICSSIT53264.2022.9716448   |
| III Results and Discussion | <b>▼ ISBN Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                         |
| IV Conclusion              | Electronic ISBN:978-1-6654-0118-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Publisher: IEEE                         |
| Authors                    | DVD ISBN:978-1-6654-0117-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Conference Location: Tirunelveli, India |
| Figures                    | Print on Demand(PoD) ISBN:978-1-6654-0119-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |
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# Efficient Framework for Hidden Camera Detection & Jamming using IoT

Publisher: IEEE

Cite This

PDF

A. Pravin ; T. Prem Jacob ; K. Mohana Prasad ; T. Judgi ; N. Srinivasan All Authors

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|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Abstract           | <b>Abstract:</b><br>Hidden Camera so called "Spy Camera" is frequently used to record something without prior knowledge. Usually, the hidden camera will not be visible for objects that are recorded. The use of hidden cameras in public spaces has rapidly increased, and correspondingly the hidden camera recordings may be shared over a network. This research study has proposed a IoT-based architecture for performing camera detection and jamming. The client recognizes the network, where the camera is recording/streaming and jams the camera linked to that network through IoT. The cameras connected to the entire network may be jammed here. An extension to this RFID is introduced to identify the hidden camera signals and forecast the presence of a camera in that location. |                                         |
| Document Sections  | <b>Published in:</b> 2022 6th International Conference on Trends in Electronics and Informatics (ICOEI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                         |
| I. Introduction    | Date of Conference: 28-30 April 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | INSPEC Accession Number: 21859733       |
| II. Related Works  | Date Added to IEEE Xplore: 24 May 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DOI: 10.1109/ICOEI53556.2022.9776943    |
| III. Proposed Work | ▼ ISBN Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Publisher: IEEE                         |
| IV. Results        | Electronic ISBN:978-1-6654-8328-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Conference Location: Tirunelveli, India |
| V. Conclusion      | Print on Demand(PoD) ISBN:978-1-6654-8329-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                         |
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# Distinguished DC-DC Converter for an Electric Vehicle

Publisher: IEEE

[Cite This](#)

[PDF](#)

Saravanan A ; L. Chitra ; S. Siva Chandran ; B. Sai Aravind ; J. Naveen Kumar ; S. Jayaprakash ; M. Siva Ramkumar [All Authors](#)

1

Paper

Citation

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#### V. OUTPUT WAVEFORMS

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### Citations

### Keywords

### Metrics

## Abstract:

Due to rising environmental challenges and complicated emission regulations, electric vehicles have been seen as an alternative to traditional transportation. Modern electric vehicles use electronic circuits powered by electrical energy (PECs). DC to DC converters and DC to AC inverters are both classed as PECs. DC to AC inverter: It delivers utility power while also driving electric motors; the DC to DC converter serves as a source of low voltage utility electricity. DC to DC converters are categorised according to application requirements. In order to charge a high-power electric load, an increase in output is needed. It is because of this that it uses the SEPIC converter. DC-DC converter designates the single-ended primary-inductor converter (SEPIC). The electrical potential may be any value, such as less than, equal to, or greater than the input voltage. Duty cycle of the control transistor governs the SEPIC output. In SEPIC, voltage conversion is accomplished by transferring energy between inductors and capacitors. SEPIC boost converter relates to buck-boost converter modification. Both are comparable. The SEPIC converter has a few benefits. They are non-inverted input- same polarity of input and output voltage, between output and input, energy is linked using a series capacitor- to a short circuit output, producing greater responsiveness, genuine shutdown is possible- output goes to 0V if switch is off. This converter is simple to control while operating in CCM mode. Because both switches use the same gating pulse, the duty cycle may be adjusted to obtain a broad range of output voltage. In terms of number of components, diode and switch voltage stress, and voltage gain, recent non-coupled inductor converters are compared to the proposed converter. With regard to output voltage, the suggested converter produces a lower proportion of voltage stress on switches. When compared to existing converters, the suggested converter produces a high voltage gain with fewer...

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Published in: 2022 6th International Conference on Computing Methodologies and Communication (ICCMC)

Date of Conference: 29-31 March 2022

INSPEC Accession Number: 21688076

Date Added to IEEE Xplore: 13 April 2022

DOI: 10.1109/ICCMC53470.2022.9753880

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DVD ISBN:978-1-6654-1027-4

Print on Demand(PoD) ISBN:978-1-6654-1029-8

Publisher: IEEE

Conference Location: Erode, India



# Digitization of Data from Invoice using OCR

Publisher: IEEE

Cite This

PDF

Venkata Naga Sai Rakesh Kamisetty ; Bodapati Sohan Chidvilas ; S. Revathy ; P. Jeyanthi ; V. Maria Anu ; L. Mary Gladence [All Authors](#)

3

Paper

Citations

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## Abstract

### Document Sections

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#### II. LITERATURE SURVEY

#### III. BACKGROUND STUDY

#### IV. PROPOSED WORK

#### V. METHODOLOGY

Show Full Outline ▼

### Authors

### Figures

### References

### Citations

### Keywords

### Metrics

## Abstract:

Optical Character Recognition (OCR) is a predominant aspect to transmute scanned images and other visuals into text. Computer vision technology is extrapolated onto the system to enhance the text inside the digitized image. This preliminary provisional setup holds the invoice's information and converts it into JSON and CSV configurations. This model can be helpful in divination based on knowledge engineering and qualitative analysis in the nearing future. The existing system contains data extraction and nothing more. In a paramount manner, image pre-processing techniques like black and white, inverted, noise removal, grayscale, thick font, and canny are applied to escalate the quality of the picture. With the enhanced image, more OpenCV procedures are carried through. In the very next step, three different OCRs are used: Keras OCR, Easy OCR, and Tesseract OCR, out of which Tesseract OCR gives the precise result. After the initial steps, the undesirable symbols (< /t, /n) are cleared to get the escalated text as an output. Eventually, a unique work that is highly accurate in giving JSON and CSV formats is developed. Impact statement— In our protrude, a front-end android app is developed which takes input from the user and stores the output onto the database. The JSON and CSV files can be viewed through an app by the end.

Published in: 2022 6th International Conference on Computing Methodologies and Communication (ICCMC)

Date of Conference: 29-31 March 2022

Date Added to IEEE Xplore: 13 April 2022

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INSPEC Accession Number: 21701996

DOI: 10.1109/ICCMC53470.2022.9754117

Publisher: IEEE

Conference Location: Erode, India

# Diagnosis of Skin Malignancy using Deep Learning Approaches

Publisher: IEEE

Cite This

PDF

J Bethanney Janney ; N.R. Krishnamoorthy ; Sindu Divakaran ; T. Sudhakar ; S. Krishnakumar ; V Akshya. [All Authors](#)

62

Full

Text Views



## Abstract

### Document Sections

I. Introduction

II. Related Works

III. Materials and Methods

IV. Results and Discussion

V. Conclusion

Authors

Figures

References

Keywords

Metrics

## Abstract:

With the innovation of current healthcare systems, the medical profession is evolving and treatment procedures are now being developed. The most prevalent human malignancy that affects the human population all over the world is skin cancer. High levels of absorption to the sun's damaging rays are the source for this cancer. For accurate steps to improve the situation, early diagnosis of this cancer may be beneficial. Skin cancer detection has the ability to decrease mortality and morbidity. Artificial intelligence may be capable of classifying skin cancer with ability levels equivalent to those of dermatologists. This paper presents skin cancer identification by images that are processed by deep learning algorithms that require minimal human intervention. The system is trained given past image records stored in the device, allowing treatment to proceed earlier. In evaluating the efficiency of proposed procedures, well-known quantitative metrics such as precision, sensitivity and accuracy are used. Comparative analysis is performed to assess the effectiveness of the two approaches proposed.

**Published in:** 2021 International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA)

**Date of Conference:** 08-09 October 2021

**INSPEC Accession Number:** 21498196

**Date Added to IEEE Xplore:** 18 January 2022

**DOI:** 10.1109/ICAECA52838.2021.9675722

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**Print on Demand(PoD) ISBN:** 978-1-6654-2830-9

**Conference Location:** Coimbatore, India



International Conference on Emerging Technologies in Computer Engineering

↳ ICETCE 2022: Emerging Technologies in Computer Engineering: Cognitive Computing and Intelligent IoT

# Detection of Network Intrusion Using Machine Learning Technique

[L. K. Joshila Grace](#) ✉, [P. Asha](#), [Mercy Paul Selvan](#), [L. Sujihelen](#) & [A. Christy](#)

Conference paper | [First Online: 26 May 2022](#)

**394** Accesses

Part of the [Communications in Computer and Information Science](#) book series (CCIS, volume 1591)

## Abstract

The aim is to estimate a Windows device's risk of being corrupted by different malware families based on the machine's various properties. By merging movement and studies of threats obtained by Microsoft's endpoint security solution, Windows Defender, the simple data containing these properties and system infections was created. A Machine Identifier uniquely identifies each row throughout this dataset, which relates to a machine. The similarity measure has Detections, which means that Malware was found on the computer. You should estimate the value for Detections of each system in test.csv using the details and labels in train.csv. Using the Malware data collection, this analysis tests the output of the new proposed classifier algorithm. That proposed updated version of the Random forest classifiers provides improved outcomes in case of intrusion detection and false incidence, according to the empirical findings of our research.

## Keywords

Access

▼ Chap

- D
- CH
- Ins
- Re
- Ov
- Ex
- Ta

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Joshila Grace, L.K., Asha, P., Selvan, M.P., Sujihelen, L., Christy, A. (2022). Detection of Network Intrusion Using Machine Learning Technique. In: Balas, V.E., Sinha, G.R., Agarwal, B., Sharma, T.K., Dadheech, P., Mahrishi, M. (eds) Emerging Technologies in Computer Engineering: Cognitive Computing and Intelligent IoT. ICETCE 2022. Communications in Computer and Information Science, vol 1591. Springer, Cham. [https://doi.org/10.1007/978-3-031-07012-9\\_32](https://doi.org/10.1007/978-3-031-07012-9_32)

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DOI

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Published

26 May 2022

Publisher Name

Springer, Cham

Print ISBN

978-3-031-07011-2

Online ISBN

978-3-031-07012-9

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# Detection of Arrhythmia and Congestive Heart Failure Through Classification of ECG Signals Using Deep Learning Neural Network

Publisher: IEEE

Cite This

PDF

S Krishnakumar ; M Yasodha ; J Veronica Priyadharshini ; J Bethanney Janney ; Sindu Divakaran ; V Lumen Christy [All Authors](#)

1  
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Citation

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| Abstract                    |
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| I. Introduction             |
| II. Materials and Methods   |
| III. Results and Discussion |
| IV. Conclusion              |
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| Figures                     |
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| Citations                   |
| Keywords                    |
| Metrics                     |

**Abstract:**  
Globally, cardiovascular illnesses are the major cause of death. By detecting the electrical activity of the heart as it contracts, electrocardiogram (ECG) data can be used to detect heart abnormalities. Due to individual variability and inherent noise, accurate detection of cardiovascular illnesses is acknowledged to be a difficult task even for human professionals. The current standard of care, visual ECG examination, may lead to individual interpretation and inter-observer predispositions. To overcome the limitations of visual and physical ECG readings, computer-aided diagnosis methods that automatically diagnose ECG have been developed. This study includes modified deep learning neural networks to classify ECG signals into three categories: arrhythmia, congestive heart failure, and normal sinus rhythm. The neural networks used in this work are AlexNet and GoogLeNet. The ECG signals are collected from online sources and are then converted into a scalogram. The scalogram images are divided into train and validation datasets in the ratio of 8:2. The training dataset is then trained using both neural networks. The accuracy of the prediction done by the two architectures are calculated using the confusion matrix. Between the two, GoogLeNet outweighed AlexNet with an accuracy of 96.88%. According to the findings, the GoogLeNet architecture is an effective way for detecting arrhythmias and congestive heart failure.

**Published in:** 2021 International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA)  
**Date of Conference:** 08-09 October 2021  
**INSPEC Accession Number:** 21498190  
**Date Added to IEEE Xplore:** 18 January 2022  
**DOI:** 10.1109/ICAECA52838.2021.9675703  
**Publisher:** IEEE  
**▼ ISBN Information:**

# Design of IoT Based VPN Gateway for Home Network

Publisher: IEEE

Cite This

PDF

Jeberson Retna Raj; Senduru Srinivasulu [All Authors](#)

1

Paper  
Citation

177

Full  
Text Views



## Abstract

### Document Sections

I. Introduction

II. Literature survey

III. PROPOSED IoT based VPN

IV. Experimental Results

V. CONCLUSION

Authors

Figures

References

Citations

Keywords

Metrics

## Abstract:

With the rapid development of technology, individuals can keep with their handy devices like notebooks, tablet computers, and smart cell phones for doing their personal and professional works regardless of the place and location. In addition, they have the potential to connect people to many services on the market to gain access. Security is one of the issues with the user accessing the data through the connected network. In essence, the public network is more vulnerable and the information transferred to systems is not properly encrypted. Furthermore, the network is accessible to anyone those who have the understanding of the computer network. The intruders may use the public network to plough the freedom users from surfing internet by blocking with their websites or advertisements. A Virtual Private Network (VPN) is a network that uses their encryption mechanism to link two different networks together using public telecommunications and to providing services through World Wide Web. In this paper, a prototype model is designed for VPN gateway connection using Raspberry Pi which in turn to connect the house network with the ISP network. Through this a VPN network services like security and scalability is guaranteed to the home systems using the proposed prototype.

Published in: 2022 International Conference on Electronics and Renewable Systems (ICEARS)

Date of Conference: 16-18 March 2022

INSPEC Accession Number: 21688466

Date Added to IEEE Xplore: 13 April 2022

DOI: 10.1109/ICEARS53579.2022.9751838

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Print on Demand(PoD) ISBN:978-1-6654-8426-8

Publisher: IEEE

Conference Location: Tuticorin, India





**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

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**Title:**

**DESIGN FOR THE OTHER 94% QUALITY OF LIFE A RIGHT OR A LEGACY**

**Authors & affiliations with email id:**

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krishnapriyaparthasarathy98@gmail.com*

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**Abstract:**

Across all sections of the people, there is an urge to “live better”. Living better is not just a word of hope and ignition amongst the major classification of the people’s population yet a tangential dilemma of whether it is a right or a legacy to live for it to happen. This paper explores the possibilities of architecture in addressing the global problems concerning the quality of living for the major population who are not amongst the rags and riches. Architects sensitively aligned towards humanity and social causes, work with a hope and conviction that the process of spatial-problem solving and design can earnestly bring and induce changes in the living of the people. Yet architects themselves aren’t the one in the game, it necessarily involves the sensitive stakeholders, NGOs, government sectors and many other accountable people in position that hold the ground in taking such projects that can address the multitude aspects of living. (Economic, educational, social, health, psychological, etc.)

Since the essential details are lost in the initiation of the project it is necessary to strategize the roles and responsibilities. A Framework is designed in achieving a holistically approached project at community level after having analysed many current empowering case studies. It discusses on DECIPHERING THE PROJECT BRIEF, STRUCTURING THE PROGRAM, DESIGN, CONSTRUCTION and OCCUPANCY ANALYSIS. The Case-study analysis module decodes 7 thrust holding community participatory projects through the lens of architects, stakeholder, collaborators, end user’s role organizes the flow of work through site context, conceptualization of design, design development, on-site work process, and post occupancy analysis. This paper implies that a project can be more than just the structures of sand and cement. It can become a tool to address, question, analyse and solve the multitude aspects of living which determines the quality of the same.

**Key Words:** Dignity in Architecture, Space Making, Participatory approach, Multi-Dimensional Analysis, Incremental Design.

## About this paper



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### Cite this paper

Sivasangari, A., Deepa, D., Vignesh, R., Mana, S.C., Samhitha, B.K. (2022). Design and Development of Enhanced Secured Video Communication System for Medical Video Sensor Network. In: Singh, P.K., Kolekar, M.H., Tanwar, S., Wierzchoń, S.T., Bhatnagar, R.K. (eds) Emerging Technologies for Computing, Communication and Smart Cities. Lecture Notes in Electrical Engineering, vol 875. Springer, Singapore. [https://doi.org/10.1007/978-981-19-0284-0\\_7](https://doi.org/10.1007/978-981-19-0284-0_7)

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DOI

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Published

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## Human Disease Prognosis and Diagnosis Using Machine Learning

Sunil Kumar, Harish Kumar, Rashi Agarwal, V. K. Pathak

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## Incorporating Financial News Sentiments and MLP-Regressor with Feed-Forward for Stock Market Prediction

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## Framework for Context-Based Intelligent Search Engine for Structured and Unstructured Data

Ritendra R. Sawale, Lokesh Nagar, Vaibhav K. Khataavkar

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## Design and Development of Enhanced Secured Video Communication System for Medical Video Sensor Network

A. Sivasangari, D. Deepa, R. Vignesh, Suja C. Mana, B. Keerthi Samhitha

Pages 81-93

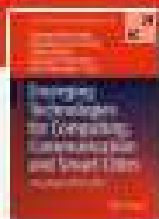
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## Detecting Twitter Hate Speech Using Sentiment Analysis

Arpita Tripathy, Anshika Goyal, Urvashi Tyagi, Poonam Tanwar

Pages 95-105

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# Design and Development of Enhanced Secured Video Communication System for Medical Video Sensor Network

[A. Sivasangari](#), [D. Deepa](#), [R. Vignesh](#), [Suja C. Mana](#) & [B. Keerthi Samhitha](#)

Conference paper | [First Online: 20 April 2022](#)

256 Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 875)

## Abstract

Privacy and security of healthcare data are becoming important issue in healthcare field. The main issue to be considered during data transmission is the security of the data that can be transmitted through wireless medium to the remote server. The attacker can perform different types of security attacks on medical information due to broadcast nature of wireless communication. Thus, an effective security mechanism to safeguard the data against data alteration and deletion is the need of the hour. This sort of data tamper would result in wrong diagnosis by the physician, which is a life-threatening issue. WMSNs (Wireless Medical Video Sensor Networks) have the ability to store, process, and collect heterogeneous devices for multimedia data. Requirements such as high bandwidth, low packet loss ratio, and minimal delay have also been increased. To meet the security requirement, a secure key exchange method in WMSN is proposed in this paper. The main issue to be considered during data transmission is the security of the data, which can be transmitted through wireless medium to the cloud server. The attacker can perform different types of security attacks on medical information due to broadcast nature of wireless communication. Additionally, the collected multimedia data is stored in the cloud. Thus, an effective security mechanism to safeguard the data against data alteration and deletion is the need of the hour. In order to provide the security in three levels of data transmission in WMSN, the secure key exchange in WMSN (SK-WMSN) model is proposed in the present work. Also, we analyzed other proportional assessment issues in WMSN, for instance, incorporation and security issues. Finally, we inspected and masterminded the current off-the-rack contraptions, models, and testbeds executed for WMSNs.

## Keywords

# Deep Learning applications to detect pneumonia on chest X-ray: A systematic study

Publisher: IEEE [Cite This](#) [PDF](#)

Neenu Sebastian ; B. Ankayarkanni [All Authors](#)

1

Paper

Citation

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|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Abstract                   | <b>Abstract:</b><br>Pneumonia is serious infection that affects the air sacs in our lungs of our body. Air sacs plays a vital role in the procedure of our breathing process. When the lungs are infected by bacterial or viral infection these air sacs will get filled with pus or fluid. As a result, this infection causes fever, cough and leads to a serious medical condition called pneumonia. The severity of this infection can range from mild to severe. It goes to a life-threatening situation in case of infants, young children and old aged people. The doctors use chest X-rays for the confirmation infection. Analyzing the chest x-rays for the detection of pneumonia infection by the doctors visually by naked eyes is time consuming process. Computer aided diagnosis helps the doctors for the faster and accurate detection of Pneumonia infection on chest X-rays. Computer aided diagnosis uses the CNN models for the confirmation of pneumonia which have achieved better performance than humanbeings |                                                       |
| Document Sections          | <b>Published in:</b> 2022 <a href="#">International Conference on Advanced Computing Technologies and Applications (ICACTA)</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| I. Introduction            | Date of Conference: 04-05 March 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | INSPEC Accession Number: 21688773                     |
| II. Dataextraction         | Date Added to IEEE <i>Xplore</i> : 15 April 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DOI: <a href="#">10.1109/ICACTA54488.2022.9753025</a> |
| III. Deep Learning Methods | <b>▼ ISBN Information:</b><br>Electronic ISBN:978-1-6654-9515-8<br>Print on Demand(PoD) ISBN:978-1-6654-9516-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Publisher: IEEE                                       |
| IV. Datasets               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Conference Location: Coimbatore, India                |
| V. Results                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
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| Keywords                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |

# Crop Recommendation and Yield Production using SVM Algorithm

Publisher: IEEE

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[PDF](#)

M. Sai Teja ; T. Sai Preetham ; L. Sujihelen ; Christy ; S. Jancy ; Mercy Paul Selvan [All Authors](#)

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## Abstract

### Document Sections

1. INTRODUCTION
2. LITERATURE SURVEY
3. PROPOSED APPROACH
4. Results and Discussion
5. CONCLUSION

### Authors

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### References

### Citations

### Keywords

### Metrics

## Abstract:

Different soil parameters affect agriculture growth, namely Nitrogen, Phosphorous, Potassium, Crop Rotation, Soil Moisture, pH, surface temperature, and weather factors such as temperature, rainfall, etc. With the help of technology, farm yields will improve due to increased crop productivity. Smart Agriculture is provided by the proposed work via the monitoring of the agricultural field. As a result, it can greatly increase farmers' output. This research work present a website to employ Machine Learning [ML] algorithms combined with historical weather information to determine the most profitable crop under the current weather conditions. Using weather parameters, soil parameters and historic yields, this system can also predict crop yields. The proposed work aims at creating a system that integrates data from multiple sources, data analytics, and forecast analysis that can enhance crop yield productivity and make farmers more profitable in the long run.

Published in: 2022 6th International Conference on Intelligent Computing and Control Systems (ICICCS)

Date of Conference: 25-27 May 2022

INSPEC Accession Number: 22481518

Date Added to IEEE Xplore: 08 June 2022

DOI: 10.1109/ICICCS53718.2022.9788274

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DVD ISBN:978-1-8654-1034-2

Print on Demand(PoD) ISBN:978-1-8654-1036-6

Publisher: IEEE

Conference Location: Madurai, India

## ▼ ISSN Information:

Electronic ISSN: 2768-5330

Print on Demand(PoD) ISSN: 2768-5322

## 1. INTRODUCTION



# Contention Based Forwarding Message in Vanet After an Emergency Event

Publisher: IEEE

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PDF

E. Brumancia ; R.M. Gomathi ; D.Ayyappa Naidu ; D. Srikanth All Authors

1

Paper

Citation

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|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Abstract                                | <b>Abstract:</b><br>Diverse thriving applications in Vehicular Ad hoc Networks (VANETs) are based on offer. Engineering a pass on tradition that satisfies VANET applications' necessities is fundamental. In this paper, we propose a strong and mind boggling multi-weave pass on arranging custom for VANETs. The proposed tradition gives the strict consistent quality in various flood hour gridlock conditions. This tradition other than performs low overhead by systems for decreasing rebroadcast abundance in a high-thickness build condition. We furthermore propose a redesigned multipoint hand-off (MPR) decision watch that thinks about vehicles' movability and after that utilization it for exchange center point decision. We show the execution examination of the proposed custom by age with ns-2 in different conditions, and give the preoccupation results appearing of the proposed tradition isolated and other VANET present designs. |                                         |
| Document Sections                       | <b>Published in:</b> 2019 3rd International Conference on Trends in Electronics and Informatics (ICOEI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |
| I. Introduction                         | Date of Conference: 23-25 April 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | INSPEC Accession Number: 19875655       |
| II. Section Details                     | Date Added to IEEE Xplore: 11 October 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DOI: 10.1109/ICOEI.2019.8862742         |
| III. Related Work                       | ▼ ISBN Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Publisher: IEEE                         |
| IV. Contention Based Forwarding Message | Electronic ISBN:978-1-5386-9439-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Conference Location: Tirunelveli, India |
| V. Implementation                       | DVD ISBN:978-1-5386-9438-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |
| Show Full Outline ▼                     | Print on Demand(PoD) ISBN:978-1-5386-9440-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |
| Authors                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |
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| Citations                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |
| Keywords                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |

# Consumer Friendly Energy Meter for Home Application

Publisher: IEEE

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[PDF](#)

S Radhika ; A. Chandrasekar ; S. Jothi ; Vijayakumar K [All Authors](#)

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## Abstract

### Document Sections

I. Introduction

II. Block Diagram

III. Simulations and Results

IV. Hardware Implementation

V. Conclusions

[Authors](#)

[Figures](#)

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[Keywords](#)

[Metrics](#)

## Abstract:

The power demand is increasing at an exponential rate every day, but the conventional method for power generation, transmission and distribution does not meet the requirement. One avenue to solve this crisis is to reduce and manage the energy usage in the house hold. Thus more emphasis has to be given for accurate and economic method for power measurement at home. This works fills the gap between consumers and energy usage by proposing a smart energy meter for automation of power consumption on an hourly basis. In the proposed method, the entire house hold is classified low, medium and high loads and a preset value of energy and cost associated with them is set. Sensors at each load conditions enable efficient data collection. The proposed energy meter enables circuit cutoff facility through relays when the consumed energy crosses the preset values. Additionally buzzer and SMS facility is also provided for alerting the user if the power consumption exceeds the preset value. Simulations and hardware results proved that the proposed smart energy meter has more reliability, flexibility and improved performance over conventional ones. In addition our proposed system can help the consumers to know their daily usage so that they can take necessary steps to meet their energy usage and the electricity bill.

**Published in:** 2022 [International Conference on Advances in Computing, Communication and Applied Informatics \(ACCAI\)](#)

**Date of Conference:** 28-29 January 2022

**INSPEC Accession Number:** 21689106

**Date Added to IEEE Xplore:** 15 April 2022

**DOI:** [10.1109/ACCAI53970.2022.9752487](#)

## ▼ ISBN Information:

Electronic ISBN:978-1-6654-9529-5

Print on Demand(PoD) ISBN:978-1-6654-9530-1

**Publisher:** IEEE

**Conference Location:** Chennai, India

# Computer Vision-Based Early Fire Detection Using Machine Learning

Publisher: IEEE

Cite This

PDF

K. Sravan Kumar ; K. Balaram Varma ; L. Sujihelen ; S. Jancy ; R. Aishwarya ; R. Yogitha All Authors

|          |            |
|----------|------------|
| 1        | 115        |
| Paper    | Full       |
| Citation | Text Views |



## Abstract

### Document Sections

#### I. Introduction

#### II. Related Work

#### III. Proposed System

#### IV. Results and Discussion

#### » Conclusion

#### Authors

#### Figures

#### References

#### Citations

#### Keywords

#### Metrics

## Abstract:

Thousands of hectares of land are destroyed every year by fire. There is more carbon monoxide generated by these fires than from all the traffic. The early detection of possible danger areas and early detection of fires can greatly reduce response times and firefighting costs as well as the possibility of damage. By using image processing technology, a fire could be detected early and people would be alerted. The sensor method detects fires through smoke, but it has limited applications, and is only suitable for certain areas. In this proposed work, limitations will be reduced and the technology will be optimized. In this proposed system, a Haar Cascade classifier is used for fire detection. Pycharm IDE is used for implementing this work. The system uses the webcam as a source of input for capturing the video feed from the surrounding environment. Detection of the fire will be exact and accurate without any delay with the proposed work.

Published in: 2022 International Conference on Communication, Computing and Internet of Things (IC3IoT)

Date of Conference: 10-11 March 2022

INSPEC Accession Number: 21728592

Date Added to IEEE Xplore: 12 May 2022

DOI: 10.1109/IC3IoT53935.2022.9767886

### ▼ ISBN Information:

Electronic ISBN:978-1-6654-7995-0

Print on Demand(PoD) ISBN:978-1-6654-7996-7

Publisher: IEEE

Conference Location: Chennai, India



# Completion of Chemical Reaction in Remote Locations Using Data Analytics Built on Internet of Things Platform

Publisher: IEEE

[Cite This](#)

[PDF](#)

A. Christy ; M. D. Anto Praveena ; S. Vaithyasubramanian ; M.S. Roobini [All Authors](#)

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## Abstract

### Document Sections

I. Introduction

II. Related Work

III. Elements of IOT

IV. Architecture

V. Process Description

[Show Full Outline](#)

[Authors](#)

[Figures](#)

[References](#)

[Keywords](#)

[Metrics](#)

## Abstract:

In today's world Chemical industries and biochemical plants deal with hazardous chemical reactions. The progression of the reaction / completion of the reaction are done by observation of different parameters as well as aliquoting different samples for analysis. This normal procedure is tedious, time consuming and cumbersome. A novel method has been developed to accurately estimate the end point of chemical reaction in remote locations using Internet of Things (IoT) platform. The procedure involves monitoring different parameters like changes in pressure, volume and analyzing the data to find accurately the end point of locations using IOT and Machine learning techniques. A simple reaction involving oxidation of oxalic acid with incremental addition of potassium permanganate in nitric acid medium was carried out in lab scale under vacuum and the drop in vacuum was observed with time and volume. The end point of the reaction was accurately estimated by observing the pressure values using a pressure sensor and passing it to the cloud through the Wi-Fi module. Data is analyzed using machine learning techniques and once the curve flattens means the end point is reached. The data sends an alert to the IoT device that the reaction is completed as well as the circuit is automatically stopped in further functioning.

Published in: 2021 *Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC)*

Date of Conference: 11-13 November 2021

INSPEC Accession Number: 21527335

Date Added to IEEE Xplore: 20 December 2021

DOI: 10.1109/I-SMAC52330.2021.9840994

### ▼ ISBN Information:

Electronic ISBN: 978-1-8654-2642-8

DVD ISBN: 978-1-8654-2641-1

Print on Demand(PoD) ISBN: 978-1-8654-2643-5

Publisher: IEEE

Conference Location: Palladam, India

### ▼ ISSN Information:

Electronic ISSN: 2768-0673

Print on Demand(PoD) ISSN: 2768-0665



# Closed Loop Investigation on Non- Isolated Transformerless Converter for Photovoltaic Applications

Publisher: IEEE

Cite This

PDF

M. Kavitha ; W.Abitha Memala ; C. Bhuavneswari ; M. Pushpavalli All Authors

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| Abstract                                                | <b>Abstract:</b><br>The renewable energy sources plays a major role in electric vehicle and village electrification. This paper introduces a Non-Isolated Two Phase Interleaved boost converter (NI-TPIBC) with Voltage Multiplier Cell (VMC) which acts as an intermediate and promising candidate that connects PV source to the DC load or DC bus. Since PV is intermittent in nature and produces low voltage, the proposed converter is designed to achieve high voltage gain with moderate duty cycle. In this paper, the closed loop investigation of the NI-TPIBC is done to clarify its dynamic presentation. Under varying loads and sources, the controllers PID and Fuzzy Logic are used to test the NI-TPIBC. The transient response of the NI-TPIBC is analysed. The proposed converter has the ability to deliver constant power during the input voltage variation and deliver increased/decreased power during decreased/increased load variation condition. The simulation through Matlab/Simulink shows that the output voltage is well tracked by using the controller under external disturbances. |                                         |
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| V. Load Variation                                       | DVD ISBN:978-1-6654-0117-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                         |
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## About this paper



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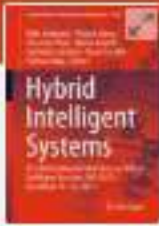


Chapter and Conference Paper

## Blockchain: A Compendium on Contemporary Privacy Preservation Approaches and Its Manifestation in Varied Realms

Blockchain is a distributed ledger based technology that was incipient as an elementary base of primary decentralized crypto currency namely, Bitcoin. It piles and maintains records without any centralized aut...

Leda Kamal, R. Jeberson Retna Raj in *Hybrid Intelligent Systems* (2022)



International Conference on Hybrid Intelligent Systems

↳ HIS 2021: **Hybrid Intelligent Systems** pp 517–529 | [Cite as](#)

# Blockchain: A Compendium on Contemporary Privacy Preservation Approaches and Its Manifestation in Varied Realms

[Leda Kamal](#) & [R. Jeberson Retna Raj](#)

Conference paper | [First Online: 04 March 2022](#)

**362** Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 420)

## Abstract

Blockchain is a distributed ledger based technology that was incipient as an elementary base of primary decentralized crypto currency namely, Bitcoin. It piles and maintains records without any centralized authority or trusted third party. The decentralized, immutable, transparent characteristics of this breakthrough innovation gained wide acceptance rapidly, since its inception in 2009 and are now applied in a variety of use cases. But still, blockchain faces issues with respect to privacy, security, and scalability that hinder its practical applications. This paper reviews the challenges, privacy threats and forefront privacy-preserving mechanisms in blockchain based systems and also makes a study of various privacy-preserving mechanisms as applied to various realms of blockchain namely IoT, VANET, smart agriculture, etc.

## Keywords

Blockchain

Challenge

Privacy threat

Privacy preservation



# Bioinspired Nanomaterials for Energy and Environmental Applications



*Edited by*  
Alagarsamy Pandikumar  
Perumal Rameshkumar

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**Edited By**  
**SARFRAJ AHMED**  
**VINAYAK S. DAKRE**

 **Scrivener  
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# Behavioural Analysis For Prospects In Crowd Emotion Sensing: A Survey

Publisher: IEEE

[Cite This](#)[PDF](#)Manojkumar, K; L. Sujihelen [All Authors](#)

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Paper  
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124

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## Abstract

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- I. Introduction
- II. Background Work
- III. Stages in Crowd Behaviour Analysis
- IV. Models of Deep Learning in Anomaly Detection
- » Conclusion

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### Keywords

### Metrics

## Abstract:

Crowd behavioural analysis is an interesting and emerging domain in research, with incomplete set of activities, tasks and lack of intermediate sub-processes which are mandated for productive analysis. Since the domain is untapped to a major extent, the research carried out in the domain needs proper stages of operations. A proper taxonomy will direct the futuristic domains in the right track of processes and organization of intermediate tasks. This review paper intends to document the list of stages and processes, data collection, pipelining the sub-tasks, pre-emptive identification of supposed problems during the later stages in detection of crowd emotions and behavioural analysis. Deep learning techniques have been widely deployed to investigate the models of crowd analysis, anomaly detection, and look for meaningful insights and patterns from datasets. The Different models are investigated thoroughly for their respective understanding about the emotional aspects considered in the studies. Emotional characteristics when powered with crowd behavioural analysis and real world entities will deliver a promising solution for crime detections, anomaly detection and ensure a safer environment for nations. Video surveillance tools, datasets from crime datasets and various other factors contributed to the previous research works, models are now being designed to incorporate the best features of these models into one and thus achieve one fruitful model for continuous video analytics.

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Conference Location: Coimbatore, India



# Automatic Melanoma Diagnosis and Classification on Dermoscopic Images

[Bethannee Janney, J. S. Emalda Roslin & J. Premkumar](#)

Chapter | [First Online: 12 May 2021](#)

**374** Accesses

Part of the [Health Information Science](#) book series (HIS)

## Abstract

Automatic identification of skin carcinoma is significant. The dangerous types of cancer found in humans are skin cancer. Melanoma is the deadliest type of skin cancer. Healing can be beneficial on early diagnosis of melanoma. This paper aims to propose a skin cancer diagnosis algorithm that can automatically classify lesions as malignant or benign. Segmentation is done in the initial phase after choosing the finest image development methods accomplished by applying and comparing various noise removal filters on images. A perfect optimized segmentation methodology relies on thresholding, watershed algorithms are implemented on dermoscopy images, and the differentiated object is derived for GLCM attributes and qualitative techniques. To identify malignant or benign samples, the attributes are therefore supplied in to the support vector machine as a source. As perceived by experimental findings, SVM classification system with watershed segmentation has the potential to distinguish benign and malignant melanoma with a higher overall categorization efficiency.

## Keywords

Dermoscopic skin lesions

Image enhancement

Watershed segmentation

## About this chapter



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### Cite this chapter

Bethanne Janney, J, Emalda Roslin, S, Premkumar, J. (2021). Automatic Melanoma Diagnosis and Classification on Dermoscopic Images. In: Manocha, A.K., Jain, S., Singh, M., Paul, S. (eds) Computational Intelligence in Healthcare. Health Information Science. Springer, Cham. [https://doi.org/10.1007/978-3-030-68723-6\\_14](https://doi.org/10.1007/978-3-030-68723-6_14)

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[Computer Science \(R0\)](#)





**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

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**Title:**

**ASSESSING USER SATISFACTION OF URBAN PARKS FOR SUSTAINABLE  
CITIES: A PILOT STUDY OF TWO URBAN PARKS IN CHENNAI,INDIA**

**Authors & affiliations with email id:**

*Sheetal Amraotkar, Ph.D. Research Scholar, Sathyabama Institute of Science and Technology,  
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*Dr.Devyani Gangopadhyay, Dean, School of Building and Environment, Sathyabama Institute of  
Science and Technology, devyanigangopadhyay@gmail.com*

**Abstract:**

Urban parks are significant potential spaces in the urban environment that provide multiple social-ecological benefits when appropriately planned, designed and managed. Parks present a vital opportunity to enhance sustainability in cities, as well as improve the local quality of life, access to recreation, and public health. To create more sustainable and liveable cities, it is essential to assess the performance of urban parks from the user's perspective and through the understanding of their preferences. This paper aims to identify critical parameters, their significance and assessment methods in achieving user satisfaction in an urban park. Critical analysis of literature reviews forms the substratum of the identified parameters. These identified parameters are used in evaluating two urban parks in Chennai, India through documentation and questionnaire survey. A user satisfaction survey based on identified parameters, as well as a user preference survey, are included in the questionnaire. A grading method is developed based on the hierarchy of the user satisfaction. The relationship between park attributes and people's satisfaction in urban parks is investigated to ameliorate the parks' overall performance. The study can be used in other cities to aid design professionals, urban decision-makers, landscape architects, and other stakeholders in evaluating the performance of existing urban parks and assisting in the design and setting of urban parks from the users' perspective, to enhance more liveable communities.

**Keywords:** Urban Parks; Park attributes; User Satisfaction; User preferences; Sustainable cities



**1st International Conference on  
Design Innovation and Management for Sustainable Environment  
ICDIMSE  
15th -16th March 2022**

---

**Title:**

**ASSESSING THE THERMAL PERFORMANCE OF UPCYCLED SHIPPING  
CONTAINER AS A SUSTAINABLE BUILDING MATERIAL IN A WARM HUMID  
CLIMATE**

**Authors & affiliations with email id:**

*Oviya K, Student, Sathyabama Institute of Science and Technology,  
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Technology, sheetal.academics@gmail.com*

*Ar. Shobana, Associate Professor, Sathyabama Institute of Science and Technology,  
shobana.arch@sathyabama.ac.in*

**Abstract:**

Current trends in the construction sector are responsible for the majority of CO<sub>2</sub> emissions in India. Sustainable methods to reduce CO<sub>2</sub> emissions should include not just recycling but upcycling materials, for instance – shipping containers. Despite the industry's best efforts to minimize waste, millions of shipping containers end up in scrap every year. This can be effectively reduced by reusing them as alternate building materials. The trend of reusing shipping containers as building materials is at its peak in Western countries, while it's still an emerging notion in India. This paper aims to evaluate and assess the thermal performance of upcycled shipping containers as a building material in a warm humid climate. This research includes a literature review on strength and weakness of shipping containers as building material; comparing and evaluating the thermal performance of uninsulated container building with base case conventional building and insulated container building through Opaque simulation. The results were obtained by comparing and assessing the thermal performance and cost of various insulating materials for a container building. This study is aimed at helping architects reuse shipping containers as a sustainable alternative building material in warm humid regions.



# Artificial Neural Network based Automatic Prediction Unit for COVID 19 in Asymptomatic Patient

Publisher: IEEE

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PDF

M.L. Bharathi ; J. Aravindan ; Kanagaraj Venusamy ; Rani Fathima Kamal Basha All Authors

129  
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## Abstract

### Document Sections

I. Introduction

II. Artificial Neural Network for Covid Prediction

III. Method

IV. ANN Network Architecture of Covid Prediction Unit

V. Training of Covid 19 Prediction ANN Network

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Authors

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Keywords

Metrics

## Abstract:

In this pandemic situation of COVID 19 virus attack in human race for the last few months the disease occurrence prediction and patient's condition monitoring is being a major thrust area in the global medical field by the researchers. The major problem of this disease is that the asymptomatic patient are acting as a carrier without knowledge. Which leads to a major threat in spreading the disease which even cause death in other people even after maintaining the social distancing. More over according to the research, rate of death is more in heart related disease affected patients. There is a vital need to detect cases at the early stages to minimize mortality especially in heart patients. In our work, we have designed and developed a trained Artificial Neural Network which can predict COVID 19 in asymptomatic patients and also can used for conditioning monitoring in COVID affected patients. Here we have used 2500 patients' details as training and testing data for the ANN network and 50 Symptoms as input variables. The Patients data are collected in Government Sivagangai Medical College and Hospital, Thirupathur village, Sivagangai district, Tamilnadu, India.

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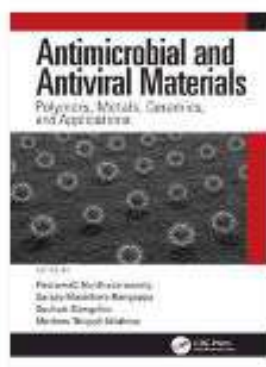
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Conference Location: Chennai, India



Chapter

## Emerging Antiviral Technology

*By Vinaya Tari, Karthik Kannan, Vinita Vishwakarma*

Book [Antimicrobial and Antiviral Materials](#)

|                 |               |
|-----------------|---------------|
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| First Published | 2022          |
| Imprint         | CRC Press     |
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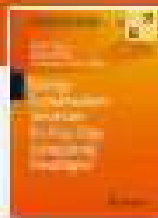


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### ABSTRACT

The demand for antiviral products is more to avoid the spread of infections and enhance product quality. Antiviral is an emerging technology where nanotechnology has a vital role in the growth arrest of the microorganism. Nanomaterials are proved to be clean, low cost, eco-friendly, and have a wide range of applications in several fields of environmental, agricultural, biomedical, defense, etc. These nanomaterials have distinctive physical and chemical properties because of the larger surface area to volume ratio. Many metals and metal-oxide-based nanomaterials have antimicrobial and antiviral properties because they disturb the respiratory enzymes leading to DNA damage of the microorganism. This chapter aims to gather information related to the current technologies of nanomaterials and their applications of emerging antiviral technologies in biomedical fields.





# Analysis on Application of Fog Computing in Industry 4.0 and Smart Cities

[Suja Cherukullapurath Manj](#), [B. Keerthi Samhitha](#), [D. Deepa](#) & [R. Vignesh](#)

Chapter | [First Online: 08 September 2021](#)

240 Accesses | 1 Citations

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 74)

## Abstract

In this chapter, authors analyze how fog computing can be efficiently utilized to improve the productivity in the industry 4.0 and smart city applications. The main aim of industry 4.0 applications is to improve the efficiency of manufacturing process through the incorporation of latest technologies. This environment can be improved by incorporating the fog computing paradigm. High energy consumption and abundance of data to be processed at the data nodes are some of the challenges that need to be addressed in industry 4.0 and smart city implementations. A fog computing-enabled architecture helps to reduce some of these challenges by working as a low complexity computational layer between cloud and internet of things (IoT) layers. By introducing this fog layer computationally intensive data processing tasks can be moved from the cloud layer to the fog layer and this fog layer can also act as a gateway to the other upper layers. In smart city applications also fog computing can be effectively utilized. In the fog computing environment the data analytics tasks can be pushed to the edge of the network which leads to better efficiency. In fog computing paradigm major functionalities are moved near to the local nodes. Since most of the computations are happening locally the need of transferring data to the cloud servers is significantly reduced. The benefits of this architecture can be utilized to improve the efficiency of smart city and industry 4.0 implementations. In this chapter, authors analyze how fog computing can be effectively utilized to improve industry 4.0 and smart city applications.

## Keywords

Fog computing

Industry 4.0

Smart cities

## About this chapter



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### Cite this chapter

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Smart Innovation, Systems and Technologies 269

Joy long-Zong Chen  
Haoxiang Wang  
Ke-Lin Du  
V. Suma *Editors*



# Machine Learning and Autonomous Systems

Proceedings of ICMLAS 2021



 Springer



# An Efficient Employee Retention Prediction Model for Manufacturing Industries Using Machine Learning Approach

[S. Radhika](#), [S. Umamaheswari](#), [R. Ranjith](#) & [A. Chandrasekar](#)

Conference paper | [First Online: 10 February 2022](#)

**454** Accesses | **1** Citations

Part of the [Smart Innovation, Systems and Technologies](#) book series (SIST, volume 269)

## Abstract

This paper explores the advantage of machine learning algorithm in the prediction of employee retention in manufacturing industries in India. The effect of different work-related and personal features on the retention of employees is discussed in detail. Further the main features that contribute to the retention of employees are also found. Using the best machine learning algorithm, prediction model to predict the retention of employees is proposed. Real-time data set collected from Ceramic Manufacturing sector in India is used to analyse the employee retention. Statistical parameters such as percentage analysis and correlation matrix are used to obtain the correlation and

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Pages 337-344

Lecture Notes in Networks and Systems 430

Mihir Narayan Mohanty  
Swagatam Das *Editors*

# Advances in Intelligent Computing and Communication

Proceedings of ICAC 2021

 Springer

# An Efficient Algorithm for Traffic Congestion Control

[A. Mary Posonia](#), [B. Ankayarkanni](#), [D. Usha Nandhini](#), [J. Albert Mayan](#) & [G. Nagarajan](#)

Conference paper | [First Online: 17 May 2022](#)

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Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 430)

## Abstract

Recently, car parking space is one of the hard tasks in modern-day traits. Area operation and supervision of vehicles' area is now a required area of study. Searchings' for an unfilled parking' vacancy in overfilled visitors is a time-taking manner. The prevailing to be had parking area popularity techniques are not robust or worldwide for photos took from one-of-a-kind photographic digicam lookouts. Final results of a right parking space in a hectic town is simply a stimulating trouble and public are facing this elaborate on an everyday base. The most reason of this observe is to extensively speak the previous research of vehicle parking area recognition and equivalence them from modified factors. To conquer these problems, we suggest an aircraft-primarily based method which adopts an operational three-D parking lot characteristic such as abundant planar aspects. The



### Cite this paper

Mary Posonia, A., Ankayarkanni, B., Usha Nandhini, D., Albert Mayan, J., Nagarajan, G. (2022). An Efficient Algorithm for Traffic Congestion Control. In: Mohanty, M.N., Das, S. (eds) Advances in Intelligent Computing and Communication. Lecture Notes in Networks and Systems, vol 430. Springer, Singapore. [https://doi.org/10.1007/978-981-19-0825-5\\_48](https://doi.org/10.1007/978-981-19-0825-5_48)

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# Advances in Bioremediation and Phytoremediation for Sustainable Soil Management

Principles, Monitoring and Remediation

 Springer

# Importance of Vermicomposting and Vermiremediation Technology in the Current Era

[Jackson Durairaj Selvan Christyraj](#), [Melinda Grace Rossan Mathews](#), [Ravichandran Subramaniam](#), [Beryl Vedha Yesudhason](#), [Karthikeyan Subbiahanadar Chelladurai](#) & [Johnson Retnaraj Samuel Selvan Christyraj](#) 

Chapter | [First Online: 31 January 2022](#)

**527** Accesses | **1** [Citations](#)

## Abstract

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Since prehistoric times the technique of composting has been used by farmers to recycle wastes into useful products that are able to improve plant growth. With industrial growth and population explosion, wastes generated have been significantly improved in previous years. Earthworms have played an important role in the organic waste mitigation by colonizing the wastes and eliminating it by intake, digestion, and assimilation. Today, vermicomposting biotechnology is established all over the globe for its environmental sustainability qualities. Degradation of waste and vermicomposting has proven to be economically and environmentally desired technology over traditional microbial degradation and composting technologies. Vermiremediation can accelerate the process of micro and phytoremediation in combination. Even though it may have many advantages over conventional remediation, certain limitations such as extreme soil conditions,

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### Cite this chapter

Christyraj, J.D.S., Mathews, M.G.R., Subramaniam, R., Yesudhasan, B.V., Chelladurai, K.S., Christyraj, J.R.S.S. (2022). Importance of Vermicomposting and Vermiremediation Technology in the Current Era. In: Malik, J.A. (eds) *Advances in Bioremediation and Phytoremediation for Sustainable Soil Management*. Springer, Cham. [https://doi.org/10.1007/978-3-030-89984-4\\_20](https://doi.org/10.1007/978-3-030-89984-4_20)

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## Importance of Vermicomposting and Vermiremediation Technology in the Current Era

Jackson Durairaj Selvan Christyraj, Melinda Grace Rossan Mathews, Ravichandran Subramaniam, Beryl Vedha Yesudhasan, Karthikeyan Subbiahanadar Chelladurai, Johnson Retnaraj Samuel Selvan Christyraj

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Varun Dhiman, Deepak Pant

Pages 365-378

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## Electrokinetic-Assisted Bioremediation and Phytoremediation for the Treatment of Polluted Soil

Tarun Kumar Kumawat, Vishnu Sharma, Varsha Kumawat, Manish Biyani, Naline Kumari, Rashi

Lecture Notes in Electrical Engineering 806

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# A Smart Device to Identify the Pandemic of Chronic Obstructive Pulmonary Disease

[J. Bethanne Janney](#), [T. Sudhakar](#), [G. UmaShankar](#), [L. Caroline Chriselda](#) & [H. Chandana](#)

Conference paper | [First Online: 17 December 2021](#)

**543** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 806)

## Abstract

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Over the last millennium, universal healthcare has seen an exponential increase. Patients would have to make periodic visits to the doctor to maintain their vital signs stable. The cough detection system assists early in the assessment and monitoring of respiratory problems. Cough helps to clear the mucus and lung infections that play a prominent role in diagnosis and treatment. According to world statistics, COPD affects about three million people in 2012 which is equivalent to 6% of all deaths worldwide per year. People find it difficult to detect lung-related diseases in sparsely populated areas, due to the system's complexity and cost of testing. Some people today seem to have a combination of COPD and asthma. There is a tremendous need for non-invasive methods of measuring such health condition. Hence, this proposed work aims to create and implement a secure, low-cost, low-powered, non-invasive and efficient system which could be



### Cite this paper

Bethanney Janney, J., Sudhakar, T., UmaShankar, G., Chriselda, L.C., Chandana, H. (2022). A Smart Device to Identify the Pandemic of Chronic Obstructive Pulmonary Disease. In: Raje, R.R., Hussain, F., Kannan, R.J. (eds) Artificial Intelligence and Technologies. Lecture Notes in Electrical Engineering, vol 806. Springer, Singapore. [https://doi.org/10.1007/978-981-16-6448-9\\_51](https://doi.org/10.1007/978-981-16-6448-9_51)

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Lecture Notes in Networks and Systems 430

Mihir Narayan Mohanty  
Swagatam Das *Editors*

# Advances in Intelligent Computing and Communication

Proceedings of ICAC 2021

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# A Joint Optimization Approach for Security and Insurance Management on the Cloud

[L. K. Joshila Grace](#), [S. Vigneshwari](#), [R. Sathya Bama Krishna](#), [B. Ankayarkanni](#) & [A. Mary Posonia](#)

Conference paper | [First Online: 17 May 2022](#)

**117** Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 430)

## Abstract

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Cloud computing is a technology that allows the access of various applications that are developed and various kinds of data that are generated from any region worldwide and any kind of device either hand held mobile device or desktop which are allowed to access the Internet. Energy efficient deployment which involves saving done in the cost of implementation, accessing the necessary resources for development of several customized applications in the industrial side. All the corporate sectors are indulged in keeping track of the security in the cloud making it even more secured for the end users. The Security-as-a-Service (SECaaS) that constitutes one of the paradigm cloud computing allows all the users who are acquiring access to the cloud to outsource the activity of applying necessary security to the information in the cloud, through the payment that is considered as a subscription fee. However, no security systems that are implemented are not so

### Cite this paper

Joshila Grace, L.K., Vigneshwari, S., Sathya Bama Krishna, R., Ankayarkanni, B., Mary Posonia, A. (2022). A Joint Optimization Approach for Security and Insurance Management on the Cloud. In: Mohanty, M.N., Das, S. (eds) Advances in Intelligent Computing and Communication. Lecture Notes in Networks and Systems, vol 430. Springer, Singapore.  
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Environmental Footprints and Eco-design  
of Products and Processes

Eric Lichtfouse  
Subramanian Senthilkannan Muthu  
Ali Khadir *Editors*

# Inorganic-Organic Composites for Water and Wastewater Treatment

Volume 1

 Springer



# Role of Water/Wastewater/Industrial Treatment Plants Sludge in Pollutant Removal

[Shawani Shome](#), [D. Venkatesan](#) & [J. Aravind Kumar](#)

Chapter | [First Online: 26 October 2021](#)

**289** Accesses

Part of the [Environmental Footprints and Eco-design of Products and Processes](#) book series (EFEPP)

## Abstract

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Sewage sludges are obtained as a by-product from the process of the wastewater treatment plants. Production is anticipated to increase as asset in environmental organization rises and further municipal wastewater is treated to even advanced standards. The consistent development in the environmental impact of water resources is expected to be answered by a noticeable upsurge in sludge volumes formed. While there are numerous ways of placing sewage sludge, using it in water decontamination can turn it into a resource. Sadly, a large proportion of the sludge produced is not valorized but is excluded together with other residues in waste tips. The necessities of investigating probable innovative routes are obvious for sewage sludge valorization. Considering the account factors such as the existence of volatile components and the detail that sewage sludge is carbonaceous in nature, the sludge may be considered as potentially appropriate for the

### Cite this chapter

Shome, S., Venkatesan, D., Aravind Kumar, J. (2022). Role of Water/Wastewater/Industrial Treatment Plants Sludge in Pollutant Removal. In: Lichtfouse, E., Muthu, S.S., Khadir, A. (eds) Inorganic-Organic Composites for Water and Wastewater Treatment. Environmental Footprints and Eco-design of Products and Processes. Springer, Singapore.  
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Missing a permanent tooth is a miserable condition faced by a common man. A tooth decay, periodontitis, mechanical trauma, or any systemic complications lead to such a complication. These bone defects when left untreated lead to severe resorption of the alveolar bone. A proper dental filling with an appropriate bone substitute material could prevent such resorption and paves a way for subsequent implant placement. Dental implants are considered as the prime option by dentists

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# Oxide Free Nanomaterials for Energy Storage and Conversion Applications

**Edited by**

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Govindhasamy Murugadoss <sup>a</sup>, Sunitha Salla <sup>b</sup>, Prabhakarn Arunachalam <sup>c</sup>

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### Abstract

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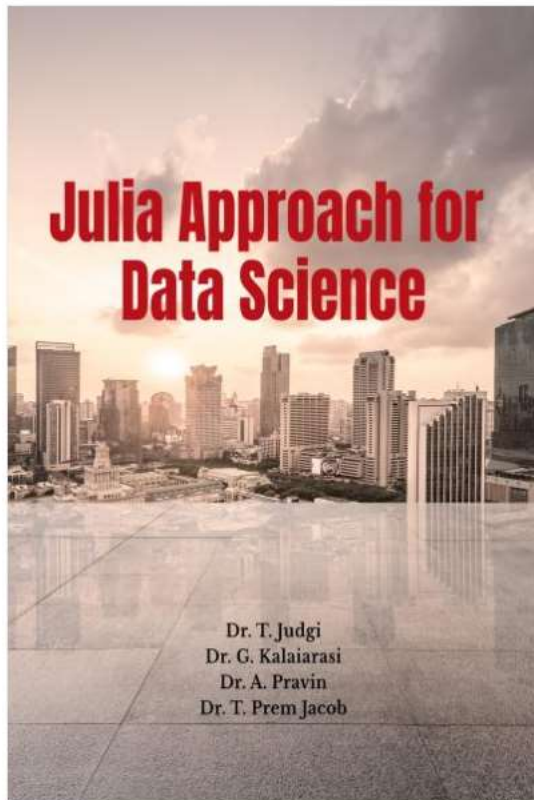
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Author Name: [T. Judgi, G. Kalaiarasi, A. Pravin, T. Prem Jacob](#) | Format: [Paperback](#) | Genre : [Educational & Professional](#) | [Other Details](#)

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This is a book for people who want to learn about the Julia language with a view to using it for data science. Some effort has gone into making this book suitable for someone who has familiarity with the R software and wants to learn about Julia. However, prior knowledge of R is not a requirement. While this book is not intended as a textbook for a course, some may find it a useful book to follow for a course that introduces statistics or data science students to Julia. It is our sincere hope that students, researchers and data scientists in general, who wish to learn Julia, will find this book beneficial.

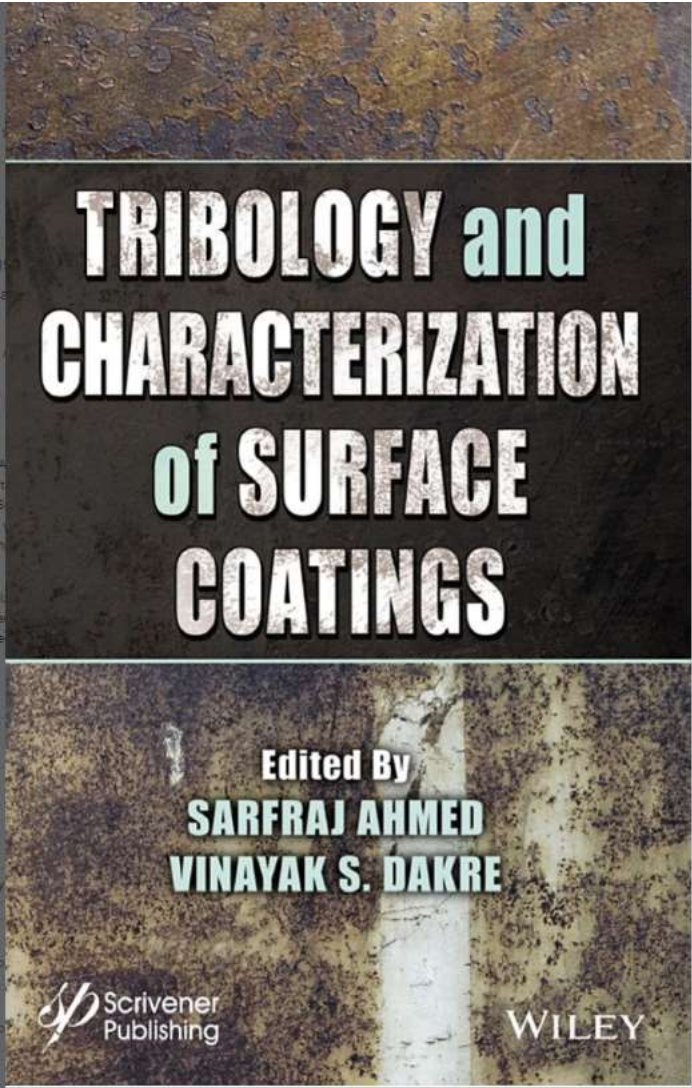
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# **TRIBOLOGY and CHARACTERIZATION of SURFACE COATINGS**

**Edited By  
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VINAYAK S. DAKRE**

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# Methods of Microstructural Characterization of Coatings

A. M. Kamalan Kirubaharan ✉, D. Dinesh Kumar, K. Gobi Saravanan, Subhenjit Hazra

Book Editor(s): Sarfraj Ahmed, Vinayak S. Dakre

First published: 16 January 2022

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 About



PDF



## Summary

This chapter describes the microstructural characterization of coatings prepared through physical vapor deposition (PVD) route. Coatings prepared through PVD are extensively used to enhance the tribological performance of forming tools, cutting tools, and machine components. In such applications, the microstructure of coatings are the most important factors widely used to evaluate the product and materials property. Recently, considerable attention has given to focus on the microstructure at the micro/nano level to clarify and to study the influence of microstructure in tribological performance of the coating. The primary characterization techniques used for the microstructural analysis of the coatings are X-ray diffraction (XRD), Raman spectroscopy, scanning electron microscopy (SEM) coupled with energy dispersive X-ray spectroscopy (EDS), atomic force microscopy (AFM), transmission electron microscopy (TEM), and X-ray photoelectron spectroscopy (XPS).

## Tribology and Characterization of Surface Coatings

Editor(s): Sarfraj Ahmed, Vinayak S. Dakre

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## CHAPTER 2

### **Tribological Investigation of Developed Nanocomposite Mos<sub>2</sub>-Tio<sub>2</sub>-Zro<sub>2</sub> Coating Material (Pages: 33-47)**

Avinash V. Borgaonkar, Deepak Rai, Ismail Syed

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## CHAPTER 3

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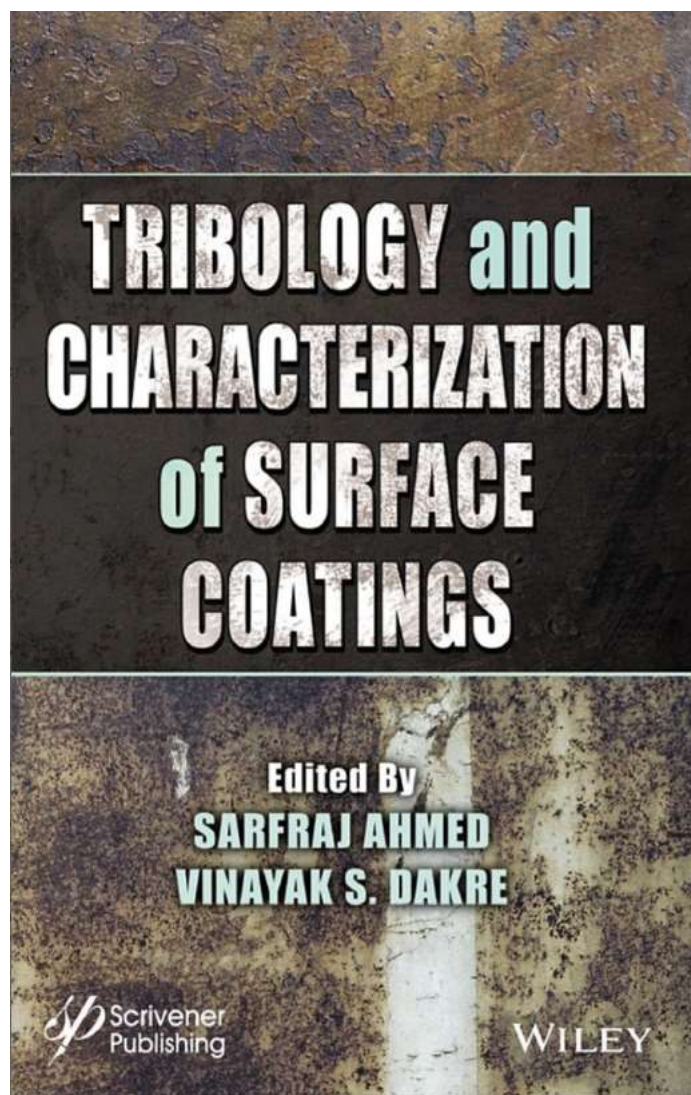
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## CHAPTER 5

### **Mechanical Behavior of Thermal Spray Coatings (Pages: 99-114)**

Iman A. Gamil, Thelma





## Tribology and Characterization of Surface Coatings

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# Tribological Properties of Carbon-Based Coatings

D. Dinesh Kumar✉, P. Kuppusami✉, Gobi Saravanan Kaliaraj, Siva Sankar Sana, A.M. Kamalan Kirubaharan

Book Editor(s): Sarfraj Ahmed, Vinayak S. Dakre

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 About



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## Summary

The ongoing industrial revolution demands advanced tribological coatings for enhancing the performance of mechanical components by minimizing friction and wear-related losses. Recently, carbon-based coatings have been widely studied for many tribology applications. The functionality of the carbon-based coatings can be achieved by controlled modification of  $sp^2/sp^3$  hybridization ratio or hydrogen content during the deposition process. Amorphous carbon (a-C) coatings and hydrogenated a-C (a-C:H) or diamond-like carbon (DLC) coatings provide ultralow friction behavior due to the enrichment of  $sp^2$  hybridized carbon features. Similarly, hydrogen-free carbon coatings with tetrahedral  $sp^3$  bonded networks (70%) show higher wear resistance

## Mechanical Behavior of Thermal Spray Coatings (Pages: 99-114)

Jayant Gopal Thakare

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### CHAPTER 6

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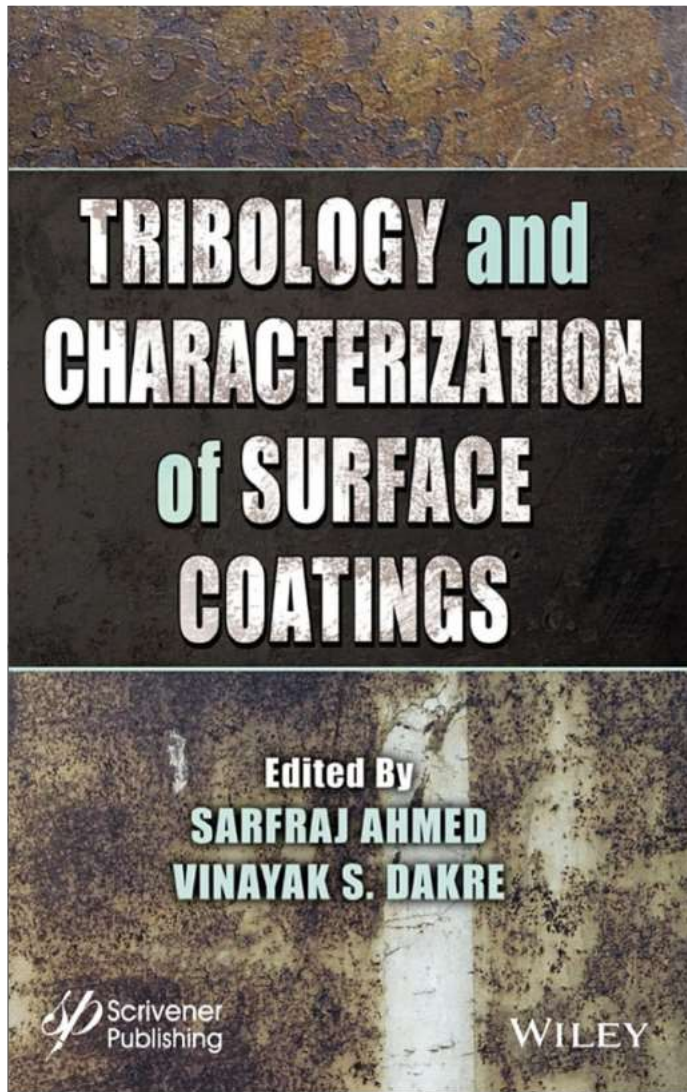
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### CHAPTER 8



## Tribology and Characterization of Surface Coatings

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## Bioactive Coatings for Biomedical Applications

Gobi Saravanan Kaliaraj ✉, D. Dinesh Kumar, A.M. Kamalan Kirubaharan

Book Editor(s): Sarfraj Ahmed, Vinayak S. Dakre

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 About



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### Summary

Artificial implants have gaining interest to repair or replace the defect parts in the human system. Majorly, orthodontic and orthopedic implant materials are playing predominant role in replacing teeth with endosseous parts in oral as well as orthopedic applications such as endosseous implants, fracture fixation, total joint arthroplasty, and ankle fracture replacement. For this, several metallic materials, namely, stainless steel, titanium and its alloy, Ni-Cr, Co-Cr, and Mg-based alloy, have been commercially used. Other non-metallic materials such as

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CHAPTER 7

**Performance Evaluation of Journal Bearing Under Thin-Film Lubrication  
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Sandeep Soni

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CHAPTER 8

**Bioactive Coatings for Biomedical Applications (Pages: 159-179)**

Gobi Saravanan Kaliaraj, D. Dinesh Kumar, A.M. Kamalan Kirubaharan

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**Study of Tribological Behavior and Wear Mechanism of Nanocomposite  
Coatings (Pages: 181-210)**

Lailesh Kumar, Pankaj Shrivastava, Deepankar Panda, Arka Ghosh, Syed Nasimul Alam

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# Handbook of Research on Tribology in Coatings and Surface Treatment

Amirhossein Pakseresht

*FunGlass - Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia*

Omid Sharifahmadian

*FunGlass - Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia*

A volume in the Advances in Chemical and  
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# Recent Advancements in Wear-Resistant Coatings Prepared by PVD Methods

Kamalan Kirubakaran Amirtharaj Mosas (FunGlass – Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia), Dinesh Kumar Devarajan (Sathyabama Institute of Science and Technology, India), Subhenjit Hazra (Sathyabama Institute of Science and Technology, India), and Gobi Saravanan Kaliaraj (Sathyabama Institute of Science and Technology, India)

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## Abstract

Physical vapor deposition (PVD) technologies are widely used to produce wear and corrosion resistant coatings for a variety of industrial applications. In recent years, there has been remarkable interest in the development of novel wear resistant coatings prepared through PVD methods, which helps to reduce friction and wear, as a result of recovering energy losses up to 30% due to friction and economy loss due to wear. This chapter provides comprehensive data of recent progress in wear resistant coatings prepared using PVD methods, starting with the introduction of it needs, significance, physiochemical properties, and the selection criteria of wear-resistant coatings. The applications, physical and chemical properties of



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[Amirhossein Pakseresht](#) (FunGlass – Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia) and [Omid Sharifahmadian](#) (FunGlass – Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia)

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Manpreet Kaur (Baba Banda Singh Bahadur Engineering College, India), Ashish Kumar (Baba Banda Singh Bahadur Engineering College, India), Pankaj Chhabra (Baba Banda Singh Bahadur Engineering College, India), Alphonsa Joseph (Institute for Plasma Research, Gandhinagar, India), Ghanshyam Jhala (Institute for Plasma Research, Gandhinagar, India)

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Kamalan Kirubakaran Amirtharaj Mosas (FunGlass – Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia), Dinesh Kumar Devarajan (Sathyabama Institute of Science and Technology, India), Subhenjit Hazra (Sathyabama Institute of Science and Technology, India), Gobi Saravanan Kaliaraj (Sathyabama Institute of Science and Technology, India)

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Mihaela Dinu (National Institute of R&D for Optoelectronics, Romania), Iulian Pana (National Institute of R&D for Optoelectronics, Romania), Anca C. Parau (National Institute of R&D for Optoelectronics, Romania), Alina Vladescu (National Institute of R&D for Optoelectronics, Romania)

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Dhanasekaran Dharumadurai *Editor*

# Methods in Actino- bacteriology

 Humana Press

# Bioleaching of Heavy Metals from e-Waste Using Actinobacteria

[Gopikrishnan Venugopal](#), [Manigundan Kaari](#), [Meganathan P. Ramakodi](#) & [Radhakrishnan Manikkam](#)

Protocol | [First Online: 01 January 2022](#)

**81** Accesses

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## Abstract

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End-of-Life Electrical and Electronic Equipments, commonly known as e-waste, is an emerging problem with developed as well as developing nations. Our obsession on electrical and electronic equipments, the unquenchable desire for latest devices and rapid advances in technology has resulted in the world wide generation of huge amount of e-waste. The application of microbial biotechnology is extensively exploited for metal extraction and emerged as one of the sustainable and eco-friendly tools. The bio-metallurgical process is usually referred as bioleaching which utilizes microorganisms to recover metals from low-grade ores and e-waste (Hong and Valix, J Clean Prod 65:465–472, 2014). Benefiting from lower operational cost and energy requirements in metal



### Cite this protocol

Venugopal, G., Kaari, M., Ramakodi, M.P., Manikkam, R. (2022). Bioleaching of Heavy Metals from e-Waste Using Actinobacteria. In: Dharumadurai, D. (eds) Methods in Actinobacteriology. Springer Protocols Handbooks. Humana, New York, NY.

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[Biosynthesis and Characterization of Silver Nanoparticles from Actinobacteria](#)

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# Methods in Actino- bacteriology

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# PCR-Based Determination of Secondary Metabolite Genes in Actinobacterial Cultures

[Manigundan Kaari](#), [Abirami Baskaran](#), [Gopikrishnan Venugopal](#), [Jerrine Joseph](#) & [Radhakrishnan Manikkam](#)

Protocol | [First Online: 01 January 2022](#)

**58** Accesses

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## Abstract

Actinobacteria are commonly found in nature, and special attention is given to their role in development of different secondary bioactive metabolites. In particular, *Streptomyces* is a wide and useful resource of bioactive and complex secondary metabolites, many of which have broad spectrum applications. Actinobacteria are natural producers of bioactive substances and hence continue to be an important source of novel secondary metabolites for drug use. In order to amplify genes associated with secondary metabolite biosynthesis, PCR-based methods have been used effectively, and it is therefore possible to predict if secondary metabolite pathways are present inside an organism. The main enzymes for secondary metabolite synthesis are polyketide



### Cite this protocol

Kaari, M., Baskaran, A., Venugopal, G., Joseph, J., Manikkam, R. (2022). PCR-Based Determination of Secondary Metabolite Genes in Actinobacterial Cultures. In: Dharumadurai, D. (eds) Methods in Actinobacteriology. Springer Protocols Handbooks. Humana, New York, NY. [https://doi.org/10.1007/978-1-0716-1728-1\\_34](https://doi.org/10.1007/978-1-0716-1728-1_34)

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[Biosynthetic Gene Cluster Analysis in Actinobacterial Genus Streptomyces](#)

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[PCR-Based Determination of Secondary Metabolite Genes in Actinobacterial Cultures](#)

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# Methods in Actino- bacteriology

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# In Vitro Evaluation of Actinobacterial Extracts for Anti-Inflammatory Properties

[Abirami Baskaran](#), [Manigundan Kaari](#), [Mary Shamyia](#), [Jerrine Joseph](#), [Shanmugasundaram Thangavel](#) & [Radhakrishnan Manikkam](#)

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## Abstract

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Inflammation is part of the complex biological response of vascular tissues to harmful stimuli, such as pathogens, damaged cells, or irritants. However, inflammation may lead to autoimmune or autoinflammatory disorders, neurodegenerative disease, or cancer when allowed to proceed unchecked. There are different in vitro and in vivo methods employed to study the anti-inflammatory properties of natural extracts and compounds. Since there are certain ethical issues to be considered upon using animals in early stages of drug discovery for inflammatory diseases, in vitro anti-inflammatory studies aid us in studying the cellular response in a closed system where all the required experimental conditions are maintained. These in vitro studies are helpful in understanding the mechanism of anti-inflammatory activity of extracts obtained

### Cite this protocol

Baskaran, A., Kaari, M., Shamy, M., Joseph, J., Thangavel, S., Manikkam, R. (2022). In Vitro Evaluation of Actinobacterial Extracts for Anti-Inflammatory Properties. In: Dharumadurai, D. (eds) Methods in Actinobacteriology. Springer Protocols Handbooks. Humana, New York, NY. [https://doi.org/10.1007/978-1-0716-1728-1\\_66](https://doi.org/10.1007/978-1-0716-1728-1_66)

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### Screening for Antioxidant Activity: Total Antioxidant Assay

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### Screening for Antioxidant Activity: Hydrogen Peroxide Scavenging Assay

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### Screening and Production of Antifreeze Proteins from Actinobacteria

Abirami Baskaran, Radhakrishnan Manikkam, Manigundan Kaari, Gopikrishnan Venugopal, Somasundaram Thirugnanasambandham, Parli V. Bhaskar  
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### In Vitro Evaluation of Actinobacterial Extracts for Immunomodulatory Properties

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### Screening of Actinobacteria for Enzyme Inhibitor Activity

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# Methods in Actino- bacteriology



Humana Press

# Screening of Actinobacteria for Microbial Induced Calcium Precipitation (MICP)

[Manigundan Kaari](#), [Abirami Baskaran](#), [Gopikrishnan Venugopal](#) & [Radhakrishnan Manikkam](#)

Protocol | [First Online: 01 January 2022](#)

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## Abstract

Microbial mediated mineral precipitation is a well-known process with numerous applications in different fields. Calcium carbonate can be precipitated in three polymorphic forms, which are calcite, aragonite, and vaterite in their normal stability order. Microbial induced calcium precipitation (MICP) is a bio-geochemical process that induces [calcium](#) precipitation within the matrix. It is a widespread biochemical process in normal terrestrial caves, freshwater, marine sediments, and hyper saline environments. MICP is an outcome of metabolic interactions between microorganisms and the organic and/or inorganic compounds present in the environment. Urea hydrolysis, de-nitrification, sulfate reduction, and photosynthesis are some of the main metabolic processes involved in MICP at various stages. The importance of microbial induced calcium precipitation (MICP) has prompted researchers to explore different strains of actinobacteria that are capable of mediating naturally occurring MICP.

### Cite this protocol

Kaari, M., Baskaran, A., Venugopal, G., Manikkam, R. (2022). Screening of Actinobacteria for Microbial Induced Calcium Precipitation (MICP). In: Dharumadurai, D. (eds) Methods in Actinobacteriology. Springer Protocols Handbooks. Humana, New York, NY.

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### [Screening of Actinobacteria for Microbial Induced Calcium Precipitation \(MICP\)](#)

Manigundan Kaari, Abirami Baskaran, Gopikrishnan Venugopal, Radhakrishnan Manikkam

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Isabely Fernanda Pizarro, Handray Fernandes de Souza, Janaína dos Santos Ferreira, Rafael



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# Methods in Actino- bacteriology

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# Miniaturized Production of Bioactive Extracts from Actinobacteria

[Abirami Baskaran](#), [Radhakrishnan Manikkam](#), [Manigundan Kaari](#), [Jerrine Joseph](#), [Gopikrishnan Venugopal](#) & [Balagurunathan Ramasamy](#)

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## Abstract

Antibiotic resistance occurs when the bacteria gain resistance across a whole class of drugs with similar mechanism of action. This could be wide and rapid, which alleviates the need for the discovery and development of novel antibiotics. Reports have shown that of all the microbial bioactive metabolites nearly 45% were produced by actinobacteria, with 80% of such secondary metabolites being produced by the genus *Streptomyces*. The metabolic and physiological properties of Actinobacteria range from production of extracellular enzymes to secondary metabolites. The discovery of useful bioactive compounds can be significantly increased with the persistent progress in science and technology from novel ~~actinobacterial species. The existing agar methods for production of metabolites~~

### Cite this protocol

Baskaran, A., Manikkam, R., Kaari, M., Joseph, J., Venugopal, G., Ramasamy, B. (2022).  
Miniaturized Production of Bioactive Extracts from Actinobacteria. In: Dharumadurai, D. (eds)  
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Charles Santhanaraju Vairappan

Pages 347-365

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### [Miniaturized Production of Bioactive Extracts from Actinobacteria](#)

Abirami Baskaran, Radhakrishnan Manikkam, Manigundan Kaari, Jerrine Joseph, Gopikrishnan Venugopal, Balagurunathan Ramasamy

Pages 367-370

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### [Screening, Characterization, and Identification of Antibacterial Compounds from Actinobacteria](#)

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### [Isolation, Identification, and Screening of Polyene Antifungal Compound Producing Streptomyces sampsonii MDCE7 from Agroforestry Soil](#)

Srinivasan Radhakrishnan, Mohan Varadharajan

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# Methods in Actino- bacteriology

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# Screening and Production of Antifreeze Proteins from Actinobacteria

[Abirami Baskaran](#), [Radhakrishnan Manikkam](#), [Manigundan Kaari](#), [Gopikrishnan Venugopal](#), [Somasundaram Thirugnanasambandham](#) & [Parli V. Bhaskar](#)

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## Abstract

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Cold tolerant organisms like psychrotrophs and psychrophiles survive at low temperatures by producing bioactive substances that helps in maintaining their blood unfrozen at low temperatures. Antifreeze proteins have been found in various organisms inhabiting the Arctic and Antarctic where they are constantly exposed to very low temperatures. Antifreeze proteins inhibit the growth and recrystallization of ice, thereby enabling the organisms to survive in such harsh conditions. Use of antifreeze proteins is much preferred in the fields of biomedicine, food preservation, and organ cryopreservation in comparison to the chemical freezing agents with their limitations. Much research is needed in laboratory and industry scale production of antifreeze proteins from psychrophilic microorganisms and this chapter briefs on the production and screening

### Cite this protocol

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### Screening and Production of Antifreeze Proteins from Actinobacteria

Abirami Baskaran, Radhakrishnan Manikkam, Manigundan Kaari, Gopikrishnan Venugopal, Somasundaram Thirugnanasambandham, Parli V. Bhaskar

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### In Vitro Evaluation of Actinobacterial Extracts for Immunomodulatory Properties

Abirami Baskaran, Manigundan Kaari, Radhakrishnan Manikkam, Gopikrishnan Venugopal, Jerrine Joseph, Shanmugasundaram Thangavel et al.

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### Screening of Actinobacteria for Enzyme Inhibitor Activity

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### Screening of Actinobacterial Extracts for Anti-biofilm Activity

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Springer Protocols

Dhanasekaran Dharumadurai *Editor*

# Methods in Actino- bacteriology

 Humana Press

# In Vitro Evaluation of Actinobacterial Extracts for Immunomodulatory Properties

[Abirami Baskaran](#), [Manigundan Kaari](#), [Radhakrishnan Manikkam](#), [Gopikrishnan Venugopal](#), [Jerrine Joseph](#), [Shanmugasundaram Thangavel](#) & [Somasundaram Thirugnanasambandham](#)

Protocol | [First Online: 01 January 2022](#)

**33** Accesses

Part of the [Springer Protocols Handbooks](#) book series (SPH)

## Abstract

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The term immunostimulation comprises a prophylactic or therapeutic concept which aims at the stimulation of our nonspecific immune system. This implies primarily the non-antigen dependent stimulation of the function and efficiency of granulocytes, macrophages, complement and natural killer cells. In contrast to immunity achieved by immunization or antibody injection, this type of immunity, arising from unspecific immunostimulation, is termed paramunity and the agents responsible are known as paramunity inducers. Most of immunostimulants and immunosuppressants in clinical use are cytotoxic drugs which possess serious side effects. There is a growing interest to use plant extracts and natural products as multi-component agents to modulate complex immune system in prevention of infections rather than treating immune-related diseases. There are several assays described to evaluate the immunomodulatory properties. We discuss two



### Cite this protocol

Baskaran, A. *et al.* (2022). In Vitro Evaluation of Actinobacterial Extracts for Immunomodulatory Properties. In: Dharumadurai, D. (eds) *Methods in Actinobacteriology*. Springer Protocols Handbooks. Humana, New York, NY. [https://doi.org/10.1007/978-1-0716-1728-1\\_68](https://doi.org/10.1007/978-1-0716-1728-1_68)

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[Springer Protocols](#)

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### In Vitro Evaluation of Actinobacterial Extracts for Immunomodulatory Properties

Abirami Baskaran, Manigundan Kaari, Radhakrishnan Manikkam, Gopikrishnan Venugopal, Jerrine Joseph, Shanmugasundaram Thangavel et al.

Pages 471-474

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### Screening of Actinobacteria for Enzyme Inhibitor Activity

Ramachandran Chelliah, Eric Banan-MwineDaliri, Deog-Hwan Oh

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### Screening of Actinobacteria for Quorum Sensing Inhibition

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### Screening of Actinobacterial Extracts for Anti-biofilm Activity

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Pages 483-485

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Springer Protocols

Dhanasekaran Dharumadurai *Editor*

# Methods in Actino- bacteriology

 Humana Press

# Isolation of Psychrophilic and Psychrotolerant Actinobacteria

[Manigundan Kaari](#), [Abirami Baskaran](#), [Gopikrishnan Venugopal](#), [Radhakrishnan Manikkam](#) & [Parli V. Bhaskar](#)

Protocol | [First Online: 01 January 2022](#)

**41** Accesses | **1** Citations

Part of the [Springer Protocols Handbooks](#) book series (SPH)

## Abstract

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Extreme environments with low temperatures constitute peculiar ecosystems that conceal novel biodiversity. These environments are colonized by cold loving organisms named psychrophiles, which have high biomass, diversity, and wide distribution when compared with other organisms thriving in extreme environments. Actinobacteria have the ability to survive in harsh environmental conditions like high salinity, high and low temperature, acidic and alkaline conditions. Actinobacterial diversity in the polar ecosystems has been extensively studied in the recent years using both culture-dependent and culture-independent techniques. Exploring novel actinobacterial strains has laid the foundations for potential industrial and biotechnological applications. This chapter describes the steps involved in sample processing and isolation of psychrophilic and psychrotolerant actinobacteria from water and sediment samples from cold environments.

### Cite this protocol

Kaari, M., Baskaran, A., Venugopal, G., Manikkam, R., Bhaskar, P.V. (2022). Isolation of Psychrophilic and Psychrotolerant Actinobacteria. In: Dharumadurai, D. (eds) *Methods in Actinobacteriology*. Springer Protocols Handbooks. Humana, New York, NY.

[https://doi.org/10.1007/978-1-0716-1728-1\\_21](https://doi.org/10.1007/978-1-0716-1728-1_21)

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### Isolation of Endophytic Actinobacteria from Lichens

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### Isolation of Stone-Dwelling Actinobacteria

Shabari Girish, Lokesh Ravi, Kannabiran Krishnan  
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Narendra Kumar Sharma  
Aditya Arya *Editors*

# High Altitude Sickness – Solutions from Genomics, Proteomics and Antioxidant Interventions

 Springer

# Serum and Plasma Proteomics for High Altitude Related Biomarker Discovery

[Aditya Arya](#) & [Amit Kumar](#)

Chapter | [First Online: 01 July 2022](#)

**108** Accesses

## Abstract

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Serum and plasma are widely used biological fluids for a large variety of biochemical and pathological tests which have been used since historical times for diagnosis and prophylactic analysis. High altitude physiology and related pathologies are geographically localized socio-economic issues of a large set of population. In the last few decades, considerable research has been done to explore the underlying proteomic changes in serum and plasma of humans as well as in the model organisms. Recent studies have led to the emergence of a number of potential prophylactic and therapeutic targets which enable better and timely diagnosis, effective therapy, and also susceptibility testing of high altitude related illness. As proteome is highly dynamic in time and space, and serum or plasma is known to reflect the proteomic changes in various organs. Although analysis of plasma or serum is an invasive approach, yet the specificity of plasma-based markers holds great promise in diagnostics. In this chapter, we

### Cite this chapter

Arya, A., Kumar, A. (2022). Serum and Plasma Proteomics for High Altitude Related Biomarker Discovery. In: Sharma, N.K., Arya, A. (eds) High Altitude Sickness – Solutions from Genomics, Proteomics and Antioxidant Interventions. Springer, Singapore.

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## [Role of Genomics, Proteomics, and Antioxidant Interventions in Preventing High Altitude Sickness](#)

Samakshi Verma, Arindam Kuila

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## [High Altitude Sickness and Antioxidant Interventions](#)

Sarika Singh

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## Zero attraction data selective adaptive filtering algorithm for big data applications

**Author(s):** Sivashanmugam Radhika<sup>1</sup> and Arumugam Chandrasekar<sup>2</sup>

[View affiliations »](#)

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**Publication date:** July 2021

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**Abstract**

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Big data sets are characterized by raw data with large dimension, noise accumulation, spurious correlation and heavy-tailed behavior along with measurement outliers. Therefore, a unified approach is inevitable to preprocess the raw data in order to improve the prediction accuracy. In this paper, we present updated data preprocessing framework based on adaptive filtering algorithm with data selection capability together with removal of outliers and noise. The  $l_1$  norm minimization along with a new update rule based on higher order statistics of error enables dimension reduction without any sacrifice in accuracy. Thus, the proposed zero attraction data selective least mean square (ZA-DS-LMS) algorithm can claim for the reduction in the computational cost with the improvement in convergence speed and steady-state mean square error (MSE) without any compromise in the accuracy. Simulations were performed in real and simulated big data to validate the performance improvement of the proposed algorithm in the context of preprocessing for big data analysis.

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## 1 Big data analytics for security intelligence

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## 2 Zero attraction data selective adaptive filtering algorithm for big data applications

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Big data sets are characterized by raw data with large dimension, noise accumulation, spurious correlation and heavy-tailed behavior along with measurement outliers. Therefore, a unified approach is inevitable to preprocess the raw data in order to improve the prediction accuracy. In this paper, we present updated data preprocessing framework based on adaptive filtering algorithm with data selection capability together with removal of outliers and noise. The  $l_1$  norm minimization along with a new update rule based on higher order statistics of error enables dimension reduction without any sacrifice in accuracy. Thus, the proposed zero attraction data selective least mean square (ZA-DS-LMS) algorithm can claim for the reduction in the computational cost with the improvement in convergence speed and steady-state mean square error (MSE) without any compromise in the accuracy. Simulations were performed in real and simulated big data to validate the performance improvement of the proposed algorithm in the context of preprocessing for big data analysis.

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Lecture Notes in Electrical Engineering 691

Karma Sonam Sherpa  
Akash Kumar Bhoi  
Akhtar Kalam  
Manoj Kumar Mishra *Editors*

# Advances in Smart Grid and Renewable Energy

Select Proceedings of ETAEERE 2020

 Springer

# Twitter Topic Analysis Using Multi-tweet Sequential Summarization for Sentimental Data

[B. Melanshiya](#), [P. Mirium Swarna](#) & [Ramya G. Franklin](#) 

Conference paper | [First Online: 05 January 2021](#)

**308** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 691)

## Abstract

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Microblogging, a mainstream online networking administration stage, has become another data channel for clients to get and trade the most state-of-the-art data on recent developments. Therefore, it is a pivotal stage for distinguishing recently developing occasions and for recognizing powerful spreaders who can possibly and effectively disperse information about occasions through microblogs. However, conventional location models of occasions require human mediation to distinguish the quantity of topics to be investigated, which substantially diminishes the effectiveness and accuracy of occasional recognition. The exploratory tests, using a Twitter dataset, show the adequacy of our proposed strategies to identify opportunities as well as to differentiate efficient spreaders.

### Cite this paper

Melanshiya, B., Swarna, P.M., Franklin, R.G. (2021). Twitter Topic Analysis Using Multi-tweet Sequential Summarization for Sentimental Data. In: Sherpa, K.S., Bhoi, A.K., Kalam, A., Mishra, M.K. (eds) Advances in Smart Grid and Renewable Energy. ETAEERE ETAEERE 2020. Lecture Notes in Electrical Engineering, vol 691. Springer, Singapore.  
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Environmental Footprints and Eco-design  
of Products and Processes

Eric Lichtfouse  
Subramanian Senthilkannan Muthu  
Ali Khadir *Editors*

# Inorganic-Organic Composites for Water and Wastewater Treatment

Volume 1

 Springer

# Role of Water/Wastewater/Industrial Treatment Plants Sludge in Pollutant Removal

[Shawani Shome](#), [D. Venkatesan](#) & [J. Aravind Kumar](#)

Chapter | [First Online: 26 October 2021](#)

**289** Accesses

Part of the [Environmental Footprints and Eco-design of Products and Processes](#) book series (EFEPP)

## Abstract

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Sewage sludges are obtained as a by-product from the process of the wastewater treatment plants. Production is anticipated to increase as asset in environmental organization rises and further municipal wastewater is treated to even advanced standards. The consistent development in the environmental impact of water resources is expected to be answered by a noticeable upsurge in sludge volumes formed. While there are numerous ways of placing sewage sludge, using it in water decontamination can turn it into a resource. Sadly, a large proportion of the sludge produced is not valorized but is excluded together with other residues in waste tips. The necessities of investigating probable innovative routes are obvious for sewage sludge valorization. Considering the account factors such as the existence of volatile components

### Cite this chapter

Shome, S., Venkatesan, D., Aravind Kumar, J. (2022). Role of Water/Wastewater/Industrial Treatment Plants Sludge in Pollutant Removal. In: Lichtfouse, E., Muthu, S.S., Khadir, A. (eds) Inorganic-Organic Composites for Water and Wastewater Treatment. Environmental Footprints and Eco-design of Products and Processes. Springer, Singapore.  
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### [Role of Water/Wastewater/Industrial Treatment Plants Sludge in Pollutant Removal](#)

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Chinmay Chakraborty  
Swapnila Roy  
Susmita Sharma  
Tien Anh Tran *Editors*

# The Impact of the COVID-19 Pandemic on Green Societies

Environmental Sustainability

 Springer

# Impact of Biomedical Waste Management System on Infection Control in the Midst of COVID-19 Pandemic

[Johnson Retnaraj Samuel Selvan Christyraj](#), [Jackson Durairaj Selvan Christyraj](#), [Prasannan Adhimoorthy](#), [Kamarajan Rajagopalan](#) & [J. Nimita Jebaranjitham](#) 

Chapter | [First Online: 23 March 2021](#)

**848** Accesses | **8** Citations

## Abstract

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The emergence of modern medicinal practices and diagnosis process has resulted in health risks and threat to the environment, and thus it is a matter of global concern. However, the improper waste management rules adopted in healthcare hospitals around the world cause a potential health impact to ecosystem which generates contagious and deadly diseases affected by human beings. In this chapter, an attempt is made to investigate an overview of biomedical waste management practices in healthcare facilities in India as well as around the world. This chapter intends to provide the origin and types of biomedical waste, requirement of waste management rules and containment in hospitals and research centres and followed by the safe disposal of wastes which are unaffected to the environment. More emphasis was given to the biomedical health risks, handling and disposal methodologies adopted by

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### Cite this chapter

Selvan Christyraj, J.R.S., Selvan Christyraj, J.D., Adhimoorthy, P., Rajagopalan, K., Nimita Jebaranjitham, J. (2021). Impact of Biomedical Waste Management System on Infection Control in the Midst of COVID-19 Pandemic. In: Chakraborty, C., Roy, S., Sharma, S., Tran, T.A. (eds) The Impact of the COVID-19 Pandemic on Green Societies. Springer, Cham.  
[https://doi.org/10.1007/978-3-030-66490-9\\_10](https://doi.org/10.1007/978-3-030-66490-9_10)

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[IoT Based Wearable Healthcare System: Post COVID-19](#)

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# Handbook of Polymer and Ceramic Nanotechnology

 Springer



# Synthesis, Properties, and Applications of Polymer Nanocomposites Matrices

[D. Venkatesan](#), [J. Aravind Kumar](#) & [R. Mohana Prakash](#)

Living reference work entry | [First Online: 24 January 2021](#)

**38** Accesses

## Abstract

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Polymeric nanocomposites matrices are extremely desirable and the most adaptable materials these days because of their green usage, readiness, and low cost. They do not only own exceptional properties but can also be made to display combination of properties for multifunctional applications. Polymer nanocomposites can be useful to numerous fields such as in food packaging, as biosensors, and as adsorbents, and biomedical applications. They are useful in almost every area of life including sports, aerospace, electronics, automotive, electrical, energy, marine, etc. Development of these polymer nanocomposites involves systematic design, selection of material, and synthesis. They can be synthesized through many approaches such as intercalation, direct mixing of nanofillers with polymer, sol-gel, and in situ polymerization. The most generally used synthesis practices, including ultrasonication-assisted solution mixing, ball

### Cite this entry

Venkatesan, D., Aravind Kumar, J., Mohana Prakash, R. (2021). Synthesis, Properties, and Applications of Polymer Nanocomposites Matrices. In: Hussain, C.M., Thomas, S. (eds) Handbook of Polymer and Ceramic Nanotechnology. Springer, Cham.

[https://doi.org/10.1007/978-3-030-10614-0\\_65-1](https://doi.org/10.1007/978-3-030-10614-0_65-1)

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### [Synthesis of Polymer Nanocomposite Films](#)

Ahlam F. M. Alsayed, Muhammad Aqeel Ashraf

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J. Aravind Kumar, T. Krithiga, D. Venkatesan, S. Sathish, D. Joshua Amarnath

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### [Synthesis, Properties, and Applications of Polymer Nanocomposites Matrices](#)

D. Venkatesan, J. Aravind Kumar, R. Mohana Prakash

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Muhammad Shahbaz Khurshid, Malik Sajjad Mehmood, Muhammad Zubair

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Malik Sajjad Mehmood, Malik Naqash Mehmood

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T. C. Mokhena, M. J. John, M. J. Mochane, A. Mtibe

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Lecture Notes in Electrical Engineering 708

Akash Kumar Bhoi  
Pradeep Kumar Mallick  
Valentina Emilia Balas  
Bhabani Shankar Prasad Mishra *Editors*

# Advances in Systems, Control and Automations

Select Proceedings of ETAEERE 2020

 Springer

# Semantic-Based Duplicate Web Page Detection

[A. C. Santha Sheela](#)  & [C. Jayakumar](#)

Conference paper | [First Online: 20 March 2021](#)

**202** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

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The Internet search has become a regular activity for billions of web users to find information. Users typically rely on search engines for information retrieval. Thus, it has become increasingly important for users to find the best results for their queries. There are nevertheless challenges to provide the most efficient, appropriate, and trustworthy results to the user in every web search environment. But there exist numerous unwanted repetitive web pages that escalate time complexity and indexing space issues; hence, identifying and eliminating such pages become a necessity for the communities responsible for information retrieval and web mining. The main aim for web content mining is to identify the duplicate web page content in web search engine. The literature shows the lack of a complete and time efficient duplicate detection model for



### Cite this paper

Santha Sheela, A.C., Jayakumar, C. (2021). Semantic-Based Duplicate Web Page Detection. In: Bhoi, A.K., Mallick, P.K., Balas, V.E., Mishra, B.S.P. (eds) Advances in Systems, Control and Automations . ETAERE 2020. Lecture Notes in Electrical Engineering, vol 708. Springer, Singapore. [https://doi.org/10.1007/978-981-15-8685-9\\_56](https://doi.org/10.1007/978-981-15-8685-9_56)

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K. S. S. N. Krishna, A. Jesudoss  
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### [Semantic-Based Duplicate Web Page Detection](#)

A. C. Santha Sheela, C. Jayakumar  
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Y. Bevis Jinila, D. Goutham Reddy, G. Yaswanth Reddy  
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Lecture Notes on Data Engineering  
and Communications Technologies 63

K. Ashoka Reddy  
B. Rama Devi  
Boby George  
K. Srujan Raju *Editors*



# Data Engineering and Communication Technology

Proceedings of ICDECT 2020

 Springer

# Self-powered Implantable Device Using Thermo Electric Generator with DC-DC Converter for Elimination of Bradycardia

[M. Shwetha](#)  & [S. Lakshmi](#)

Conference paper | [First Online: 24 May 2021](#)

**524** Accesses | **1** Citations

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 63)

## Abstract

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DC–DC converters with TEG for self-powering implantable devices is presented in this paper. A healthy heart rate is a key factor for the longevity of human beings. Bradycardia is a slow heartbeat that falls out as one of the major issues. An implantable device that deals with this disease are pacemaker. Battery oriented implantable pacemaker sustains until the life of the battery. Replacing implants due to limitation of battery life demands surgical operations leads to a painful process on patients and the area consumed by these batteries tend to 60–70%. The larger size of the battery is another issue due to which implant size also increases. In this research work to eliminate the battery, a self-powered

### Cite this paper

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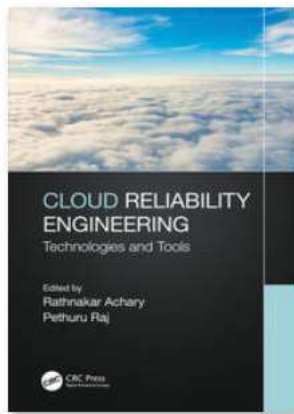
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# Reliability and Authenticity of Cloud-Based Technologies in Mobile Grid Environment Using Parameter-Based Malicious Node Detection Method

By T. Sasikala, S. Vigneshwari, G. Nagarajan, S. Vimala

Book [Cloud Reliability Engineering](#)

|                 |               |
|-----------------|---------------|
| Edition         | 1st Edition   |
| First Published | 2021          |
| Imprint         | CRC Press     |
| Pages           | 16            |
| eBook ISBN      | 9781003030973 |

## ABSTRACT



The emerging Grid technology includes laptops, PDAs, effective sensors and so forth to form a mobile Grid. As the number of mobile Grid users increase, the risk in accessing the Grid increases, consequently. The existing security system of the Grid environment simply focuses on authentication services. The system needs to concentrate on hackers and attackers who distress the communication process. The number of keys employed for  $n$  Grid users is  $n*(n-1)$ . Therefore, a novel technique for minimizing the number of keys and the security system for preventing malicious attackers is crucial. In this chapter, an efficient Group key is designed to provide authentication service and a wormhole resistance system to prevent malicious attackers.

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# Bioenergy Research: Evaluating Strategies for Commercialization and Sustainability

Editor(s): Neha Srivastava, Manish Srivastava

First published: 26 April 2021

Print ISBN: 9781119772095 | Online ISBN: 9781119772125 | DOI: 10.1002/9781119772125

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## Recent Developments of Bioethanol Production

Arla Sai Kumar, Sana Siva Sankar, S K Godlaveeti, Dinesh Kumar, S Dheiver, Ram Prasad, Chandrasekhar Nb, Thi Hong Chuong Nguyen, Quyet Van Le

Book Editor(s):Neha Srivastava, Manish Srivastava

First published: 27 April 2021

<https://doi.org/10.1002/9781119772125.ch9>

 About



PDF



### Summary

One of the most significant challenges in the twenty-first century is to meet the growing energy demand. Thus, the need for the production of ethanol increased gradually as it is the most widely used biofuel around the globe. In this chapter, various advanced methods and techniques to synthesis bioethanol are discussed. All over the world, research on bioethanol production has grown alongside increasing energy needs, and it has become a research area of great interest to many governments, academic groups, and companies. This liquid biofuel can tackle problems associated with rising crude oil prices, global warming, and diminishing petroleum reserves. Production of bioethanol mitigates the greenhouse gas (GHG) emissions and leads to a sustainable environment. The former



## **Microbial Cellulolytic-Based Biofuel Production (Pages: 153-173)**

S.M. Bhatt

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## **Recent Developments of Bioethanol Production (Pages: 175-208)**

Arla Sai Kumar, Sana Siva Sankar, S K Godlaveeti, Dinesh Kumar, S Dheiver, Ram Prasad, Chandrasekhar Nb, Thi Hong Chuong Nguyen, Quyet Van Le

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## **Algal Biofuels – Types and Production Technologies (Pages: 209-244)**

Sreedevi Sarsan, K. Vindhya Vasini Roy

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Rajeev Singh, P K Mishra, Neha Srivastava, Akshay Shrivastav, K R Srivastava

## Chapter



# Thermochemical and Biological Conversion of Biomass into Biofuels and Biochemicals

By *Munusamy Subathra, Narasiman Nirmala, Shanmuganantham Selvanantham Dawn, Sivaprasad Shyam, Kannappan Panchamoorthy Gopinath, Jayaseelan Arun*

Book [Progressive Thermochemical Biorefining Technologies](#)

|                 |               |
|-----------------|---------------|
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| First Published | 2021          |
| Imprint         | CRC Press     |
| Pages           | 15            |
| eBook ISBN      | 9781003098591 |

## ABSTRACT



Strategic planning for the production and usage of biofuels is needed for sustainability and to meet the uncertainties. In this chapter, the state-of-the-art review was made to meet the need for biorefinery approaches for various biomasses. The survey depicted that there was a huge role to be played by the biofuels in future to address the issues raised by usage of fossil fuels. Preferably, the wet biomasses are processed via liquefaction and anaerobic digestion modes, whereas the dry biomasses are processed via pyrolysis.

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# Advances in Power Systems and Energy Management

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# Proficient Data Retrieval Technique in Cloud Using TF-IDF Model

[S. Keerthi Vasan](#) , [S. Jancy](#), [Mercy Paul Selvan](#) & [Viji Amutha Mary](#)

Conference paper | [First Online: 21 January 2021](#)

**299** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 690)

## Abstract

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Storage of secure records and recovering is one of the most bursting investigations heading in cloud computing. In spite of the way that various available encryption plans have been proposed, very few of them support profitable recuperation over the records which are encoded reliant on their characteristics. Currently, progressive quality based encryption model is intended for a record collection. A lot of records can be encoded together on the off chance that they share an integrated access structure. For improving the search viability DFS algorithm is used for the ARF tree. It can be further improved using cloud computing. Our system can be implemented for the purpose of document collection by slightly modifying the ARF tree.



### Cite this paper

Vasan, S.K., Jancy, S., Selvan, M.P., Mary, V.A. (2021). Proficient Data Retrieval Technique in Cloud Using TF-IDF Model. In: Priyadarshi, N., Padmanaban, S., Ghadai, R.K., Panda, A.R., Patel, R. (eds) Advances in Power Systems and Energy Management. ETAEERE ETAEERE 2020 2020. Lecture Notes in Electrical Engineering, vol 690. Springer, Singapore.  
[https://doi.org/10.1007/978-981-15-7504-4\\_54](https://doi.org/10.1007/978-981-15-7504-4_54)

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### [Proficient Data Retrieval Technique in Cloud Using TF-IDF Model](#)

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# Advances in Systems, Control and Automations

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# Privacy Preserving and Loss Data Retrieval in Cloud Computing Using Bucket Algorithm

[T. Durga Nagarjuna](#), [T. Anil Kumar](#) & [A. C. Santha Sheela](#) 

Conference paper | [First Online: 20 March 2021](#)

**196** Accesses | **1** Citations

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

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Cloud data is maintained, stored, and managed from all over the global network. The suggestions about the information will not be given by the cloud provider. Encryption-based technology is used to protect the schemes like privacy. To prevent leakage of data from the cloud, there are many different types of privacy preserving methods. In order to overcome the drawback, we propose a framework based on fog computing known as three-layer storage. The framework that is proposed takes total advantage of protecting the privacy of data and cloud storage. So, we will be using the Hash-Solomon algorithm code, which is designed for partition of data into equal and separate parts. If any part of the data is lost, we will remain with other parts of the data which is insufficient. Here, we will be using algorithms based on bucket concept in this

### Cite this paper

Durga Nagarjuna, T., Anil Kumar, T., Santha Sheela, A.C. (2021). Privacy Preserving and Loss Data Retrieval in Cloud Computing Using Bucket Algorithm. In: Bhoi, A.K., Mallick, P.K., Balas, V.E., Mishra, B.S.P. (eds) Advances in Systems, Control and Automations . ETAEERE 2020. Lecture Notes in Electrical Engineering, vol 708. Springer, Singapore.  
[https://doi.org/10.1007/978-981-15-8685-9\\_32](https://doi.org/10.1007/978-981-15-8685-9_32)

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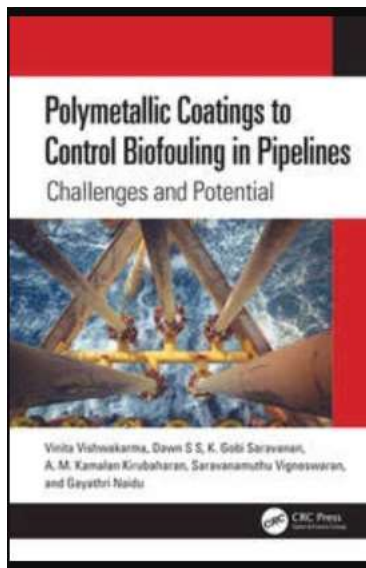
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## Biofouling in Oil and Gas/Biofuel Pipelines

By *S S Dawn, N Nirmala, Vinita Vishwakarma*

Book [Polymetallic Coatings to Control Biofouling in Pipelines](#)

|                 |               |
|-----------------|---------------|
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### ABSTRACT



This chapter introduces the economic impact the oil/gas and biofuels have on the energy sector. A detailed compilation of the global scenario has been given. The role of these energy-deriving materials in the economic growth and fall of a country has been critically reviewed. The mechanisms of transporting oil/gas and biofuels and the various reasons causing biofouling have been analyzed. Fouling causing and controlling factors have been highlighted. Biofouling a challenging phenomenon though inevitable when detected early can reduce the heavy investments on cleaning of the pipelines, which emerges as a huge challenge in the fuel transportation sector.

2. Biofouling in Industrial Water Systems, Membrane Biofouling:

Assessment and Reduction Strategies

*[Sanghyun Jeong, Nirenkumar Pathak, Gayathri Naidu, and  
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3. Biofouling in Oil and Gas/Biofuel Pipelines

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4. Introduction to Surface Coatings

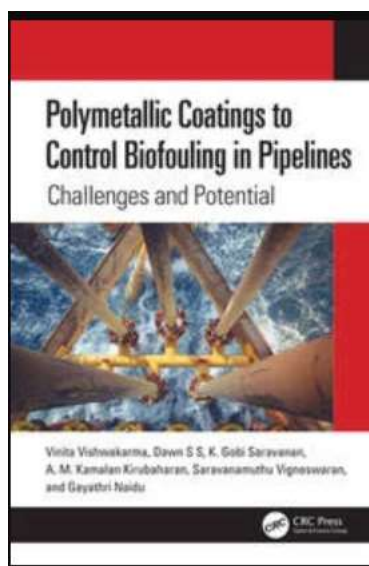
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Vinita Vishwakarma]*

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6. Metallic Coatings

*[A. M. Kamalan Kirubaharan, K. Gobi Saravanan, and  
Vinita Vishwakarma]*



## Metallic Coatings

*By A. M. Kamalan Kirubakaran, K. Gobi Saravanan, Vinita Vishwakarma*

Book [Polymetallic Coatings to Control Biofouling in Pipelines](#)

Edition 1st Edition

First Published 2021

Imprint CRC Press

Pages 10

eBook ISBN 9781003193449

## ABSTRACT



This chapter presents the recent developments in metallic coatings used in pipelines prepared through various techniques. The techniques available to deposit various metallic and composite ternary coatings are discussed. The most commonly available metallic-based corrosion-resistant coatings available nowadays are electroless Ni, Ni-P, and ternary composite coatings. Tailoring of electroless nickel-based coatings' surface property is predominantly useful for many industrial applications due to their ease of fabrication and better corrosion resistance. Hence, a more detailed discussion on the electroless nickel plating technique is presented in detail. The possible corrosion mechanisms of metallic coatings through different mechanisms are discussed in brief. Further progress in this metallic coating could lead to the design of ternary metallic coatings that inhibit corrosion of underlying substrates. Finally, some commercial and industrial applications of metallic coatings are given in this chapter.

Chapter 5 | 20 pages

### Characterization of Surface Coatings

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Chapter 6 | 10 pages

### Metallic Coatings

By A. M. Kamalan Kirubaharan, K. Gobi Saravanan, Vinita Vishwakarma

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3. Biofouling in Oil and Gas/Biofuel Pipelines

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4. Introduction to Surface Coatings

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6. Metallic Coatings

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# Handbook of Polymer and Ceramic Nanotechnology

 Springer

# Polymers in Biomedical Use

[J. Premkumar](#) , [K. SonicaSree](#) & [T. Sudhakar](#)

Living reference work entry | [First Online: 29 May 2021](#)

**401** Accesses

## Abstract

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Polymers are macromolecules, versatile in structure, constitution, and properties. They have wide range of applications in various fields such as biophysics, medicine, electronics, and other branches of science and technology. Among these polymers biomedical polymers are specially mentioned due to their less toxicity in vivo, easy to process and sterilized, better shelf life, light weight, and remarkable properties suited to the applications. The current research explores the various applications of biomedical polymers in the field of medicine. Applications are wide ranging with degradable polymers being used clinically as surgical sutures and implants. In order to fit functional demand, materials with desired physical, chemical, biological, biomechanical, and degradation properties must be selected.

### Cite this entry

Premkumar, J., SonicaSree, K., Sudhakar, T. (2021). Polymers in Biomedical Use. In: Hussain, C.M., Thomas, S. (eds) Handbook of Polymer and Ceramic Nanotechnology. Springer, Cham. [https://doi.org/10.1007/978-3-030-10614-0\\_74-1](https://doi.org/10.1007/978-3-030-10614-0_74-1)

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## [Polymeric and Ceramic Nanoparticles: Possible Role in Biomedical Applications](#)

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Namrata Gangil, Arshad Noor Siddiquee, Sachin Maheshwari

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## [Recent Advances on Thermal Conductivity of Boron Nitride-Polymer Composites](#)

M. J. Mochane, T. C. Mokhena, J. S. Sefadi, T. S. Motsoeneng, A. Mtibe

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Lecture Notes in Electrical Engineering 795

C. Subramani  
K. Vijayakumar  
Brayima Dakyo  
Subhransu Sekhar Dash *Editors*

# Proceedings of International Conference on Power Electronics and Renewable Energy Systems

ICPERES 2021

 Springer

# Performance Analysis of IPT with DC to DC Converter for E-Vehicle Application

[V. Senthil Nayagam](#) & [L. Premalatha](#)

Conference paper | [First Online: 22 November 2021](#)

**292** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 795)

## Abstract

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This work proposes the utilization of Inductive Power Transmission (IPT), for charging the E-Vehicle's battery with the help of an efficient DC TO DC converter. In this IPT method, the DC TO DC converter is operated with the inclusion of transmitting and receiving coils. The required power for transmitting coil from the input source (AC Source or solar energy) is controlled and supplied by the DC TO DC converter 1. Meanwhile from the receiving coil side of IPT system, the obtained power supply will be controlled by DC TO DC converter 2 for charging the battery. In order to identify the efficient DC TO DC converter, two types of converters namely VMC (Voltage multiplier cell) based DC TO DC converter and LUO converters are taken into account for comparison.

### Cite this paper

Senthil Nayagam, V., Premalatha, L. (2022). Performance Analysis of IPT with DC to DC Converter for E-Vehicle Application. In: Subramani, C., Vijayakumar, K., Dakyo, B., Dash, S.S. (eds) Proceedings of International Conference on Power Electronics and Renewable Energy Systems. Lecture Notes in Electrical Engineering, vol 795. Springer, Singapore.  
[https://doi.org/10.1007/978-981-16-4943-1\\_26](https://doi.org/10.1007/978-981-16-4943-1_26)

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### Online ISBN

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### [Predictive Maintenance of Industrial Equipment's Using IOT](#)

S. Nithya, K. Vijayalakshmi, M. Parimala Devi

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P. Ramesh Babu, P. Vigneshwar, R. Udaya Simha, S. Tanweer Ahamed, S. Vengatesh, V. Vijay

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### [Performance Analysis of IPT with DC to DC Converter for E-Vehicle Application](#)

V. Senthil Nayagam, L. Premalatha

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### [Operating Cost Analysis of Microgrid Including Renewable Energy Sources and a Battery Under Dynamic Pricing](#)

Hephzibah Jose Queen, J. Jayakumar, T. J. Deepika

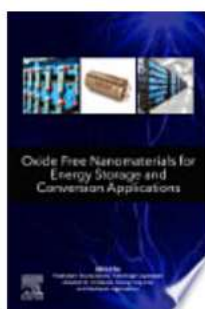
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M. Divya Bharathi, R. V. Maheswari, S. Senthil Kumar

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## Chapter 4 - Oxides free materials for symmetric capacitors

Govindhasamy Murugadoss <sup>a</sup>, Sunitha Salla <sup>b</sup>, Prabhakarn Arunachalam <sup>c</sup>

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### Abstract

Supercapacitors (SCs) are progressively used for energy transformation and storage systems in sustainable methodologies. SCs have attracted attention from many because of their storage capacity for a longer time and high energy density. This chapter presents scaled-down research on ongoing advancements of supercapacitor innovation. So far, the materials like spinel ferrites, e.g.,  $\text{MFe}_2\text{O}_4$ ,  $\text{MMoO}_4$ , and  $\text{MCo}_2\text{O}_4$  (where M denotes a transition metal ion), carbon materials, CPs, and transition metal sulfides (TMSs)

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### Chapter 3 - Fundamentals, basic components and performance evaluation of energy storage and conversion devices

Durai Govindarajan and Karthik Kumar Chinnakutti

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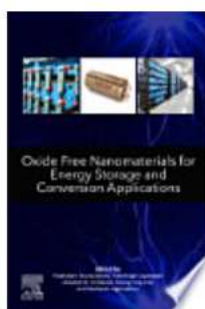
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An extensive global increase in the energy demand from the worldwide economy's continuous growth has caused the following issues: the major one being the depletion of fossil-fuel stocks and the other is related to an upsurge in greenhouse gas emissions in specific and ecological problems in general. The future of energy sources is determined by advanced breakthroughs in designing a cost-effective, sustainable, and efficient system for converting and storing renewable energy sources (Theerthagiri et al. [1]; K...

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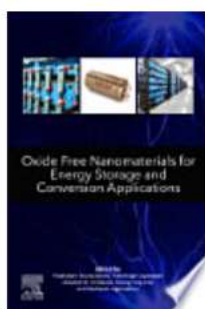
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## Chapter 9 - Oxides free materials as anodes for zinc-bromine batteries

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Energy storage systems, energy can store in the method of chemical, thermal, electric, or kinetic is absorbed and kept for a while before releasing it to provide energy or power services. The main utilization of the e

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## Chapter 8 - Oxides free materials as anodes for sodium-ion batteries

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Meenakshamma Ambapuram, Gurulakshmi Maddala and Raghavender Mitty

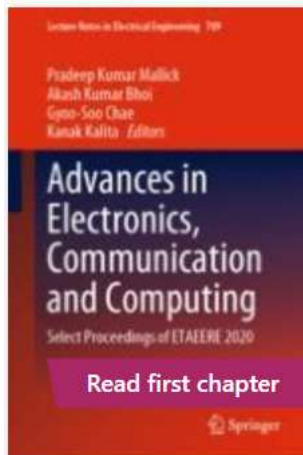
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# Options-Based Sequential Auction for Dynamic Cloud Resource Allocation

Authors : Yerrapureddy Uday Kumar Reddy, Yerra Sudheer, S. L. Jany Shabu, J. Refonaa, P. Sardar Maran

Published in: [Advances in Electronics, Communication and Computing](#)

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## Abstract

The contemporary arrangement on cloud asset movement is regularly centered around considering the relationship among clients and cloud boss. Considering, the consistent improvement in the clients' requesting and the rising of private cloud suppliers (CPs) attract the cloud supervisor to lease additional assets from the CPs in order to deal with their amassed assignments and pull in more clients. This likewise

**Authors**

Yerrapureddy Uday Kumar Reddy

Yerra Sudheer

S. L. Jany Shabu

J. Refonaa

P. Sardar Maran

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## Options-Based Sequential Auction for Dynamic Cloud Resource Allocation

### Abstract

The contemporary arrangement on cloud asset movement is regularly centered around considering the relationship among clients and cloud boss. Considering, the consistent improvement in the clients' requesting and the rising of private cloud suppliers (CPs)

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Organizations have known about the significance of Quality of Service (QoS) for seriousness for quite a while. It has been broadly perceived that work process frameworks are an appropriate answer for dealing with the QoS of procedures and work processes. The

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[Marykutty Abraham](#), [Priyadarshini](#) & [Kavisri Manikannan](#)

Chapter | [First Online: 28 May 2021](#)

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Quantity and quality of groundwater is deteriorating due to various reasons. Assessment of efficiency of artificial recharge structures in recharging the aquifers is essential for sustainable groundwater management. Calibrated groundwater models are essential for accurate estimation of recharge and to assess its spatial and temporal distribution. A finite-difference model was developed using MODFLOW, and the modeled head contours for various scenarios such as check dam, pond, and combined structures were compared with the head contours without artificial recharge. Rise in water levels was obtained to be 3.46, 2.54, and 4.7 m, respectively, for check dam, pond, and combined structure area after 2 years of artificial recharging. The radial influence zones for check dam, pond, and combined structures were 400, 600, and 500 m, respectively. The additional recharge caused an increase in water level of around 2 m in the wells, in the vicinity of the structures, which were

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[Pathuri Revanth](#) , [P. Venkata Krishna](#) & [A. C. Santha Sheela](#)

Conference paper | [First Online: 21 January 2021](#)

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Right now, characterize every one of those viewpoints as a component of item, and present a multi-dimensional feeling investigation approach for E-business audits. Specifically, we utilize an assessment dictionary growing system to evacuate the word uncertainty among various measurements, and propose a calculation for estimation investigation on E-business audits dependent on rules and a dimensional feeling vocabulary. Make word net lexicon: In this sort of archive, every single positive word are worked out independently and every negative word are worked out at one spot. Extraction of dataset: First dataset of openly accessible item audits were downloaded from the web and afterward the entry extraction structure recognizes significant areas of the content which is generally illustrative of the substance of the record. All the more explicitly, this progression includes distinguishing and extricating those particular item

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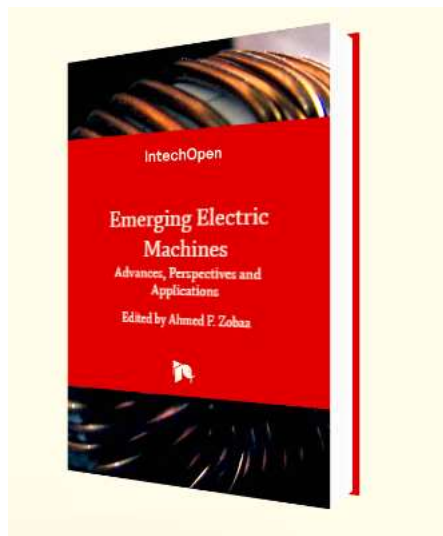
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## Abstract

This chapter aims in presenting the methods for the accurate estimation of highly non linear phase inductance profile of a switched reluctance motor (SRM). The magnetization characteristics of a test SRM is derived from the SRDaS (Switched Reluctance Design and Simulation) simulation software. Statistical interpolation based regression analysis and Artificial Intelligence (AI) techniques are used for developing the computationally efficient inductance model. Multi Variate Non linear Regression (MVNLR) from the class of regression analysis and Adaptive Neuro Fuzzy Inference System (ANFIS) under the class of AI are implemented and tested on the simulated data. Non linear Inductance profile  $L(I, \theta)$  of SRM is successfully estimated for the complete working range of phase currents ( $I_{ph}$ ). At each  $I_{ph}$ ,  $L(I, \theta)$  values are estimated and presented for one cycle of rotor position ( $\theta$ ). Estimated inductance profile based on the two proposed methods is observed to be in excellent correlation with the true value of data.



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WRITTEN BY

Susitra Dhanarajalu



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Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 690)

## Abstract

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The quantity of more seasoned individuals in western nations is continually expanding. The greater part of them like to live freely and are defenceless to fall episodes. Falls frequently lead to genuine lethal wounds which are the main source of ending life for senior individuals. To describe this issue, it is common to create strong fall identification frameworks. Right now, build up an AI structure for fall discovery and day by day living action recognition. The tale system is an AI framework for fall location and action acknowledgment. Right now, have proposed an AI approach for fall location and day by day movement acknowledgment. Calculated Regression is utilized in perceiving the exercises falling, strolling, strolling upstairs, strolling ground floor, sitting, standing, and lying dependent on the quickening and the rakish speed information. All the more especially, we utilize the mean estimation of the triaxial speeding up and

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Selvi, M., Reddy, K.A., Manideep, K.V. (2021). Mining Overlapping Communities in Real-World Health Data. In: Priyadarshi, N., Padmanaban, S., Ghadai, R.K., Panda, A.R., Patel, R. (eds) Advances in Power Systems and Energy Management. ETAEERE ETAEERE 2020 2020. Lecture Notes in Electrical Engineering, vol 690. Springer, Singapore.  
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Metal Matrix Composites (MMCs) are materials produced by adding reinforcement in the form of particles (ceramic or metal), fibers, whiskers or even a sheet metal to a metal or alloy matrix. MMCs possess unique combination of properties such as high strength, wear resistance, corrosion resistance, etc., that far exceeds that of the monolithic parent materials. The success of the MMCs in industry is based on their capability to be fabricated into structures and components. This is not feasible without them being joined using welding and the allied processes. The presence of reinforcement

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By *M.R. Ebenezar Jebarani, P. Kavipriya, S. Lakshmi, Nehru Kandasamy*

Book [Industry 4.0 Interoperability, Analytics, Security, and Case Studies](#)

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| First Published | 2021          |
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### ABSTRACT



Internet of Things (IOT) is a network-based technology that consists of hardware devices for automobiles, buildings, home automation, and added items that are embedded with hardware and software which provide network connectivity. IOT based agriculture technology is used to create a high range of production efficiency. IOT-based techniques are of great significance in the modern era, which makes it a little bit complicated to deal with security issues which are quite complex. IOT based application products have been developed and explored by various researchers using various algorithms. The model proposed is aimed to develop a smart irrigation system which could offer farms a perfect atmosphere. A system that was used to collect, process, and store disseminated data in the form of information required to execute the farm's operational functions is called a Farm Management Information Systems.

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# IoT-Based Traffic Congestion Monitoring and Theft Alarm

[A. Preetha](#) , [S. Gayathri](#) & [A. C. Santha Sheela](#)

Conference paper | [First Online: 21 January 2021](#)

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Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 690)

## Abstract

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In this day and age, roads grew to become parking so much throughout times of heavy visitors is one of the important considerations. During occasions of heavy traffic, crisis cars like ambulances, squad vehicles and fire unit vans stall out in jams. Because of this, these disaster vehicles don't seem to be in a position to reach their targets in time, coming about into lost human lives. We have built up a framework that is applied to offer freedom to any disaster vehicle by way of turning the entire red lighting fixtures to green at the means of the disaster car, henceforth giving a total green wave to the ideal automobile. Notwithstanding the fairway wave manner, the framework will practice a taken automobile when it goes via traffic gentle. In this manner, that is the self-managing 2-degree architecture that works within distinguishing evidence for crisis automobiles or any wanted automobile. It is a singular framework which can be utilized to execute the theory of the green wave.

### Cite this paper

Preetha, A., Gayathri, S., Santha Sheela, A.C. (2021). IoT-Based Traffic Congestion Monitoring and Theft Alarm. In: Priyadarshi, N., Padmanaban, S., Ghadai, R.K., Panda, A.R., Patel, R. (eds) Advances in Power Systems and Energy Management. ETAEERE ETAEERE 2020 2020. Lecture Notes in Electrical Engineering, vol 690. Springer, Singapore. [https://doi.org/10.1007/978-981-15-7504-4\\_66](https://doi.org/10.1007/978-981-15-7504-4_66)

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# Chapter 1 - Human body interaction driven wearable technology for vital signal sensing

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## Abstract

The specifications for wearable equipment range from soft to difficult real-time restrictions. Hardware enhancements are also a means of accelerating the solution's global efficiency. Changing some parts or the entire hardware can however increase the complexity of systems, increase the costs, and lead to product production delays or test prototypes. With the advent of wireless technology and progress in the onboard design of sensors, the tra

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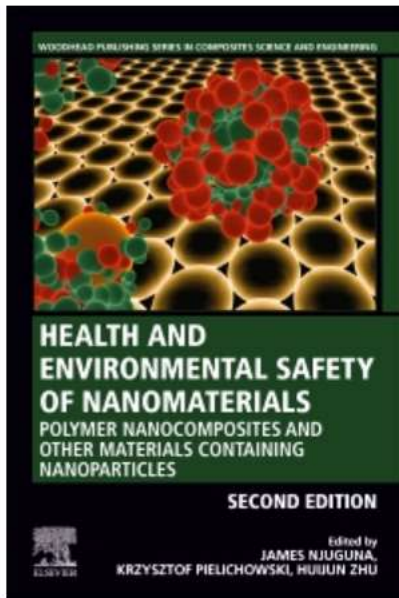
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# 8 - Nanomaterials at industrial workplace—an overview on safety

Vinita Vishwakarma

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## Abstract

Nanomaterials have been widely utilized over the past decade. With the dimension between 1 and 100 nm, nanomaterials have different physicochemical characteristics compared to bulk materials, which are desirable for their application in many areas. There are many methods available for the synthesis, characterization, and modification of nanomaterials. This makes them allure to different industries, such as medical, pharmaceutical, food, agriculture, textile, cosmetics, and construction, to incorporate nanomaterials in their products. It is challenging to recognize the release of nanoparticles from these products to the environments. The hazardous nature of nanomaterials is based on their chemical composition.

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7. A life cycle perspective of the exposure to airborne nanoparticles released from nanotechnology enabled products and applications

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**Part III Safety of particular type of nanomaterials**

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# Handbook of Solid Waste Management

Sustainability through  
Circular Economy

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# E-Waste Management: Rising Concern on Existing Problems, Modern Perspectives, and Innovative Solutions

[Ravichandran Subramaniam](#), [Kamarajan Rajagopalan](#), [Melinda Grace Rossan Mathews](#), [Jackson Durairaj Selvan Christyraj](#) ✉ & [Johnson Retnaraj Samuel Selvan Christyraj](#) ✉

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## Abstract

Electronic and electrical wastes (e-waste) are generated from used electrical and electronic gadgets, after their lifetime or discarded for the reason of upgradation. The rapid growth in population causes 20–50 million tons of e-waste generated worldwide. Components of electrical and electronic waste include circuit boards, batteries, cathode-ray tubes, plastic casings, activated glass, and lead capacitors which are also classified in the category of e-waste. E-waste is highly hazardous to human health, and obviously it exhibits inherent mutagen to all living populations. Importantly, the possible risk of fetus perturbations and child neurodevelopmental problems affects the people living in informal e-waste recycling sites. E-waste recycling consists of the following processes: collection of e-waste from the source site, preprocessing, recovery of reusable materials, and final disposal of nonrecyclable residues. The clarification of unexplored areas (e-waste) of individual countries, amelioration of e-waste-tracking management system, identification of key barriers, and integrated

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# Data Intelligence and Cognitive Informatics

Proceedings of ICDICI 2020

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# Hand Gesture Recognition Control for Computers Using Arduino

[J. S. Vimali](#) , [Senduru Srinivasulu](#), [J. Jabez](#) & [S. Gowri](#)

Conference paper | [First Online: 09 January 2021](#)

**719** Accesses | **2** Citations

Part of the [Algorithms for Intelligent Systems](#) book series (AIS)

## Abstract

With the change in time, new technologies are coming into existence. One of them is hand gesture control used by robots. Hand gestures are used to give commands as an input to these robots. These gesture controls are used as input devices to computer systems. These existing systems are costly and unaffordable by general uses. The idea proposed in the article is to make a cheaper version of a hand gesture controller using the Arduino board. The input is given with the help of a pair of ultrasonic sensors. The sensors are used to calculate the changes in the distance of our hand movements while giving the gesture. The Arduino will calculate the changes in distance and recognize the action done by the user. The Arduino will request the system processor to perform the requested action by the user. The time taken to perform basic operations like open, minimize, maximize, play, save, etc., operations are reduced because of this proposed model.

### Cite this paper

Vimali, J.S., Srinivasulu, S., Jabez, J., Gowri, S. (2021). Hand Gesture Recognition Control for Computers Using Arduino. In: Jeena Jacob, I., Kolandapalayam Shanmugam, S., Piramuthu, S., Falkowski-Gilski, P. (eds) Data Intelligence and Cognitive Informatics. Algorithms for Intelligent Systems. Springer, Singapore. [https://doi.org/10.1007/978-981-15-8530-2\\_45](https://doi.org/10.1007/978-981-15-8530-2_45)

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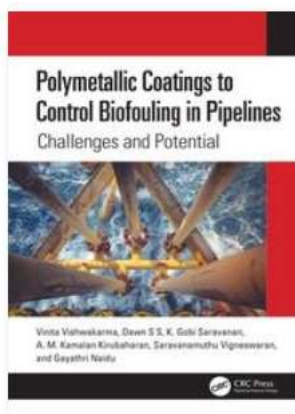
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# Polymetallic Coatings to Control Biofouling in Pipelines

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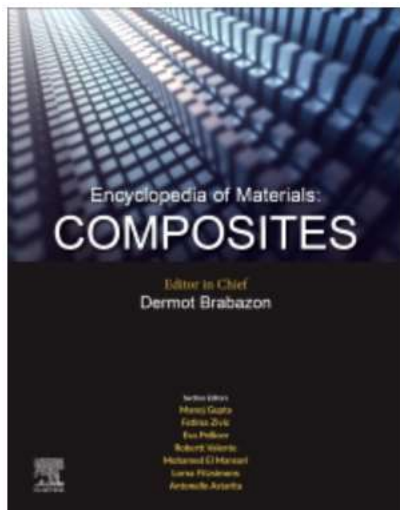
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### ABSTRACT



This chapter introduces the economic impact the oil/gas and biofuels have on the energy sector. A detailed compilation of the global scenario has been given. The role of these energy-deriving materials in the economic growth and fall of a country has been critically reviewed. The mechanisms of transporting oil/gas and biofuels and the various reasons causing biofouling have been analyzed. Fouling causing and controlling factors have been highlighted. Biofouling a challenging phenomenon though inevitable when detected early can reduce the heavy investments on cleaning of the pipelines, which emerges as a huge challenge in the fuel transportation sector.





# Friction Stir Processing of Metal Matrix Composites

V.K. Bupesh Raja, Manoj Gupta

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## Abstract

Properties of materials including metal matrix composites (MMCs) can be enhanced using innovation in processing techniques. The processing techniques can be classified into primary and secondary processing techniques. Much work is done in primary processing of materials to enhance the properties of MMCs and more innovations are surfacing in secondary processing of these materials due to inherent limitations of all primary processing techniques. One such innovative technique is friction stir processing which has the capability of improving

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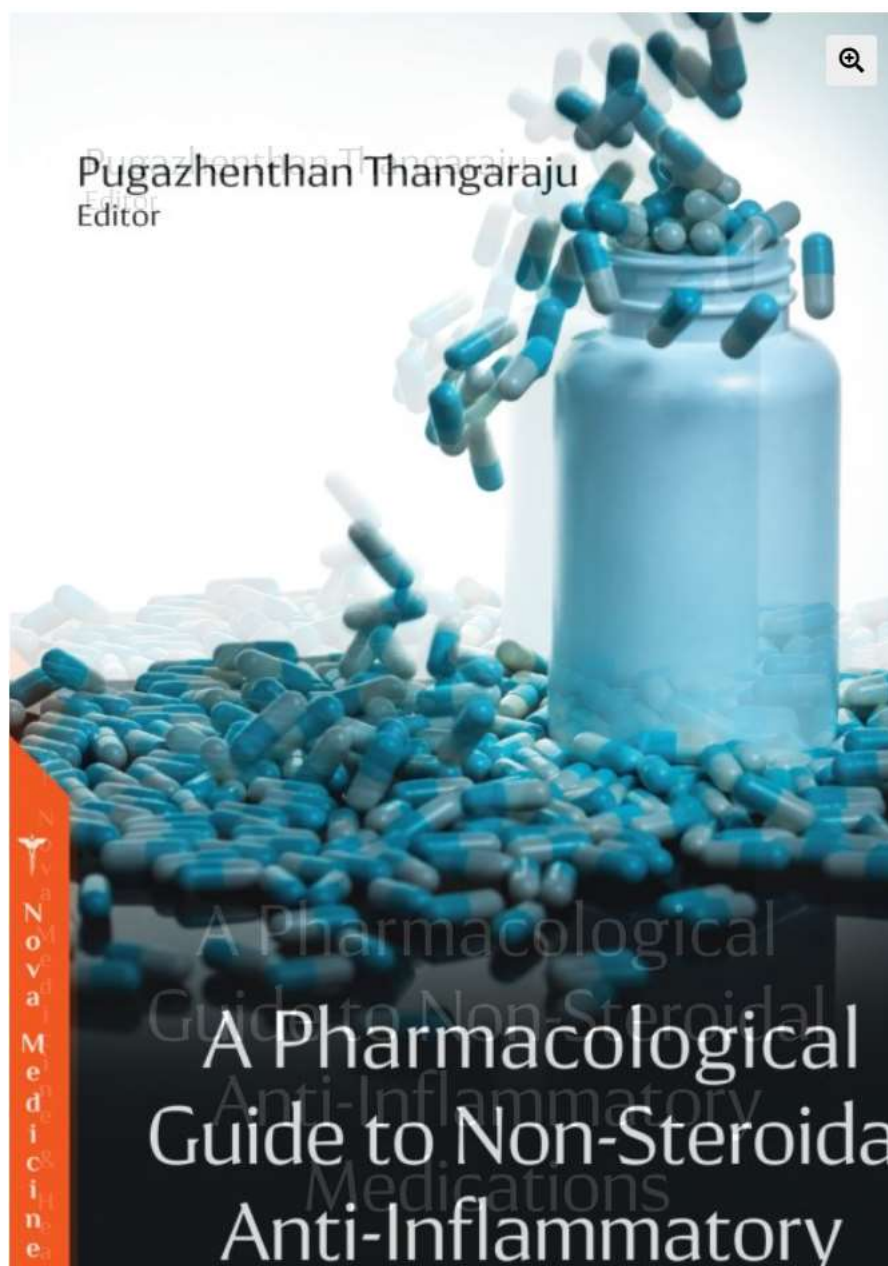
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Sciences, Raipur, India, et al.)

## Chapter 3. Fixed Dose Combinations (FDCs) of NSAIDs

(Ray, R. S., Vijayakumar, A. R., Pugazhenthana, T. and Delhiraj, N. – Scientific Assistant,  
Indian Pharmacopoeia Commission, MoHFW, GoI, Ghaziabad, Uttar Pradesh, India, et  
al.)

## Chapter 4. NSAIDs Poisoning

(Chaitanya Mittal, Shoban Babu Varthya and Ajay Kumar Kondeti – Senior Resident,  
Department of Forensic Medicine and Toxicology, AIIMS, Jodhpur, India, et al.)

## Chapter 5. NSAIDs and the Aged: Are We Being Frivolous about the Frail?

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Department of Pharmacology, All India Institute of Medical Sciences, Raipur, India, et  
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## Chapter 6. NSAIDs in the Paediatric Population

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# Finding Smelly or Non-smelly Using Injected and Revision Method

[B. Suresh](#)  & [A. C. Santha Sheela](#)

Conference paper | [First Online: 20 March 2021](#)

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Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

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Code smells are simple programmatic qualities, which can indicate a code or plan problem that makes programming difficult to develop and maintain, and which can cause code refactoring. Late research is dynamic in characterizing programmed discovery instruments to help people in discovering smells when code size gets unmanageable for manual audit. Since the meanings of code smells are casual and emotional, evaluating how viable code smell identification apparatuses are is both significant and difficult to accomplish. This paper audits the present scene of the devices for programmed code smell identification. It characterizes explore inquiries regarding the consistency of their reactions, their capacity to uncover the locales of code generally influenced by basic rot, and the importance of their reactions concerning future programming development. It offers responses to them by breaking down the yield of four agent code smell

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## Evolution of Electronic Health Records

G. Umashankar ✉, P. Abinaya, J. Premkumar, T. Sudhakar, S. Krishnakumar

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 About



PDF



### Summary

IoMT is a connected infrastructure of medical devices, software applications health system, and services. The following is integrated in various forms of medical applications. The evolution of IoMT starts from the 1500 and the era still has a dramatic growth. The evolution of electronic health records (EHRs) began in the 1960s and has its own importance in the future. The EHRs automate and streamline the clinician's workflow and make the process easy. It has the ability to generate the complete history of the patient and also help in assisting for the further treatment which helps in the recovery of the patient in a more effective way. The EHRs are designed according to the convenience depending on the sector it is being implemented. The main aim of EHRs was to make it available to the

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Advances in Intelligent Systems and Computing 1317

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# Cognitive Informatics and Soft Computing

Proceeding of CISC 2020

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# Estimation of Vehicle Count, Class, and Speed on Highways Using a Computer Vision-Based Technique

[P. Asha](#), [S. Prince Mary](#), [D. Usha Nandhini](#) & [Sathyabama Krishnan](#)

Conference paper | [First Online: 02 July 2021](#)

**447** Accesses | **1** Citations

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## Abstract

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Real-time traffic flow analysis is beneficial for the extraction of vehicle-based information which can be used for further data predictions. Apply computer vision-based techniques on a video feed obtained from a mounted camera over a highway; the vehicle-related events such as count, class, and speed can be cognized. Background subtraction is employed to locate the motion of the vehicles. The moving vehicles are seen as white blobs after thresholding the video frame. Further processing of the blobs and their behavior can give way to the tracking of the vehicles along with their mentioned events.

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# Effect of Print Media Advertising Towards Car Buying Behaviour Among Customers in Salem District

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## Effect of Print Media Advertising Towards Car Buying Behaviour Among Customers in Salem District

R .Pugalendhi <sup>1</sup>, Dr.S.Janet Mary <sup>2</sup>

<sup>1</sup>Department of Visual Communication, Sathyabama Institute of Science and Technology, Chennai.

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### ABSTRACT

The automobile business is one of the biggest trades in India and its growing gradually each year. Most of the people are buying cars and other vehicle according to their capacity of income, generally car selling and buying occurred through advertisements. Print and Electronic medias are contributing lot for selling and buying the any products, especially automobile's marketing depending on Print media ads means Newspaper Advertising. This paper indulges in studying the buying behaviour of cars in Salem District in Tamilnadu. As a dealer a person who needs to know that how consumers make decisions for buying a particular product. One of the main tools of advertisement media is newspaper. This tool for advertisement which is easily reachable to the people and where almost all the marketers can market their product. This study focused on the effect of newspaper advertisement on consumer buying behaviour specifically on the buyer of the car.

**Keywords:** Print media Advertising, Car buyer, Customer, Salem District, Car buying Behaviour

### I-INTRODUCTION

Advertising is a means by which non-personal information about products (goods, services, or ideas) is communication in a structured and composed manner. It is usually paid for by a known entry. You have been reading, watching, listening to and looking at advertising since you were a child. Motor vehicle industry is well-advised and one of the primary industries related to construction industry as it offers the opportunity to grow up with it. The car trade depends on the electronics, electrical, steel industry, glass and plastics industries etc. In India the first car purchased by Maharajas and British rulers during the British era in 1898. Until the 1930s, there were no local production of cars but cars were imported directly, albeit in very small numbers. After 20 years, an import substitution programme was launched, which focused on manufacturing all the parts locally as a result the import of fully built-up new cars. The government of India enhanced the import protection measures and restrictions for import of cars and after 1970 the automobile commerce started to grow, but the growth was mainly driven by tractors, commercial vehicles and scooters. During 1970s and 1980s cars were considered as a luxury item. In the 1970s price were raised, inserting a competitive element into the



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R. Balasubramaniam ·  
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Prashant M. Pawar · R. Balasubramaniam ·  
Babruvahan P. Ronge · Santosh B. Salunkhe ·  
Anup S. Vibhute · Bhuwaneshwari Melinamath  
Editors

# Techno-Societal 2020

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**Abstract:**

Coronavirus, which is recently declared as a pandemic outbreak is initially started in Wuhan, China in the month of December, where it has extended towards every edge of the globe. Many individuals across the globe are affected by the virus, and countless others have passed away. There are about 116 million cases, and the population is yet to be treated. The study and progress in the research of coronavirus have reduced researchers' ability to get relevant information from the internet. As mutations of infections and microbes are inescapable, the danger for such pandemics still remains high. To guarantee that, the harm is done is lesser, where a literature clustering technique can be used to group the relevant information together by making accessibility easier for researchers and enthusiasts. Furthermore, k-means clustering is used for labeling the clusters and principal component analysis for dimensionality reduction, t-SNE for better visualization, and a scatter plot may be used to represent the grouped collection of literature. On this bokeh plot, articles that are similar share a tag, whereas articles that are not similar are placed so far apart. Latent Dirichlet Allocation will be used to extract keywords from each cluster in order to find credibility in the groups.

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**Abstract:**

Health is the most important in every human's life. Weekly or monthly check up of one's health is most important for the prevention and also to stay healthy. Healthcare is the most crucial parts of the human life. Nowadays, so many are not willing to go to hospital, due to work overload and negligence of their health. The doctors and nurses are putting up maximum efforts to save people's lives without even considering their own loves. There are also some villages which lack medical facilities. Nowadays, the individual is not having that much time to go for health check-up. Recently, due to covid-19, no one is willing to go to hospital for health checkup due to the fear of spreading virus. In this situation, technology plays an important role. The domain we used here is Machine Learning, it is the technique by which machines can learn from past experiences like a human being and make it efficient in future. ML is the domain which is widely used nowadays and it is the most efficient domain in health care. We will develop a GUI to get the symptoms from the user. The models used in this paper are Naive Bayes and Decision Tree. The output is the disease, the accuracy of model, its definition and the treatment of the particular disease based on the symptoms given by the individual. As we all know the saying which tells that "Prevention of the disease at an early stage is much better than the cure which we take after we get affected by the disease". This paper shows detailed explanation of how to find the diseases from symptoms, so that the individual can contact the respective doctor and stay healthy at an early stage.

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# Diabetic Retinopathy Detection

[Athota Manoj Kumar](#) , [Atchukola Sai Gopi Kanna](#) & [Ramya G. Franklin](#)

Conference paper | [First Online: 20 March 2021](#)

**201** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

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Diabetic retinopathy is a problem with diabetes which affects the eyes. It is caused by damage to the light-touchy tissue veins at the back of the eye (retina). Diabetic retinopathy may not cause any side effects or simply mellow vision problems from the onset. It can be causing visual impairment in the long run. The quantity of specialists contrasted with the quantity of patients in India is very low which prompts deferred analysis of different maladies. However, deferred conclusion of diabetic retinopathy prompts irreversible harm to eyes, further prompting total lasting visual deficiency. This ailment can be dealt with, however, the harm isn't totally reversible. To stay away from this circumstance, we chose to robotize the procedure of analysis by utilizing AI. The expansion in cases of diabetes restrains current manual testing ability. Nowadays, new calculations for helped analysis are proving significant. Early diabetes exploration will benefit patients and reduce the terrible results of well-being, such as visual impairment, so we use the measurement of support vector machine (SVM) to group the removed histogram. A binning program with a histogram for highlights portrayal is

Studies in Computational Intelligence 936

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# Technical Advancements of Machine Learning in Healthcare

 Springer



# Development of Algorithm for Precise Movement Controller for Robotic Arm

[S. Lalithakumari](#)  & [R. Pandian](#)

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## Abstract

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Robotics and automation play a vital role all around and it emerges in the medical field also. Movement control of the robot moved well beyond its conventional uses in manufacturing. Medical devices, automotive robotics electronic gadgets benefited from motion control subsystems due to the advantages such as less cost, power saving. The critical elements are complexity of the electronics and embedded software for motion control. It is very essential to care about the proper accuracy and precision. Many research works have been implemented in order to achieve the accuracy and precision. But maintaining the precision of the movements of medical robotic arm controller is a challenging task. This work addresses this problem and enumerates a suitable proposed work in order to overcome this. The suitability of the proposed work, which employs Image processing, Deep learning network is well authenticated by developing a hardware model.

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Hrudaya Kumar Tripathy  
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# Technical Advancements of Machine Learning in Healthcare

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# Development of Algorithm for Distinguishing of Malignancy in Computed Tomography Lung Using Feature Extraction and Artificial Neural Network

R. Pandian  & S. Lalithakumari

Chapter | [First Online: 28 February 2021](#)

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## Abstract

Prior conclusion of malignancy cell development prompts spare bunches of valuable human lives. It is important to build up some mechanized instrument, so as to distinguish dangerous state toward the starting stage itself. Numerous calculations had been proposed before by numerous analysts previously, at the same time, the exactness of forecast is consistently a difficult undertaking. In this work, a counterfeit neural system based philosophy is proposed to locate the irregular development of lung tissues. Higher likelihood of discovery is taken as a target to get a robotized apparatus, with extraordinary exactness. Manual translation consistently prompts misdiagnosis. An undeniable Computer Tomography picture set of lung of 10 unique people, with typical and threatening wellbeing states have been considered in this work. The three unique perspectives on the CT examining framework, for example, pivotal, coronal, and sagittal have likewise been considered in the information base creation. Unmistakable textural highlights of the pictures give an intra class variety in its temperament, make a neural system, plausible for order of the typical pictures, recognizing ceaselessly from the threatening ones. Ideal capabilities got from Haralick Gray level co-event Matrix and utilized as the measurement decrease path for taking care of neural system. In this work, a paired Support Vector Machine Neural system has been proposed to recognize the typical pictures out of the considerable number of pictures. The capacity of the proposed neural system has been quantitatively processed utilizing disarray grid and found as far as

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# Advances in Smart Grid and Renewable Energy

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# Detection of Ransomware Based on Recurrent Neural Network (RNN)

[Saketh Kanumuri](#), [Vinay Teja Kantipudi](#), [A. Viji Amutha Mary](#)  & [Mercy Paul Selvan](#)

Conference paper | [First Online: 05 January 2021](#)

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## Abstract

Ransomware, as a specific type of malignant programming, has as of late rose as a significant danger in PC security. With a capacity to bolt out client access to their substance, late ransomware assaults have caused serious effect at an individual and hierarchical level. Explicit auxiliary properties of ransomware can additionally improve the nature of discovery. In a past report into real-time new/variation/obscure ransomware identification in a PC domain, significant documents are observed and just projects that have been recently broke down and assessed as no malicious are permitted. Be that as it may, issues can happen, the powerfulness to identify new/variation/obscure ransomware identification within a domain, significant documents were observed and assessed as no malicious are permitted. Thusly, programs that have not been dissected are confined from getting to significant documents. Right now, adjust the profound learning techniques utilized in malware discovery for recognizing ransomware from copying successions. We present specific intermittent neural systems for catching neighbourhood occasion designs in ransomware arrangements utilizing the idea of consideration instruments. We show the presentation of upgraded LSTM models on a

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Sustainable Textiles: Production, Processing,  
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Subramanian Senthilkannan Muthu  
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# Advanced Removal Techniques for Dye-containing Wastewaters

 Springer

# Dead or Living Biomass Performance for the Removal of Dyes

[Anjali Prasad](#), [D. Venkatesan](#) & [J. Aravind Kumar](#)

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## Abstract

The presence of a vital resource such as water distinguishes our Earth from other planets. Out of the total amount of water present on the earth's surface, only about 3% accounts for the freshwater which is fit for drinking. Setting aside the two-thirds of this freshwater that remains frozen in ice-caps and glaciers, only about 1% remain available for human use, making it the most precious natural resource. Water, being a universal solvent, can easily dissolve more substances when compared to any other liquid on earth, hence, making it vulnerable to contamination by various aquatic pollutants. Among these pollutants, the presence of dyes in water channels has become a growing concern among environmental scientist. Dyes, known to be in use since 3500 BC, are colored substances that are capable of chemically binding to the substrate to which it is being applied. A number of industries such as textile, cosmetic, plastic, and paper-making industries use different types of dyes in their processes. Colored effluents discharged by these industries into the water bodies gives rise to both direct and indirect consequences to aquatic habitat. The former includes attenuation of the oxygen levels dissolved in water, exhaustion of re-oxygenation capacity, percolation of dyestuff into groundwater from the soil. decreased penetration of light into water which impedes

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Sabu M. Thampi · Erol Gelenbe ·  
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# Advances in Computing and Network Communications

Proceedings of CoCoNet 2020, Volume 1

# Convex Combination of Maximum Versoria Criterion-Based Adaptive Filtering Algorithm for Impulsive Environment

[S. Radhika](#) , [A. Chandrasekar](#) & [K. Ishwarya Rajalakshmi](#)

Conference paper | [First Online: 21 April 2021](#)

**356** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 735)

## Abstract

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This paper elaborates convex combination approach of two maximum versoria criteria-based adaptive filters for impulsive environment. The maximum versoria criteria-based adaptive filter performs better than minimum mean square error and maximum correntropy criteria under impulsive environment. The main drawback with the current approach is that there is trade-off in the speed of convergence and steady-state mean square error. In order to overcome this trade-off, convex combination method is adopted in this paper. A new update rule is also proposed to make the algorithm to have more robustness. Experiments were conducted for echo cancellation and system identification applications to validate the performance improvement of the proposed approach.



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# Advances in Electronics, Communication and Computing

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# Classification and Mapping of Adaptive Security for Mobile Computing

J. Refonaa , S. L. Jany Shabu, S. Dhamodaran, Battula Mythili & Bikki Vineetha

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## Abstract

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Within the paper, we examine how to place mobile phones on behalf of permitting correspondences in a fiasco reconvert via connecting the holes amid different types of isolated system. We include structured as well as actualized android applications. In this application, we use this to convey to other colleagues simple to approach to impart utilizing distributed storage; in this module, client transfer the catastrophe area and other client will see the calamity area and get the specific area in map. It sees and gives cell phones the capacities of interchanges in misfortune recuperation such a assembling of mobile phones. This will be able to cooperatively stir up and about in addition to express disaster communication during a energy industrious method through their locale in addition to location information during sort in the direction of assist salvage activities. This application will likewise give the close by clinics and fire station and police headquarters. We group telephone numbers as a replica function so that it can take over the advanced android cells. Exploratory outcomes exhibit that group telephone can suitably assure association necessity besides extraordinarily support salvage activities during misfortune healing.



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# Handbook of Polymer and Ceramic Nanotechnology



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# Ceramics and Nanoceramics in Biomedical Applications

[A. Nandhini](#), [T. Sudhakar](#)  & [J. Premkumar](#)

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## Abstract

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A ceramic is an inorganic nonmetallic solid made up of either metal or nonmetal compounds; they are hard, corrosion-resistant, and brittle. Ceramics are also known as bioceramics, which include macro- and nanomaterials mainly used for bone, dental, and medical applications. The more restrictive term porcelain refers to a specific compositional range of ceramic materials originally made by mixing kaolin (hydrated aluminosilicate), quartz (silica), and feldspars (potassium and sodium aluminosilicates) and firing at a high temperature. Nanostructured ceramics are being considered for major use in orthopedic, dental, and other medical applications. Bioceramics are a class of advanced ceramics that are defined as ceramic products or components employed in medical and dental applications, mainly as implants and replacements. Bioceramics are materials which include alumina, zirconia, bioactive glass, glass

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# Nanomaterials and Their Biomedical Applications



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# Automatic Melanoma Diagnosis and Classification on Dermoscopic Images

[Bethanne Janney, J. S. Emalda Roslin & J. Premkumar](#)

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## Abstract

Automatic identification of skin carcinoma is significant. The dangerous types of cancer found in humans are skin cancer. Melanoma is the deadliest type of skin cancer. Healing can be beneficial on early diagnosis of melanoma. This paper aims to propose a skin cancer diagnosis algorithm that can automatically classify lesions as malignant or benign. Segmentation is done in the initial phase after choosing the finest image development methods accomplished by applying and comparing various noise removal filters on images. A perfect optimized segmentation methodology relies on thresholding, watershed algorithms are implemented on dermoscopy images, and the differentiated object is derived for GLCM attributes and qualitative techniques. To identify malignant or benign samples, the attributes are therefore

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# Attribute-Based Encryption in Multi-owner Setting

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## Abstract

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Measure structure framework attempt to apply based directory listing allows search questions and supports encoded information at a decent pace in the fine-grained cloud location. In any event, earlier CP-ABKS plans were used to support in reality, unexpressed tri-owner frameworks cannot be legally related to the tri-owner setting), in the absence of acknowledging higher computing cost and point of confinement value. What is more, because of security weights on find a workable pace, existing plans are vulnerable against isolated keyword guessing ambushes if the keyword range is of larger space. Likewise, it will be hard to see malevolent clients that releases riddle keys when many information client has a relative subset of chrematistics. At this moment, present a security saving CP-ABKS framework with camouflaged access approach in shared multi-owner setting (essential ABKS-SM structure), and show how it is improved to help hurtful client following (adjusted ABKS-SM framework). We can show that by ABKS-SM structures accomplish explicit certainty, negate isolated keyword hypothesizing snare in the standard bilinear party model. We moreover assess their introduction utilizing authentic world datasets.

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## An Internal Adversary Model to Prevent Selective Jamming Attacks

Ankinapalli Uma Maheswara Reddy, Agepati Sai Hareesh, B. Ankayarkanni  
Pages 591-597

# An Internal Adversary Model to Prevent Selective Jamming Attacks

[Ankinapalli Uma Maheswara Reddy](#) , [Agepati Sai Hareesh](#) & [B. Ankayarkanni](#)

Conference paper | [First Online: 21 January 2021](#)

**299** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 690)

## Abstract

Wireless networks have an open nature that will lead to jamming. Jamming attacks will lead to denial of examining attacks. Normally we address a conundrum of jamming attacks as an outer one but large amount intimidation is an inner attack, everywhere the jammer will be present inside and knows all the secrets and will attack the system. In such a scenario the jammer will be concentration on selectively important messages. We canister overcome this scenario via the authentic time envelope classification by containing the cryptographic parameters with a brute layer. In this defense, we also concentrate not merely on security purposes but also on computation and communication for further process.

## Keywords



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# An Efficient Predictive Framework System for Health Monitoring

[K. Praveen](#) , [K. V. Rama Reddy](#), [S. Jancy](#) & [Viji Amutha Mary](#)

Conference paper | [First Online: 20 March 2021](#)

**197** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

An electronic medical record is an expert document that contains all data created during the treatment procedure. The EMR can use different data groups, for example, numerical data, content, and pictures. Mining the data and knowledge covered up in the colossal measure of medical record data is a basic necessity for clinical choice help, for example, clinical pathway definition and evidence-based medical research. Right now, propose an AI-based system to mine the concealed prescription examples in EMR content. The structure methodically coordinates the Jaccard comparability evaluation, unearthly grouping, the adjusted latent Dirichlet allocation, and cross-coordinating among numerous highlights to discover the residuals that portray extra knowledge and bunches covered up in various viewpoints of exceptionally complex medicine designs. These techniques cooperate, bit by bit to uncover the hidden prescription example.



## About this paper



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Conference paper | [First Online: 05 January 2021](#)

**303** Accesses

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## Abstract

This paper describes an implementation of a trusted, self-sorted, open and natural nourishment recognizability framework dependent on blockchain and Internet of things (IoT) innovations, which includes all gatherings of a shrewd agribusiness biological system, regardless of whether they may not confide in one another. We use IoT gadgets to supplant manual chronicle and check whatever number as could be allowed, which can diminish the human intercession to the framework adequately. Right now, propose a blockchain enlivened web of things design for making a straightforward nourishment inventory network. The total design was acknowledged by coordinating a BARCODE-based sensor at the physical layer and blockchain at the digital layer. The BARCODE gives a one of a kind personality of the item and the sensor information, which helps continuously quality checking. For this reason, a little component size 900 MHz BARCODE coupled sensor was manufactured and exhibited for continuous sensor information obtaining.

## About this paper



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# An Efficient Approach for Patterns of Oriented Motion Flow Facial Gesture Classification Using Depth Video

[Akaveeti Saghline](#) , [Varanasi Vinay Krishna](#) & [B. Ankayarkanni](#)

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**305** Accesses

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## Abstract

We have a rule that proposes an exceptional segment depiction methodology by a substitution incorporate descriptor, Pattern of Oriented Motion Flow (POMF) from the optical stream data, to perceive the right outward appearance over the live video. The POMF forms absolutely uncommon angular development data and encodes the angular stream data with extended neighborhood surface little models. since it gets the spatial-common variations of face expression improvements in the optical streams and allows the USA to look at each nearby and all-inclusive structures, as it provides its quality in seeing face expression data. The POMF reference diagram is made useful to set up the enunciations model through the covered Markov model (HMM). So for the process of tutoring through HMM, the objective plan an area unit made by periods of codebooks abuse the K-mean agglomeration techniques. The presentation of a foreseen procedure has been evaluated over an RGB and significance camera-based accounts. Examination result shows that the foreseen POMF descriptors is additional intense in extracting facial information and gives prevalent request rates than different existing promising strategies.

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# Adsorption of Cadmium Heavy Metal in Water by Using Orange Peel

[B. Priyadharshini](#) & [Marykutty Abraham](#)

Conference paper | [First Online: 15 December 2021](#)

**231** Accesses

Part of the [Lecture Notes in Civil Engineering](#) book series (LNCE,volume 194)

## Abstract

Increase in industrial activities leads to serious environmental pollution like contamination of water with deposition of heavy metal. Cadmium is one of the most important parameter in heavy metal which is a more poisonous metal, therefore an effective removal of this metal is needed more. So, an attempt has been made to evaluate the potential of an orange peel as an adsorptive material for the removal of cadmium metal from the polluted water by using small-scale column study. The water samples were collected from the industrial area of Chrompet, Chennai. Orange peel was used as a natural adsorbent to reduce the heavy metal concentration and carried out on a mini-column study. The aqueous solution of cadmium metal was prepared and mixed with the adsorbent for further analysis. In adsorption tests, the different dosage of adsorbent was applied. The adsorbent was characterized with SEM analysis. The efficiency of concentration removal was plotted in both Freundlich and Langmuir isotherm graph. It shows that the isotherm values were from the range of 0.95 to 0.97, which was fitted to an isotherm graph for different dosage concentrations. The derived data showed that the orange peel used as an adsorbent was a promising technique that can reduce the cadmium level in the water.



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## Abstract

The extensive usage of Internet is the major cause of more cyber-attacks. And these attacks are mainly with IP spoofing. So, the IOT devices must be secured to stop the IP spoofing and that involves the authorization of the source address of IP packets which are received at the gateway. This is important to stop an user who is unsanctioned from utilizing the IP address as the flooding packets and source to the gateway. From then on, the assigned bandwidth to allow users is used. All unique file names and file attributes are registered daily by tenants on the virtual machine and from these file lists and IP events often import specific data into CSP. Then, the assessing task will be done by the TWCP for remaining everyday log details and mailing the security risk information to all the tenants. We designed and implemented the DTOS program (DNS TRAFFIC QUERY PROGRAM) to analyze the DNS traffic. The previous IP address and also the calculation of the next IP address were performed. The analyzing and the prediction of the IP address is done mainly in two important cloud computing providers and discovered that the real entropy given by the specified IP addresses is restricted. Here, we consider many predictive models, such as the Markov process model which produces prediction data of the addresses from the connected IP addresses.

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D. Jude Hemanth

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Proceedings of ICACT 2020



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## A Study on Image Hashing Techniques for Implementing Deduplication

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# A Study on Image Hashing Techniques for Implementing Deduplication

[G. Sujatha](#)  & [Jeberson Retna Raj](#)

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## Abstract

Image deduplication is an approach to avoid duplicate images to be stored in cloud, which is currently required to increase the efficient utilization of cloud storage. Most of the times, the images uploaded by different users of cloud storage service need not to be unique. There is a possibility of storing same images by different users. This may lead to poor usage of cloud storage. To find duplicates, various image hashing techniques are widely used. The purpose of this paper is to review various image hashing methods which are used to generate hash value of the images. Using the hash value, we can conclude the uniqueness of the image. This can be achieved by using the "collision resistance" property of hash value. To measure the feasibility, the general necessity for image deduplication in cloud is discussed in this work. Additionally, the performance of few selected image hashing methods is compared with respect to robustness and discrimination.

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# A Smart Sharing of Traffic Causes Information-Based Blockchain

[Gunda Nikhil](#) , [G. Vijaya Bhaskar](#) & [M. D. Anto Praveena](#)

Conference paper | [First Online: 21 January 2021](#)

**302** Accesses

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## Abstract

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Traffic info about the vehicular community is able to assist within the setup of smart site traffic managing, like car crash alerts, street building notices, as well as car owner path modifications to lessen site traffic congestion a bit earlier. Real-time site traffic info could effectively mirror the visitor's state within urbanized scenarios. Nevertheless, how you can develop effective real-time info discussing mechanism to accomplish the real-time going dynamic path and time estimation preparation continue to be a difficult issue. With this newspaper, we very first suggest a highly effective real-time site traffic info discussing mechanism according to a sent out commuter routes process, with reduced computing intricacy as well as a reduced amount of redundancy. Next, talking about today's site traffic info, a method is presented by us to calculate the going period via a spot within the highway system, referred to as traveling time estimation (TTE) that functions being a metric for track preparation. We have achieved the accuracy level of information about the traffic in real time on comparing with existing models.

## About this paper



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Mercy Paul Selvan, Repala Sai Sowmith, Puralasetti Dheeraj, S. Jancy  
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## Enabling Ternary Hash Tree-Based Integrity Verification for Secure Cloud Data Storage

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## A Robust and Intelligent Machine Learning Algorithm for Software Testing

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## Attribute-Based Encryption in Multi-owner Setting

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## Parkinson's Disease Detection Using Machine Learning Techniques

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## My Device—Fog: Integrative Mapping, Tracking, and Identification of Device Id, Location, and User Info

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# A Robust and Intelligent Machine Learning Algorithm for Software Testing

[M. Tejo Vinay](#) , [M. Lukeshnadh](#), [B. Keerthi Samhitha](#), [Suja Cherukullapurath Mana](#) & [Jithina Jose](#)

Conference paper | [First Online: 29 January 2021](#)

**465** Accesses

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## Abstract

In software engineering, the single point is to deliver top notch yield while enhancing the expense and the time expected to finish the application development. To accomplish this objective, software groups will play out the test on their application before live creation. For test automation documentation assumes a critical job. This paper center around mechanize experiment age dependent on accessible test assets, challenges which could be conveyed by methods for orderly practice improvement and characterizing test system for any software application. One noteworthy motivation is to ensure perceptibility among necessities and system experiments. Along these lines, the significance of experiments is dull and testing, especially under time objectives and when there are progressive changes to necessities. Right now, customized test age diminishes the cost of testing just as guarantees that experiments properly spread all necessities, a huge objective in prosperity essential systems and for the measures they need to come. This proposed application guarantees proficient test inclusion of software surrenders, where key usefulness won't be missed in the automatic test absconds expectation. Right now, experiments can be produced after application development completes a component or a lot of highlights.

## About this paper



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# A Novel Machine Learning-Based Ship Detection for Pre-annotated Ship Database

R. Pavan , P. Kiriti, B. Keerthi Samhitha, Suja Cherukullapurath Mana & Jithina Jose

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## Abstract

Right now, present a novel machine learning-based ship detection for pre-explained transport database, which is intended for preparing and assessing transport object recognition calculations. Programmed object identification in the oceanic condition has gotten significant, with a wide cluster of utilizations in regions, for example, maritime fighting, vessel traffic administrations and fishery the board. The manual detection of items is not extremely effective due to the intense climatic conditions, for example, mist, downpour, storm and so forth. It might prompt flawed expectations and it is absolutely reliant on the ability of the individual. This adds to the usage of programmed object recognition component. The acknowledgment of inshore and toward the ocean ships is a major task for an enormous combination of employments in both military and non-military faculty fields.

Priyadarsi Nanda ·  
Vivek Kumar Verma ·  
Sumit Srivastava · Rohit Kumar Gupta ·  
Arka Prokash Mazumdar *Editors*

# Data Engineering for Smart Systems

Proceedings of SSIC 2021



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# A Multi-component-Based Zero Trust Model to Mitigate the Threats in Internet of Medical Things

[Y. Bevish Jinila](#), [S. Prayla Shyry](#) & [A. Christy](#)

Conference paper | [First Online: 14 November 2021](#)

**496** Accesses

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## Abstract

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The advent of Internet of Medical Things (IoMT) has become a greater boom in the present scenario due to the pandemic COVID-19. Nowadays, remote monitoring of the patients is significant in elderly people as well as COVID-19-affected cases. It is known that the medical data is more sensitive and if not handled properly can result in adverse conditions. In this paper, a Zero Trust Model (ZTM) is introduced to handle the security of the IoMT data. This framework will definitely mitigate the occurrence of threats and further benefit the users.

## About this paper



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P. Karthika, Ramya G. Franklin

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## Novel Embedding Based Ranking Approach for Effective Product Marketing on E-Commerce Websites

Pathuri Revanth, P. Venkata Krishna, A. C. Santha Sheela

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[P. Karthika](#)  & [Ramya G. Franklin](#)

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## Abstract

Verifiable Searchable Symmetric Encryption is one of the crucial cloud protection method, that widely enables subscribers to access the encrypted details in the cloud by using keywords. While making the best use of our knowledge, the current SSE systems are supporting various information that is mostly influenced by asymmetric key cryptography which in turn requires a lot of time-consuming activities. Thus, the method for attaining the key phrase hunt of powerful encrypted cloud information with effective verification is a very crucial problem that needs to be dealt with most prominent care. In order to bring a considerable solution for this upcoming issue, we can consider attaining a key phrase hunt of powerful encrypted cloud information with symmetric key based verification as well as suggest a useful pattern within this paper. To be able to allow for the effective verification of powerful details, we model a novel method called, AAT (Accumulation authentication tag) that completely depends on the symmetric key which is a part of cryptography. It's ideal work is to create an authentication tag for every key phrase. So as to attain effective update, in this paper we have modeled a brand-new protected index composed by the search engines depending on the orthogonal checklist along with a verification checklist that contains AATs. The protection evaluation as well as the overall performance analysis benefits demonstrates that the suggested plan is efficient and secure.



Lecture Notes on Data Engineering  
and Communications Technologies 66

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Proceedings of ICCBI 2020

 Springer

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# A Framework for Monitoring Patient's Vital Signs with Internet of Things and Blockchain Technology

[A. Christy](#), [MD Anto Praveena](#), [L. Suji Helen](#) & [S. Vaithyasubramanian](#)

Conference paper | [First Online: 22 June 2021](#)

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## Abstract

In this prevailing situation of automation, private data related to the public needs to be stored for all businesses and transactions. Most often, the private data of the patient's name, mobile number, diseases, laboratory report, and treatment undergoing is breached by intruders. Automation in the healthcare sector can be made in a highly secured and less complicated manner by integrating patient's health records and health insurance agencies by adopting blockchain technology. In this article, a real-time patient health monitoring system has been built and implemented on an IoT platform which can allow healthcare agencies like hospitals and doctors to monitor critical data of the patient in real-time and respond to the needs of the patient accordingly. The proposed system will prove to be beneficial for patients as well as the doctors and nurses and will lead to the implementation of an intelligent system which can

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# Advances in Smart Grid and Renewable Energy

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# Twitter Data Analysis for Live Streaming by Using Flume Technology

[Vissamsetti Mohan Manoj](#) , [Yalamandala Prasanth](#), [T. Prem Jacob](#), [G. Nagarajan](#) & [A. Pravin](#)

Conference paper | [First Online: 05 January 2021](#)

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 691)

## Abstract

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Nowadays, people all over the world express themselves by numerous platforms on the Internet every minute. Twitter is a type of social media that is being used by millions of people to express their opinions or expressions in the form of tweets. The assets of the streaming process generate an enormous amount of real-time data mentioned as big data. To understand the instance, we are going to analyze the tweets to find out the trending word among the given word using big data. We are going to make use of Flume technology to extract real-time data on Twitter as well as store in the Hadoop distributed file system. Hive as well as its inquiries to provide the sentiment data depending on the groups demarcated in Hive query language. Data will be visualized with the help of a Word Cloud.



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Lecture Notes in Electrical Engineering 708

Akash Kumar Bhoi  
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# Advances in Systems, Control and Automations

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# Telemetry-Based Autonomous Drone Surveillance System

[R. Sriram](#) , [A. Vamsi](#) & [S. Vigneshwari](#)

Conference paper | [First Online: 20 March 2021](#)

**200** Accesses

Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 708)

## Abstract

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The existing surveillance system comprises monitoring and manual inspection of visual feed which is relatively difficult when the area of coverage is too large and objects in motion. Henceforth, this dilemma needs to be solved through implementing automated surveillance system in mobile drones which would eliminate the disadvantages of stationary surveillance. Also, by implementing the intruder and obstacle detection system to identify object motion

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Lecture Notes in Networks and Systems 130

D. Jude Hemanth

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# Artificial Intelligence Techniques for Advanced Computing Applications

Proceedings of ICACT 2020

 Springer

# Survey on Real-Time Diabetic Patient's Monitoring Using Internet of Things

[G. Geetha](#)  & [K. Mohana Prasad](#)

Conference paper | [First Online: 24 July 2020](#)

**481** Accesses | **1** Citations

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 130)

## Abstract

According to the statistics, diabetes is a life-threatening disease and also paves the way to other acute and chronic diseases. Diabetes management is a crucial task even after the technology improvement. In this paper, a study has been done for monitoring real-time patients using the Internet of Things (IoT). In a diabetes Healthcare application, a large amount of data will be generated continuously; hence there is a need to employ some efficient technique to convert this raw data into useful information. Combining IoT and Big Data will help us to address the issues of storage, processing, and analytics. Diabetes can be predicted based on the blood glucose level in the blood samples. Insulin is a hormone generated by the pancreas, if there is insufficient secretion of insulin or if it's not consumed by the body properly, it leads to a condition called diabetes. There are three different types of diabetes: (1) Type 1 diabetes is due to insufficient secretion of insulin (2) Type 2 diabetes occurs when the body does not use the insulin secreted (3) Gestational diabetes that comes during pregnancy and it goes off after giving birth.



## About this paper



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Akash Kumar Bhoi  
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# Smart Bus Management and Tracking System

[M. Hari Narasimhan](#) , [A. L. Reinhard Kenson](#) & [S. Vigneshwari](#)

Conference paper | [First Online: 20 March 2021](#)

**213** Accesses

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## Abstract

In this advancing world, boarding up buses has been one of the prominent problems faced by many remote users. So, we proposed a new smart system to allocate, schedule, and provide real-time information of the transport system. Therefore, to overcome these problems, we present a mobile application-based live tracking system to track buses through scheduling and live tracking using Google Maps application program interface (API) and then is managed with the help of an admin dashboard. The dashboard takes care of the management of the buses and drivers through allocation and scheduling. The required data is fed and supervised by the administrator through the admin dashboard. The driver app helps in providing the real-time location of the buses. The location data is then fed to the server hosted by Firebase. Then it is forwarded to the dashboard and is sent to the user application.

## About this paper



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# Semantic Analysis of Big Data in Hierarchical Interpretation of Recommendation Systems

[R. Lavanya](#)  & [B. Bharathi](#)

Conference paper | [First Online: 07 November 2019](#)

**694** Accesses

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 39)

## Abstract

In today's scenario where Big Data is being used at its maximum potential, showing most of its influence on searching from the internet. It gives out large amount of data to the user which becomes too overwhelming for the user to analyze and understand. This led to the introduction of Recommendation Systems whose main purpose is to give relevant datasets according to the user's preference which makes it easy for the user to understand and analyze the best option among the limited options he/she has received from the system.

Recommendation Systems exhibit some kind of implicit hierarchy based on either users or items to give the best recommendation to users. But it has been noticed that these systems produce a lot of ambiguities. Hence, leading to a lot of repeated results. This paper investigate various ways to understand the implicit working of hierarchical structures and make some improvisations on the same with the help of semantic analysis under collaborative filtering approach.

# About this paper



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# Advances in Power Systems and Energy Management

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# SEAL—Security-Aware List-Based Routing Protocol for Mobile Ad Hoc Network

[Serin V. Simpson](#)  & [G. Nagarajan](#)

Conference paper | [First Online: 21 January 2021](#)

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## Abstract

Security is a crucial requirement in MANET. Attackers aim these networks due to their features of dynamically changing topologies, absence of centralized monitoring points, open medium, lack of clear lines of defense, and reliance on cooperative algorithms. This paper presents a robust and efficient list-based communication over a clustered mobile ad hoc network. The main goal of this work is to provide a network model that addresses the issues of performance and security of existing protocols in MANETs.



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## K-NN SEMANTIC Inquiry on Scrambled Social Information BASE

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## Abstract

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Web mining is considered as an application of data mining technique which encompasses web, web users and web forums. In today's time ODF (online discussion forums) are common and well incorporated web-based ground for people to interact, meet and discuss varied topics. In a university, interaction among teachers and students is of prime importance. Prior work relies face to face interaction amidst student and staff. There is exchange of significant information amidst the faculty and the student which can be manage and controlled in terms of time and space. There is certain crucial information (may be general or subject oriented) that students may want to provide and could not be restrained for a specific time period by lecturer, also the lecturer may confront the issue of dispatching any essential information or details regarding rescheduling of classes to the student. The current work proposes SDF—student discussion forum which being an asynchronous communication involving either student—student or student—staff interactions for resolving student queries pertaining to any



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## Abstract

Volatility of housing prices is difficult to predict and varies based on several factors like area and year of purchase. This paper summarizes the results of the prediction of housing prices through Linear Regression, K-Means Clustering, Logistic Regression, Auto Regressive Integrated Moving Average and an Artificial Neural Network. The neural network can classify whether the price of a particular house is above or below the average market value. The performance of machine learning algorithms, is measured using metrics like Precision, Recall, F1-Score, while the ANN described predicts the price range of a newly entered data point, hence paving the way for potential real-time prediction.



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Part of the [Lecture Notes in Electrical Engineering](#) book series (LNEE, volume 690)

## Abstract

In this era of digital evaluation, social media plays a vital role in human life. Even though it has both pros and cons, through these medium, a great amount of knowledge can be gathered to understand the personality traits of Human behavior. This paper provides an insight on different types of prediction method used using Facebook dataset for identifying personality traits. By reviewing all those works, an ontology enriched sentimental analysis concept was proposed in identifying the personality traits in Facebook.

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[R. Rahul](#), [K. Mohana Prasad](#)  & [J. Refonaa](#) 

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## Abstract

Right now, characterize every one of those perspectives as a component of item and present a multi-dimensional opinion investigation approach for banking audits. Specifically, we utilize an opinion dictionary extending instrument to expel the word equivocalness among various measurements and propose a calculation for feeling examination on banking surveys dependent on rules and a dimensional conclusion vocabulary. Make word net lexicon: In this kind of record, every single positive word is worked out independently and every negative word is worked out at one spot. Extraction of dataset: First dataset of openly accessible financial audits was downloaded from the Web, and afterward the entry extraction system distinguishes significant segments of the content which is generally illustrative of the substance of the record. All the more explicitly, this progression includes distinguishing and extricating those particular financial highlights and the conclusions on them.

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A microscope is an instrument used to see objects that are too small for the naked eye. The science of investigating small objects using such an instrument is called microscopy. Optical microscopes consist of a lens or combination of lenses. Others, such as the electron microscope, use other means of magnification, such as beams of electrons. A Simple microscope is a microscope that uses only one lens for magnification. The electron microscope is a type of microscope that uses a beam of electrons to create an image of the specimen. A phase-contrast microscope utilizes the phase differences of light rays transmitted by different portions of an object to create an image in which the details of the object are distinct despite their near uniformity of refractive index.



Dr. M. Rajasekar

# MICROSCOPY PRINCIPLES & APPLICATIONS



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A microscope is an instrument used to see objects that are too small for the naked eye. The science of investigating small objects using such an instrument is called microscopy. Optical microscopes consist of a lens or combination of lenses. Others, such as the electron microscope, use other means of magnification, such as beams of electrons. A Simple microscope is a microscope that uses only one lens for magnification. The electron microscope is a type of microscope that uses a beam of electrons to create an image of the specimen. A phase-contrast microscope utilizes the phase differences of light rays transmitted by different portions of an object to create an image in which the details of the object are distinct despite their near uniformity of refractive index.

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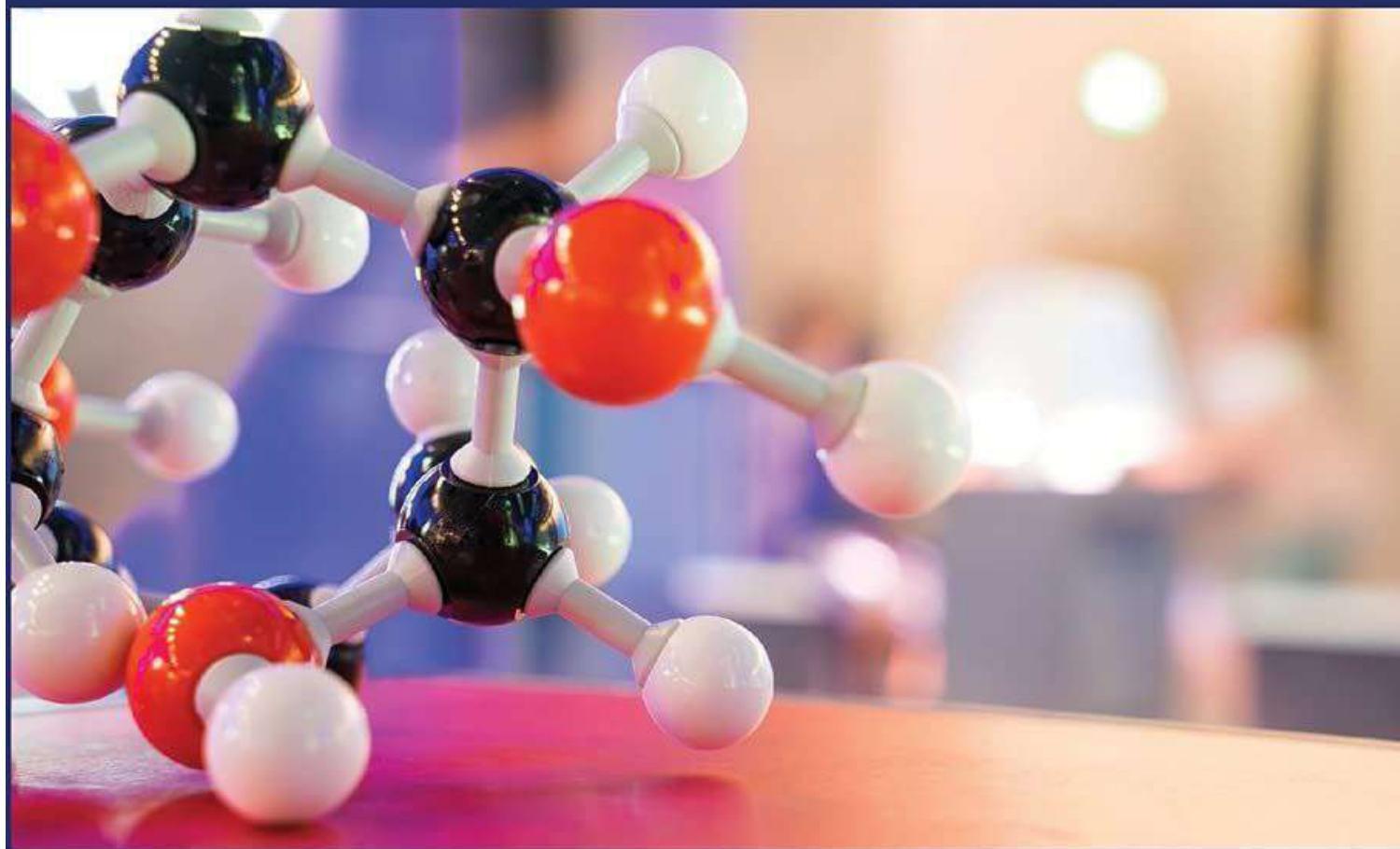
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Dr. M. Rajasekar

# Spectroscopy Principle & Applications

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Spectroscopy is the study of the interaction between light and matter where the absorption and emission of light or other radiation by the matter are studied and measured. It mainly deals with the dispersion of light and other radiations that is caused by an object which allows the study of various properties of the object. The measurement in spectroscopy is a function of the wavelength of the radiation being observed. It has been widely exploited as it allows the determination of composition, physical and electronic structure to be determined of various particles of molecular or atomic levels.

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## Drug Development and Regulations

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## **Drug Development and Regulations**

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Dr. M. RAJASEKAR

## BIOETHICS IN CLINICAL RESEARCH



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Clinical research is necessary to establish the safety and effectiveness of specific health and medical products and practices. Much of what is known today about the safety and efficacy of specific products and treatments have come from randomized controlled clinical trials that are designed to answer important scientific and health care questions. Randomized controlled trials form the foundation for "evidence-based medicine", but such research can be relied upon only if it is conducted according to principles and standards collectively referred to as "Good Clinical Research Practice" (GCP). A standard for the design, conduct, performance, monitoring, auditing, recording, analyses, and reporting of clinical trials that provides assurance that the data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial subjects are protected.



Dr. M. RAJASEKAR

## GOOD CLINICAL RESEARCH PRACTICE (GCP)



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Analyzing chemical and biological entities is a metaphor for the process of achieving the goals of life science research. Because there is such a wide range of analytical techniques and instruments available, it is critical to grasp the principles, limitations, and alternatives of each methodology before applying it effectively to achieve relevant results. This courses book includes chemistry, biochemistry, biology, pharmaceutical and clinical sciences, environmental, forensic, and materials sciences using biophysical techniques. The book focuses on conveying in-depth information capable of enlightening scientists' and researchers' for current throughput screening expectations. Illustrative examples have been inserted throughout the book, when considered necessary, and are to be read as part of the corresponding chapter. The structure also pushes the reader to think critically and put the approach into practice. This book will undoubtedly be a helpful reference tool for students, instructors, and researchers working in the subjects listed.



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## BIOPHYSICAL TECHNIQUES AND INSTRUMENTATION

Dr. M. RAJASEKAR

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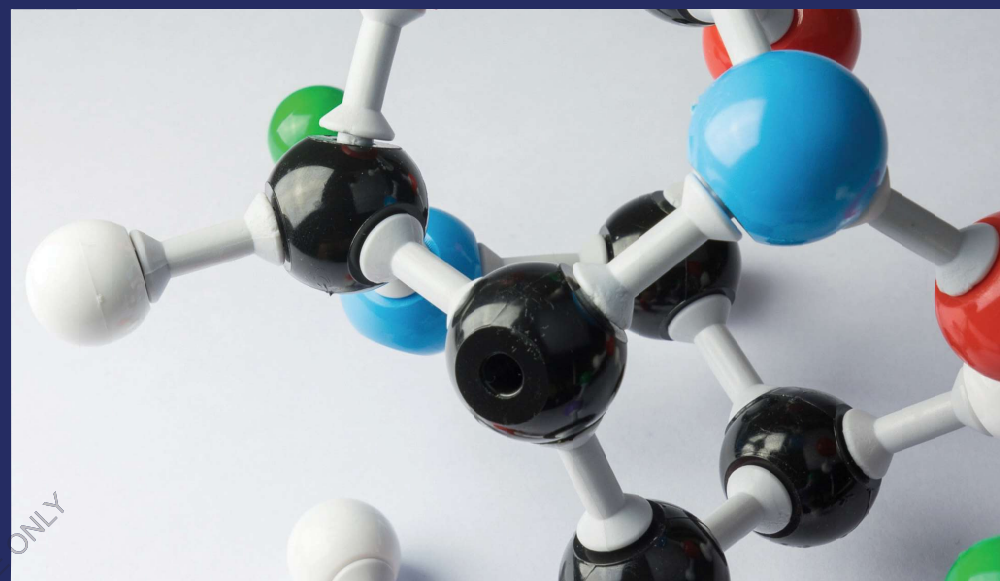
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Carbohydrate chemistry has received increasingly growing attention in the past year decades. These glycoconjugates which mainly exist as glycolipids and glycoproteins play unique roles in events such as cell adhesion, cell growth, inflammation, and immune response. Glycoconjugates procured from biological sources are often micro-heterogeneous therefore isolation of these glycoconjugates is difficult because they exist in very low concentrations and micro-heterogeneous forms, and hence the chemical synthesis is the most sought after the technique. The synthetic approaches of glycosides from various applications, interactions, and functionalized sugar derivatives. Among the synthesis using *N*-, *C*-, *O*-, and *S*-linked glycosides is considered as highly versatile that led to a diverse array of interesting sugar derivatives.



Dr. M. Rajasekar

## Recent Advances in Carbohydrate Chemistry



Dr. M. Rajasekar is currently working as Scientist-C in the Centre for Molecular and Nanomedical Sciences, International Research Centre, Sathyabama Institute of Science and Technology (Deemed to be University), Chennai since 2018. He has delivered several invited scientific lectures.



Dr. M. Rajasekar



Carbohydrate chemistry has received increasingly growing attention in the past year decades. These glycoconjugates which mainly exist as glycolipids and glycoproteins play unique roles in events such as cell adhesion, cell growth, inflammation, and immune response. Glycoconjugates procured from biological sources are often micro-heterogeneous therefore isolation of these glycoconjugates is difficult because they exist in very low concentrations and micro-heterogeneous forms, and hence the chemical synthesis is the most sought after the technique. The synthetic approaches of glycosides from various applications, interactions, and functionalized sugar derivatives. Among the synthesis using N-, C-, O-, and S-linked glycosides is considered as highly versatile that led to a diverse array of interesting sugar derivatives.

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EDITED BY  
ALAGARSAMY PANDIKUMAR  
KANDASAMY JOTHIVENKATACHALAM  
KARUPPANAPILLAI B. BHOJANAA

# INTERFACIAL ENGINEERING

## IN FUNCTIONAL MATERIALS FOR DYE-SENSITIZED SOLAR CELLS

WILEY

## Abstract

Graphitic carbon nitride (g-C<sub>3</sub>N<sub>4</sub>), a fascinating earth-abundant material, displays good optical response to visible light, and it has unique properties such as excellent chemical stability and tunable electronic behavior. Because of sole electronic structure, g-C<sub>3</sub>N<sub>4</sub> acts as a prominent candidate for optoelectronic applications. It can also be functionalized with various materials to enhance the cell performance using nanocomposites. g-C<sub>3</sub>N<sub>4</sub>-based nanocomposites such as, metal-free heterojunction, metal oxide (metal sulfide) heterojunction, composite oxide, halide heterojunction, noble metal heterostructures, and complex system have been utilized in optoelectronic device applications. g-C<sub>3</sub>N<sub>4</sub>-based nanocomposites are found to improve crystalline quality, reduces intrinsic defect density, passivates charge recombination centers, are beneficial for charge transfer process in dye-sensitized solar cells (DSSCs). This chapter summarizes some important viewpoints on the challenges and new guidelines for exploring g-C<sub>3</sub>N<sub>4</sub>-based nanocomposites as a photoanode in DSSCs.



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## 12 Graphitic Carbon Nitride Based Nanocomposites as Photoanodes

### 12.1 Introduction

### 12.2 Importance of Graphitic Carbon Nitride

### 12.3 Photoanodes for DSSC

### 12.4 Preparation of Graphitic Carbon Nitride

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## Abstract

The advancement of technology offers solution to the complex problems faced by the society and brings the wellbeing of the individuals. Smart healthcare is prominent nowadays for diagnosis, treatment and constant monitoring which reduces visitation of hospital, transport cost and waiting time. Voice pathology is a disease which affects the person vocal cord so that one who facing difficult in speech. If the disease not identified in time, it leads to permanent loss of voice for an individual. Traditionally, the disease is identified through oral examination or manual procedures. Due to the advent of smart phone, one can record the voice and send it to the cloud server for processing. Our system classifies the voice data and provides the decision to the user. This greatly reduces the transport cost, and waiting time for oral examination at medical center. The mobile phone recorded the patient voice data and it will be stored into the cloud. The voice data is synthesized to signals and with the help of deep Neural network the voice pathology can be identified. The system has been tested with the data set and the test result shows promising.

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**2021 5th International Conference on Intelligent Computing and Control Systems (ICICCS)**

6-8 May 2021

DOI: [10.1109/ICICCS51141.2021](#)

**Abstract:**

In the present scenario, everybody needs communication technology to connect with each other. Communication technologies are significant these days for the betterment of social and personal interaction. The combination of technologies with the internet makes communication easy. However, the person who is physically challenged suffered a lot to utilize this technology due to visual and physical difficulties. There are many technologies advancements have come though it is not possible to use like normal users. This paper aims at creating an email system that helps even new users or physically impaired people to use the system for communication without any previous practices. There is no use of keywords, only with the help of mouse actions and voice conversion the email system works. The person who is not literate can also send emails as it is based on speech recognition and text to speech. The system is completely based on responsive voice interaction to utilize the technology easy and hassle free manner. The system is well designed to send the mails quickly. There are all the options available to send emails and perform all the functions for the email system.

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I. Introduction

II. Existing System

III. Proposed System

IV. Literature Review

V. System Architecture

VI. Module of the System

VII. Future Scope

VIII. Conclusion

IX. Results

**Abstract:**

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6-8 May 2021

**Abstract:**

The paper explains the working of an Uber dataset, which contains data produced by Uber for New York City. Uber is defined as a P2P platform. The platform links you to drivers who can take you to your destination. The dataset includes primary data on Uber pickups with details including the date, time of the ride as well as longitude-latitude information, Using the information, the paper explains the use of the k-means clustering algorithm on the set of data and classify the various parts of New York City. Since the industry is booming and expected to grow shortly. Effective taxi dispatching will facilitate each driver and passenger to reduce the wait time to seek out one another. The model is employed to predict the demand on points of the city.



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# Document Sections

I. Introduction

II. Literature Survey

III. Proposed Method

IV. Results and Discussion

V. Conclusion and Future  
Work



## Trends in Aquaculture Feed Development with Chitosan Nano Particles– A Review

Kumaran. S<sup>1\*</sup>, Wilson Aruni,<sup>2,7,8</sup>, Karthika. M,<sup>2</sup>, Anandajothi. E<sup>3</sup>, Prasanna Balaji. N<sup>4</sup>, Pugazhvendan S. R<sup>5</sup>, Rajeswari. V<sup>6</sup>, Bharathi. S,<sup>4</sup> Rajasekar. T<sup>1</sup> and Guru Prasad. S<sup>4</sup>

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<sup>7</sup>School of Medicine, Loma Linda University, CA, USA

<sup>8</sup>Department of Microbiology, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India

## **ABSTRACT:**

Chitosan is a natural, biocompatible, biodegradable, nontoxic and effectively accessible polymer which can be utilized for arrangement of nanoparticles, it is chelated with chelators, for example, sodium tripolyphosphate and barium chloride. Chitosan nanoparticles are utilized in pharmaceutical ventures as an antimicrobial compound. N-Acetylglucosamine (GlcNAc) is a monosaccharide that by and large polymerizes straightly through (1,4)-  $\beta$ -linkages. The goal of this assessment was to get ready chitosan (CS) nanoparticles related with N-acetyl-D-Glucosamine (GlcNAc), utilizing the wet turning technique, required to consolidate the GlcNAc pharmacological properties with the CS organic properties for utilization of feed arrangement. Chitosan nanoparticles from shells of arthropods and shellfish devastate and all around have the possibilities to upset aquaculture. One new approach called "Nanotechnology" can be utilized for altered the bolstering procedure. The fundamental idea of this strategy is that the fish nourishment supplements are covered in chitosan Nano-particles which expanding the extent of that go over the gut tissue and into the fish, other than going straight forwardly through stomach related support unused.

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Recent Advances in

# Anti-Infective Drug Discovery



## Abstract

**Background:** The global outbreak of COVID-19 incepted in Wuhan, China in the late 2019. It is still unclear about the origin of the infection. Over time, it has migrated geographically to 150 countries in the world and World Health Organization (WHO) has declared the infectious disease to be pandemic.

**Objective:** Recently, COVID-19 has stepped into India by the travellers from other countries. The transmissibility and epidemicity of COVID-19 in India is exponential. So, in-order to understand the above characteristics, specifically COVID-19 status in India is analyzed. To analyze this into deeper, the state of Kerala is selected. The epidemiological characteristics of patients in Kerala, South India and the possible transmission of COVID-19 from asymptomatic members to other peers are shown using certain cases.

# Recent Advances in Anti-Infective Drug Discovery

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28-29 Sept. 2020

**Abstract:**

In Today's World Women Safety is the most Important Issue In very Country. Ladies Are Harassed and pained and Sometimes when the earnest assistance is required, there is no necessary area of the ladies with the goal that individuals can help. Its need that we are generally mindful of significance of ladies' security, yet we should dissect that they ought to be appropriately ensured. The prior existing framework is useful in identifying the ladies' area after the wrongdoing has been submitted. Right now, will utilize the ladies' purse where we will fix camera focal points, and which will be conveyed anyplace they go. At whatever point she interacts with any individual outside; the exercises of the individual can be observed consistently. In the event that the feelings of the individual fluctuate bringing about any destructive activity, at that point our framework will recognize it and procedure the caught picture and it will send to the police and relatives with GPS area followed from IP address. This application isn't utilized for cases like assaults and any sick people prodding young ladies, yet this additionally causes them from any terrible condition or any medical issue like blacking out of nowhere. GPS is to follow the area of the person in question and to send messages, the area of the injured individual to the close by police headquarters and the telephone quantities of the family members of the person in question. This application encourages ladies to conquer their dread in going out and do things what they like to do.



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Akash Kumar Bhoi  
Pradeep Kumar Mallick  
Valentina Emilia Balas  
Bhabani Shankar Prasad Mishra *Editors*

# Advances in Systems, Control and Automations

Select Proceedings of ETAEERE 2020

## Abstract

---

The existing surveillance system comprises monitoring and manual inspection of visual feed which is relatively difficult when the area of coverage is too large and objects in motion. Henceforth, this dilemma needs to be solved through implementing automated surveillance system in mobile drones which would eliminate the disadvantages of stationary surveillance. Also, by implementing the intruder and obstacle detection system to identify object motion and analyze the image data so that we would be managing to integrate a full-fledged non-stationary, mobile surveillance system through drones with cameras.

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D. Jude Hemanth  
G. Vadivu  
M. Sangeetha  
Valentina Emilia Balas *Editors*

# Artificial Intelligence Techniques for Advanced Computing Applications

Proceedings of ICACT 2020

## Abstract

---

According to the statistics, diabetes is a life-threatening disease and also paves the way to other acute and chronic diseases. Diabetes management is a crucial task even after the technology improvement. In this paper, a study has been done for monitoring real-time patients using the Internet of Things (IoT). In a diabetes Healthcare application, a large amount of data will be generated continuously; hence there is a need to employ some efficient technique to convert this raw data into useful information. Combining IoT and Big Data will help us to address the issues of storage, processing, and analytics. Diabetes can be predicted based on the blood glucose level in the blood samples. Insulin is a hormone generated by the pancreas, if there is insufficient secretion of insulin or if it's not consumed by the body properly, it leads to a condition called diabetes. There are three different types of diabetes: (1) Type 1 diabetes is due to insufficient secretion of insulin (2) Type 2 diabetes occurs when the body does not use the insulin secreted (3) Gestational diabetes that comes during pregnancy and it goes off after giving birth.

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**Abstract:**

Heart disease is highlighted as the major one among the various death factors. Detecting heart disease tends to be a bit complex due to insufficient knowledge and experience of the medical practitioners concerning warning signs of heart failure. There exist innumerable data volumes in the healthcare sector. By adopting the best appropriate data mining techniques, early detection of heart-related diseases can be achieved and also preventing it from occurring. Both the Machine Learning (ML) and Data Mining (DM) techniques prove to be effective and significant in the domain of the medical industry. The objective of the current research work is to examine various risk parameters highlighted in the investigation of Heart disease and also it targets to discover multiple techniques for the identification and prediction of heart disease along with evaluating the drawbacks of the existing work. The article utilizes the DM techniques to summarize existing researches concerning heart disease prediction, examining a combination of DM techniques to reveal the best suitable and effective technique. The CNN, LSTM is being proposed for heart disease identification and prediction which yields in improvised output than the rest of the prevailing techniques. Various levels involved in the proposed approach are a collection of dataset, training, and testing, collection of user symptoms, securely forwarding the data by utilizing AES, and eventually, result is being generated in PDF format. Comparative performance in datasets concerning medicine is adopted in predicting heart disease techniques in comparison to the rest of other ML approaches.

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**Abstract:**

Personalized web search (PWS) has demonstrated its effectiveness in improving the quality of various search services on the Internet. However, evidences show that users' reluctance to disclose their private information during search has become a major barrier for the wide proliferation of PWS. We study privacy protection in PWS applications that model user preferences as hierarchical user profiles. We propose a PWS framework called UPS that can adaptively generalize profiles by queries while respecting user-specified privacy requirements. Our runtime generalization aims at striking a balance between two predictive metrics that evaluate the utility of personalization and the privacy risk of exposing the generalized profile. We present two greedy algorithms, namely GreedyDP and GreedyIL, for runtime generalization. We also provide an online prediction mechanism for deciding whether personalizing a query is beneficial. Extensive experiments demonstrate the effectiveness of our framework. The experimental results also reveal that GreedyIL significantly outperforms GreedyDP in terms of efficiency.



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4 UPS Procedures

5 Generalization Techniques

Sheng-Lung Peng  
Le Hoang Son  
G. Suseendran  
D. Balaganesh *Editors*

# Intelligent Computing and Innovation on Data Science

Proceedings of ICTIDS 2019

## Abstract

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There exist many prevalent issues in today's world, many of which seem to have no feasible solution. One such issue is the disparity in the education provided between males and females. Gender equality is an important topic for discussion and reform in the modern world, and yet a full, thorough understanding of the intensity of the issue is yet to be elicited. Using a combination of modern computational statistical analysis and the vast, extensive trough of census data, this paper provides a framework for gaining a better viewpoint on the issues plaguing us currently, thus taking a step closer to eradicating them.

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**Abstract:**

The medical field is one of the most important areas as that is researched by numerous researchers in order to develop the existing system. Though there have been numerous new and innovative systems developed, there are always some challenges present in the field that need to be solved. It is important for a healthcare system to make sure that it is secure enough and any leak of the patient data could lead to numerous other risk factors. In this paper, we propose a speaker recognition system that makes use of the Gaussian Mixture Model which identifies a person from characteristics of their voice to authenticate them to access the medical records. The model is able to determine the gender of the person to be authenticated and also recognizes the person. The model uses Cepstral Analysis as the feature extraction technique using the feature Mel Frequency Cepstral Coefficient (MFCC). The proposed work is observed to work well when compared with other existing systems and could be of much use in performing and giving access to the authorized employees in a health care system.



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*Abstract*— If there is one supposedly English term word that can be understood by all speaking different innumerable languages across the world, it is ‘media.’ Inherently a plural of ‘medium’, a Latin term, ‘media’ has come to stay as a collective singular denoting all kinds of standard communication among people in all languages. Evolving out of the age-old media channels such as cave writings, written scrolls, printed journals, books, radio, cinema, television and the social media has become part and parcel of the post-modernist man’s communication and information-based digital life. While radio, TV, cinema and print journalism belonging to the 20<sup>th</sup> century’s powerful, though one-way, information system, social media is the 21<sup>st</sup> century’s most dominant communication and information technology marked by the values, new norms and digital features of the internet era of the millennium. As a result, the studies about media have begun taking on new colours and new dimensions, thanks to the inevitable influence of social media that is the warp and woof of the everyday life of the modern man. As Marshall McLuhan said, ‘medium is the message’. The message that the social media conveys is that no one in this current era can dispense with social media use and a majority of people, irrespective of race, culture, language, country, religion, caste, gender et al, is invariably engaged with communicating with one another and debating various global issues, social, cultural and so on and so forth.

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## **SOCIAL MEDIA: EMERGING TRENDS AND PARADIGM SHIFTS IN MEDIA EDUCATION**

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This article is part of the Research Topic

CD4 T cells in HIV: A Friend or Foe?

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# Role of Circulating T Follicular Helper Cells and Stem-Like Memory CD4<sup>+</sup> T Cells in the Pathogenesis of HIV-2 Infection and Disease Progression

Sivasankaran Munusamy Ponnann<sup>1,2\*</sup>K.K. Vidyavijayan<sup>1\*</sup>Kannan Thiruvengadam<sup>1</sup>Nancy Hilda J.<sup>1</sup>Manikannan Mathayan<sup>3</sup>Kailapuri Gangatharan Murugavel<sup>4</sup> andLuke Elizabeth Hanna<sup>1\*</sup><sup>1</sup> Department of HIV/AIDS, National Institute for Research in Tuberculosis (Indian Council of Medical Research), Chennai, India<sup>2</sup> Centre for Infectious Disease Research, Indian Institute of Science, Bangalore, India<sup>3</sup> Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai, India<sup>4</sup> Division of Immunology, YRG Centre for AIDS Research and Education, Chennai, India



CD4<sup>+</sup> T cells are critical players in the host adaptive immune response. Emerging evidence suggests that certain CD4<sup>+</sup> T cell subsets contribute significantly to the production of neutralizing antibodies and help in the control of virus replication. Circulating T follicular helper cells (Tfh) constitute a key T cell subset that triggers the adaptive immune response and stimulates the production of neutralizing antibodies (NAbs). T cells having stem cell-like property, called stem-like memory T cells (Tscm), constitute another important subset of T cells that play a critical role in slowing the rate of disease progression through the differentiation and expansion of different types of memory cell subsets. However, the role of these immune cell subsets in T cell homeostasis, CD4<sup>+</sup> T cell proliferation, and progression of disease, particularly in HIV-2 infection, has not yet been elucidated. The present study involved a detailed evaluation of the different CD4<sup>+</sup> T cell subsets in HIV-2 infected persons with a view to understanding the role of these immune cell subsets in the better control of virus replication and delayed disease progression that is characteristic of HIV-2 infection. We observed elevated levels of CD4<sup>+</sup> Tfh and CD4<sup>+</sup> Tscm cells along with memory and effector T cell abundance in HIV-2 infected individuals. We also found increased frequencies of CXCR5<sup>+</sup> CD8<sup>+</sup> T cells and CD8<sup>+</sup> Tscm cells, as well as memory B cells that are responsible for NAb development in HIV-2 infected persons. Interestingly, we found that the frequency of memory CD4<sup>+</sup> T cells as well as memory B cells correlated significantly with neutralizing antibody titers in HIV-2 infected persons. These observations point to a more robust CD4<sup>+</sup> T cell response that supports B cell differentiation, antibody production, and CD8<sup>+</sup> T cell development in HIV-2 infected persons and contributes to

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**Abstract:**

IoT has already enforced in many industries including insurance domain. In this paper, a smart reliable insurance system is proposed, for both the insured and the insurer. The main objective of the paper is to detect fire and water clogging incidents by using smart connected sensors. Billions of data is being generated from the IoT enabled connected devices like sensors, to measure temperature, bumidity, smoke etc., These information will be sent to the insurance underwriter to contact on emergency and can permit insurers to dynamically process insurance policies and to calculate premium based on risks.

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# Abstract

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II. RELATED WORK

III. PROPOSED WORK

IV. RESULT AND  
DISCUSSION

V. CONCLUSION

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Akash Kumar Bhoi  
Pradeep Kumar Mallick  
Valentina Emilia Balas  
Bhabani Shankar Prasad Mishra *Editors*

# Advances in Systems, Control and Automations

Select Proceedings of ETAEERE 2020

# Smart Bus Management and Tracking System



M. Hari Narasimhan, A. L. Reinhard Kenson, and S. Vigneshwari

**Abstract** In this advancing world, boarding up buses has been one of the prominent problems faced by many remote users. So, we proposed a new smart system to allocate, schedule, and provide real-time information of the transport system. Therefore, to overcome these problems, we present a mobile application-based live tracking system to track buses through scheduling and live tracking using Google Maps application program interface (API) and then is managed with the help of an admin dashboard. The dashboard takes care of the management of the buses and drivers through allocation and scheduling. The required data is fed and supervised by the administrator through the admin dashboard. The driver app helps in providing the real-time location of the buses. The location data is then fed to the server hosted by Firebase. Then it is forwarded to the dashboard and is sent to the user application.

**Keywords** Google map · Firebase server · Dashboard · Administrator · Maps API

## 1 Introduction

Smartphones have become one of the most important devices used in this progressive world. Where for every need of the user, there is an app for it. It has become one of the most reliable devices in human history [1]. No one can survive in this digital world without a smartphone. From ordering merchandises to ordering food, smartphones have paved the way for digital marketing and online amenities [2]. Every necessity of the user is satisfied by the handheld device starting from transport to travel services

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**Abstract:**

Visual impairment is the finished or fractional loss of vision. It impacts sly affects people encountering such handicaps, influencing the personal satisfaction and holds backs them from performing a significant number of their day to exercises. It can keep going for quite a long time or deep rooted. There are various types of medical procedure can help, however now and then no treatment is accessible. This paper presents a framework idea to give a shrewd assistive framework to daze individuals. The framework is planned to assist dazzle with peopling with discovering impediments in their way and to caution them and furthermore share area of client when the signal for an emergency response is squeezed. This comprises of ultrasonic sensor, raspberry pie, GPS, GSM, signal for an emergency response. The assistive framework encourages the oblivious in regards to discover the snag and caution them with signal and earpiece with the press of a crisis button, the visually impaired individual can illuminate his overseer on the off chance that regarding crises. The fundamental point of this examination work is to give a superior arrangement in regards to route framework for daze individuals with all the referenced capacities.

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**Abstract:**

Skin cancer is the most common dangerous type of cancer now a days. Because of the heterogeneity in appearance of skin lesion the expert find difficulty to detect from dermoscopic images. We propose a deep neural network using DenseNet201 pretrained architecture that classifies the seven classes of dermoscopic images for early detection of skin cancer. The proposed network is trained by International Skin Imaging Collaboration as a part of ISIC 2018 challenge that consist of 2487 training images and 604 test images. Our result show 95% accuracy of training images and 77% accuracy of test image.

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# Sustainable Communication Networks and Application

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## Abstract

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In today's scenario where Big Data is being used at its maximum potential, showing most of its influence on searching from the internet. It gives out large amount of data to the user which becomes too overwhelming for the user to analyze and understand. This led to the introduction of Recommendation Systems whose main purpose is to give relevant datasets according to the user's preference which makes it easy for the user to understand and analyze the best option among the limited options he/she has received from the system.

Recommendation Systems exhibit some kind of implicit hierarchy based on either users or items to give the best recommendation to users. But it has been noticed that these systems produce a lot of ambiguities. Hence, leading to a lot of repeated results. This paper investigate various ways to understand the implicit working of hierarchical structures and make some improvisations on the same with the help of semantic analysis under collaborative filtering approach.

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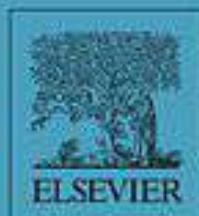
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## Abstract

Facile synthesis of  $\text{Mg}(\text{OH})_2$  nanomaterials using seaweed *Turbinaria ornata* is reported herein. X-ray powder diffraction (XRD) analysis infer that crystal structures of  $\text{Mg}(\text{OH})_2$  nanomaterials exhibit hexagonal brucite structure with thickness and lateral dimension around 7.75 nm and 16.29 nm (measured with Scherrer equation) respectively. FE-SEM images reveal that the flakes like structure were well distributed. Those results showed that easily affordable seaweed for synthesis and stabilization of  $\text{Mg}(\text{OH})_2$  nanomaterials in aqueous environments, and no other chemical stabilizers were needed. Anti-mycobacterial activity of  $\text{Mg}(\text{OH})_2$  nanomaterials were carried against *M. tuberculosis* H37Rv by LRP assay and showed 73% RLU reduction.

# Outline

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## Keywords

## 1. Introduction

## 2. Materials and methods

## 3. Results and discussion

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# Advances in Power Systems and Energy Management

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## Abstract

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Security is a crucial requirement in MANET. Attackers aim these networks due to their features of dynamically changing topologies, absence of centralized monitoring points, open medium, lack of clear lines of defense, and reliance on cooperative algorithms. This paper presents a robust and efficient list-based communication over a clustered mobile ad hoc network. The main goal of this work is to provide a network model that addresses the issues of performance and security of existing protocols in MANETs.

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**Abstract:**

In recent years, Online Social Networks (OSNs) have become a significant part of human lives. At present, Social Network connects various people who expose similar interests. Users develop explicit network systems to speak to their social connection. Users regularly transfer a lot of data associated with their own lives. The potential security dangers of such data are regularly belittled or overlooked on the issues in making sure about the information and security of users in cloud-based Social Network persevere and the users are unconscious of these issues. They share different pictures, recordings, and individual information on the systems administration site which avail considerably even after deleting. In any case, a portion of the data revealed is intended to be private, thus interpersonal information has prompted the danger of spreading of secret data of the people. Since progressively customized data is imparted to the public, disregarding the protection of the target user becomes a lot simpler. Thus, the security of the interpersonal information stored in the cloud is one of the major issues in cloud-based systems. This paper presents a survey on different models on guaranteeing security for sharing the information in the social network. It is proposed to develop a model in the future to ensure trust in the transfer of any data in the Social Network sites.

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**Abstract:**

Recommender method plays a critical role in the discovery and display of interesting items from near-infinite inventories to potential users. Yet the recommender systems are being challenged by two problems. One is “how to address new users” and the other one is “how to amaze users”. The problem is known as a cold-start recommendation. In this paper, how the products are handled in the e-commerce retailers getting sold out soon, and products remain stagnant for a long duration is discussed. To overcome this problem, the selling of products to customers of the same kind based is tracked on the previous purchase by using clustering and classification algorithms. To recommend combo products to users and general recommendation based on user point of interest and product transaction details. This way the retailers are getting helped to gain some profit which is not sold for a long period.

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I. Introduction

II. Literature Survey

III. Proposed Method

IV. Results and Discussion

V. Conclusion

**Abstract:**

Nowadays the cameras are arriving with high pixels and high software techniques. But this thing is not suitable for all the situations due to cost-effectiveness. For Example, CCTV attached to signal lights, organizations, and so on. To overcome this situation haze removal technique is used to adjust the saturation and contrast to bring clear images. But the main problem in this technique, haze removal is away from its value at the idle situation. In the area of PC pictorial superiority & perceivability levels of a picture is influenced via air-light & weakening marvels. Inflight subdivisions, which were present in climate influence the perceivability glassy of some artifact, termed commotion or undesirable sign among spectator & item. For improvising the proposed methodology perceivability level of a pic & decreasing haze & clamor different upgrade strategies are utilized. After improvement is again reestablished, upgraded image by rebuilding techniques. For enlightening the perceivability level 4 significant advances are utilized. The initial phase is securing the formula of unclear imageries. 2nd is the approximation method (gauge dissipating wonders, perceivability level). 3rd is upgrade progression (advance perceivability, decrease Smog or clamor). Preceding advance is rebuilding practice (reestablish improved pic). The principle point of the proposed methodology is to audit condition workmanship picture improvement & rebuilding strategies for refining the eminence & perceivability of an image which give clear focus in awful climate circumstance. Also, it requires only 0.52 seconds to

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II Related Work

III Existing System

IV Proposed Method

V Module Description

Clean Energy Production Technologies

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## Chapter 9 Microbial System: An Emerging



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Amit Kumar  
Marcin Paprzycki  
Vinit Kumar Gunjan *Editors*

# ICDSMLA 2019

Proceedings of the 1st International  
Conference on Data Science, Machine  
Learning and Applications

## Abstract

---

Web mining is considered as an application of data mining technique which encompasses web, web users and web forums. In today's time ODF (online discussion forums) are common and well incorporated web-based ground for people to interact, meet and discuss varied topics. In a university, interaction among teachers and students is of prime importance. Prior work relies face to face interaction amidst student and staff. There is exchange of significant information amidst the faculty and the student which can be manage and controlled in terms of time and space. There is certain crucial information (may be general or subject oriented) that students may want to provide and could not be restrained for a specific time period by lecturer, also the lecturer may confront the issue of dispatching any essential information or details regarding rescheduling of classes to the student. The current work proposes SDF—student discussion forum which being an asynchronous communication involving either student—student or student—staff interactions for resolving student queries pertaining to any subjects or providing information to improvise student's skill. For ranking the student user profile in student discussion forum, the page rank algorithm is employed. The Page ranking algorithm (a machine learning technique) can effectively rank huge bulk of data. According to the result analysis the proposed page ranking algorithm is better in performance compared to rest of the techniques. Using this research, interaction with entire team in the campus is being achieved.

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**2021 5th International Conference on Computing Methodologies and Communication (ICCMC)**

DOI: 10.1109/ICCMC51019.2021



**Abstract:**

In the present conditions, students regularly have difficulty finding a fitting institution to pursue higher studies based on their profile. There are some advisory administrations and online apps that recommend universities but they ask huge consultancy fees and online apps are not accurate. So, the aim of this research is to develop a model that predict the percentage of chances into the university accurately. This model provides also the analysis of scores versus chance of prediction based on historical data so that students can understand whether their profile is suitable or not. The proposed model uses linear regression and random forest algorithms but cat boost algorithm is giving highest accuracy.

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# Abstract

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I. Introduction

II. RELATED WORK

III. PROPOSED WORK

IV. PERFORMANCE  
ANALYSIS

V. CONCLUSION

Amit Kumar  
Marcin Paprzycki  
Vinit Kumar Gunjan *Editors*

# ICDSMLA 2019

Proceedings of the 1st International  
Conference on Data Science, Machine  
Learning and Applications

## Abstract

---

Volatility of housing prices is difficult to predict and varies based on several factors like area and year of purchase. This paper summarizes the results of the prediction of housing prices through Linear Regression, K-Means Clustering, Logistic Regression, Auto Regressive Integrated Moving Average and an Artificial Neural Network. The neural network can classify whether the price of a particular house is above or below the average market value. The performance of machine learning algorithms, is measured using metrics like Precision, Recall, F1-Score, while the ANN described predicts the price range of a newly entered data point, hence paving the way for potential real-time prediction.



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**Abstract:**

University dropout is an issue which influences all colleges around the globe, such as, decreased enrolment, diminished income for the college, and monetary misfortunes for the State which supports the investigations, and establishes a social issue for undergraduate studies, their families, and society at large. Henceforth the significance of anticipating the percentage of dropout, in other words, recognize drop out of the undergraduate studies ahead of time, helps us to develop prior plans and solutions/alternative procedures to handle this issue. Here University data is isolated by utilizing Hadoop with HDFS, map-reduce, sqoop, hive and R. By employing these for the University data, find the better performer, average and poor performers, as well as their sports excellence, other skills, their participation interests, other activities involvement and other factors to isolate the poor performers and the students who are likely in the thought process of dropping out. By filtering such students priorly, helps us to suggest their department heads and by which proper attention may be given to these students and retain them without dropping out. It helps us to concentrate and practice extra care for these low performers and push them for scoring better grades. Various sorts of learning framework can be utilized to limit the odds of being a dropout. This will lessen the dropout paces of the college undergraduate studies.

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# Abstract

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## Document Sections

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II. Proposed Methodology

III. Results and Discussion

IV. Conclusion



Neeraj Priyadarshi  
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Ranjeeta Patel *Editors*

# Advances in Power Systems and Energy Management

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## Abstract

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In this era of digital evaluation, social media plays a vital role in human life. Even though it has both pros and cons, through these medium, a great amount of knowledge can be gathered to understand the personality traits of Human behavior. This paper provides an insight on different types of prediction method used using Facebook dataset for identifying personality traits. By reviewing all those works, an ontology enriched sentimental analysis concept was proposed in identifying the personality traits in Facebook.

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**Abstract:**

Performance Appraisal is an evaluation process done by every company to analyze whether the goals and outlines of that company or organization have been met by the employees or not. It helps to evaluate each and every recruit in terms of their skills, knowledge, identify their strengths and weaknesses and gives them a report for future improvement. The organizations overall performance includes the individual contribution of the each employee which becomes the resultant or actual output which is measured with the intended output which the organization's higher officials set in order to achieve it. The appraisal system is generally irregular and is often influenced by personal views which make the organization to use a method which overcomes all such irregularities. This paper consists an implementation of an intelligent performance appraisal model which surmounts such factors and irregularities by using machine learning algorithms. The present scenario of performance appraisal involves more manual work in evaluation which is not accurate. It involves various aspects where the appraisal will be favorable only to a certain group of employees based on certain factors but by using machine learning algorithms we can improve and increase the accuracy to make sure that the employees would get the appraisal without any prejudice and will ensure a fair evaluation which is by considering all the required factors. We use powerful "scikitlearn" machine learning systems in python, for building a model for the classification of performance of the employees. We use clustering techniques to implement a self-learning model i.e. unsupervised learning models. We also use an ensemble of these techniques for increasing our accuracy.

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2020 IEEE International Conference  
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19-20 Feb. 2021



**Abstract:**

The advanced world has been influenced by a great deal of sicknesses, and step by step new ones continues arising. Yet, no infection has endangered the humankind as much as ovarian cancer disease. It has taken more women living souls than some other illness. Ovarian cancers principally taking place from the ovaries, generally, in the female's reproductive glands of ovaries have been encountered tumour. The most important aim of the proposed work is ultrasound ovarian tumour segmentation and subsequently apply ultrasound image is in step by step approach, namely pre-processing and segmentation. In the pre-processing stage, noise such as Speckle Noise, Adaptive Anisotropic Diffusion Filter and Contrast Limited Adaptive Histogram Equalization (CLAHE) used to improve Contrast Adjustment of Ultrasound tumour images and in the segmentation stage, Ovarian tumour are segmented using the GrabCut and FL-SNN Model algorithm. After that, to extract features from Ultrasound tumour image, which is used by statistical texture feature of Gray level Co-occurrence Matrix (GLCM). At long last, Hybrid of GrabCut method and Fuzzy Logic -SNN Model algorithm are processed extracted features of ovarian tumour and this method efficiently segments the tumour area. In the proposed model the subsequent parameters such as bias and weight play a significant part in segmenting the area of tumour. Consequently, it is optimizing the weight parameter value using a Whale search optimisation algorithm. This proposed system gives better and efficient result over existing method.



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III. Proposed Workflow Model

IV. Proposed Method Of  
Ovarian Tumour  
Segmentation

V. Results And Discussions



ISSN 2374-3458  
CODEN BBRAJ

Volume 10 Number 1 1 January 2020

# Biomedical and Biotechnology Research Journal (BBRJ)

ISSN 2374-3458

Journal of Biomedical & Biotechnology Research (BBBR)

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## Abstract

**Background:** Cancer continues to be one of the world's deadliest diseases. New antibiotics with unique modes of action are urgently needed and therefore extensive research has been undertaken on novel anti-cancer antibiotics from natural resources. The aim of this present study was undertaken to characterize the marine actinobacterial strain CN2 isolated from Andaman and Nicobar Islands and also to evaluate its antiproliferative activity on HeLa cervical cancer cell line. **Methods:** Antiproliferative effect of the ethyl acetate extract was evaluated on HeLa cell lines by MTT assay and the oxidative stress was determined by lipid peroxidation and glutathione reductase changes in the antioxidant status. To understand the mode of antiproliferative effect, intracellular ROS levels by DCFH-DA method, mitochondrial membrane potential alterations by Rh-123 staining, oxidative DNA damage by comet assay, and apoptotic morphological changes by AO/EtBr-staining method were studied. **Results:** Based on the studied phenotypic, chemotaxonomic and molecular characteristics, strain CN2 was identified as *Nocardiopsis* sp. and it showed 99.9% similarity with *N. exhalans* (EU570349). However differences observed in certain phenotypic properties between strain CN2 and its close related species *N. exhalans* evidenced its novelty at strain level. Actinobacterial extract enhanced the ROS level, as evidenced by the increased DCF fluorescence. Further, it altered the mitochondrial membrane potential and increased the oxidative DNA damage and apoptotic morphological changes in HeLa cell lines. **Conclusion:** This is the first report on antiproliferative activity of the rare actinobacterium, *Nocardiopsis* sp. from Andaman and Nicobar Islands. Further production, purification and characterization of active metabolite from the ethyl acetate extract will pave the way for promising anticancer drug development.

**Keywords:** Cervical cancer, fermentation, marine actinobacteria, MTT assay, *Nocardiopsis*



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15-17 June 2020

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**Abstract:**

This electronic document is a "live" template which defines about one of the most challenging health issue in the 21<sup>st</sup> century which is known as DIABETES.

**Published in:** [2020 4th International Conference on Trends in Electronics and Informatics \(ICOEI\)](#)(48184)

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**DOI:** [10.1109/ICOEI48184.2020.9142887](https://doi.org/10.1109/ICOEI48184.2020.9142887)

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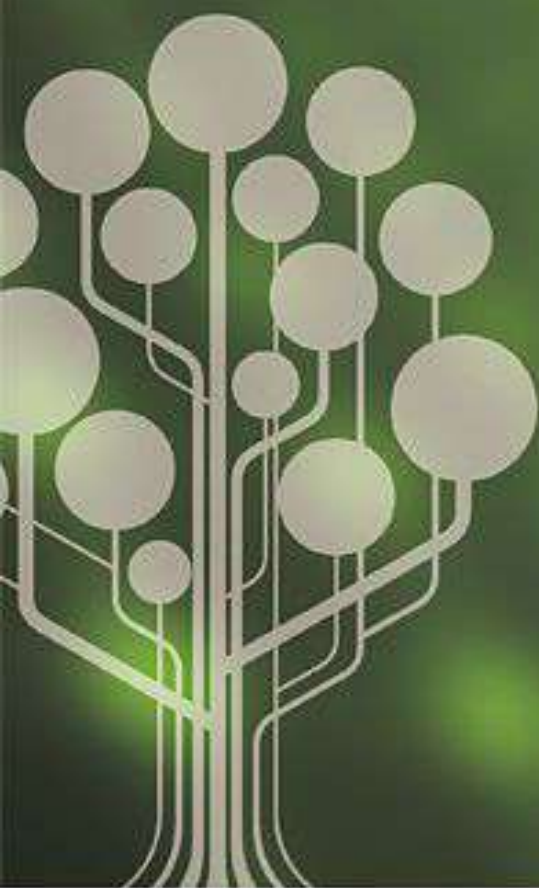




Volume 28 November 2022 ISSN 2352-1864

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# Abstract

The present work aims to prepare magnesium aluminate nanoparticles ( $\text{MgAl}_2\text{O}_4$  NPs) using aluminum isopropoxide and magnesium ethoxide by hydrolysis reaction and to investigate them as new adsorbent materials for the extraction and clean-up of dimethomorph pesticide from tap water. The  $\text{MgAl}_2\text{O}_4$  NPs were characterized by X-ray powder diffraction (XRD), Fourier-transform infrared spectroscopy (FTIR), field emission scanning electron microscopy (FESEM), and high-resolution transmission electron microscopy (HRTEM). The XRD result confirmed the formation of the spinal cubic structure in the fabricated sample. A solid-phase extraction (SPE) cartridge packed with  $\text{MgAl}_2\text{O}_4$  NPs was used to extract dimethomorph pesticide from water samples. The extracted pesticide solution was quantified using a validated liquid chromatography mass spectrometry (LC-MS-MS) method. The limit of quantification (LOQ) was found to be  $1\mu\text{g/L}$ , signifying the sensitivity of the LC-MS-MS. The water samples were passed through the cartridges and investigated to find the adsorption strength of the pesticides under the influence of temperature, volume of sample, flow rate, pH and ionic strength on the efficiency of the cartridge. The extraction efficiency of the developed  $\text{MgAl}_2\text{O}_4$  NPs SPE was found to be higher than that of commercially available SPE- $C_{18}$  cartridge. The average recoveries of the pesticides ranged from 90%–94% which was obtained at two different fortification levels of 1 and  $10\mu\text{g/L}$  using  $\text{MgAl}_2\text{O}_4$  NPs SPE.



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Declaration of Competing Interest

Acknowledgment

Clean Energy Production Technologies

Neha Srivastava  
Manish Srivastava  
P. K. Mishra  
Vijai Kumar Gupta *Editors*

# Microbial Strategies for Techno-economic Biofuel Production



Springer



## Abstract

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Fossil fuel which is the current source for energy supply is responsible for environmental pollution. Recently, renewable source comes as a substitute for this because of the depletion of fossil fuel resources and thus its inability to meet the future energy demand. Renewable energy now used is the wind, solar, biomasses, hydrogen and geothermal source. Among them, biomass is more ideal because of its efficiency in converting to liquid biofuel directly. Main conversion routes of biomass to biofuels include pyrolysis, gasification, liquefaction, hydrolysis, anaerobic transesterification and digestion. In all the methods, development of high-quality product with the optimized process is needed, which requires the use of modern science like nanotechnology. Over the last few decades, uses of active nanocatalyst for biofuel productions have been rapidly increasing. Nanocatalyst with size less than 5 nm shows a good catalytic property.

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13 September 2020

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Clean Energy Production Technologies

Neha Srivastava

Manish Srivastava

P. K. Mishra

Vijai Kumar Gupta *Editors*

# Microbial Strategies for Techno-economic Biofuel Production

 Springer

## Abstract

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Fossil fuel which is the current source for energy supply is responsible for environmental pollution. Recently, renewable source comes as a substitute for this because of the depletion of fossil fuel resources and thus its inability to meet the future energy demand. Renewable energy now used is the wind, solar, biomasses, hydrogen and geothermal source. Among them, biomass is more ideal because of its efficiency in converting to liquid biofuel directly. Main conversion routes of biomass to biofuels include pyrolysis, gasification, liquefaction, hydrolysis, anaerobic transesterification and digestion. In all the methods, development of high-quality product with the optimized process is needed, which requires the use of modern science like nanotechnology. Over the last few decades, uses of active nanocatalyst for biofuel productions have been rapidly increasing. Nanocatalyst with size less than 5 nm shows a good catalytic property.



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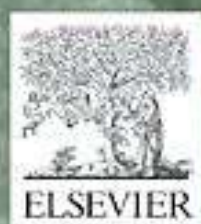
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# Biocatalysis and Agricultural Biotechnology

The Official Journal of the  
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Biotechnology (ISBAB)





## Abstract

Taxol is a member of the taxane family of chemotherapy drugs, which includes cabazitaxel and docetaxel that have a promising role as anti-cancer drugs for specific human cancers. Hence, in order to meet the requirement, an alternative source for Taxol production, such as filamentous fungi is needed. In this study, a different endophytic fungus was obtained from a particular medicinal plant, *Tarenna asiatica*, and was selected for Taxol production. Among 28 screened fungi, only six fungal species produced Taxol in the modified liquid medium. The novel Taxol-producing endophytic fungi were identified through morphological and molecular identification using DNA sequencing and phylogenetic tree construction as Aspergillus oryzae. The structure of Taxol obtained from *A. oryzae* was identified with the appropriate control using an ultraviolet-visible (UV-Vis) spectrophotometer (235 nm), thin layer chromatography (TLC), liquid chromatography-mass spectrometry (LC-MS), and Fourier-transform infrared (FTIR) analysis. The fungal Taxol (95.04 µg/L) from the *A. oryzae* exhibits potent in vitro activity against selected cell line (Human Lung Cancer Cell Line- NCI-H460).

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**Abstract:**

Gentry, Sahai, and Waters created the first identity-based encryption (IBE) and lattice-based cryptography in CRYPTO 2013. This scheme is improved in this paper by exploiting the US National Security Agency's (NSA) hashing function. POSIX is used to create a small and portable algorithm to assimilate multiple keys under a single identity-key that enables protection under different identities to be evaluated as one. The encryption renders the original file transformed by splitting it and encrypting the resulting files before encrypting the combination as a whole. Focus has been converged on modulating and modifying available encryption techniques to be processed as multiple segments of a single algorithm for more robust and powerful application. Both, the passkey as well as the data is encrypted using sets of pre-defined encryption techniques and the algorithm is processed via legacy libraries to be more versatile and provide an easy to implement scheme. The algorithm is developed to be applied in the instances of standalone dataset or in cases of virtualization where the algorithm can be inherited by the subsystems as modules to be used for security purposes.

**Published in:** 2020 4th International Conference on Trends in Electronics and Informatics (ICOEI)(48184)

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**Publisher:** IEEE

**Conference Location:** Tirunelveli, India

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V. Results and Discussions



Karma Sonam Sherpa  
Akash Kumar Bhoi  
Akhtar Kalam  
Manoj Kumar Mishra *Editors*

# Advances in Smart Grid and Renewable Energy

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## Abstract

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Right now, characterize every one of those perspectives as a component of item and present a multi-dimensional opinion investigation approach for banking audits. Specifically, we utilize an opinion dictionary extending instrument to expel the word equivocalness among various measurements and propose a calculation for feeling examination on banking surveys dependent on rules and a dimensional conclusion vocabulary. Make word net lexicon: In this kind of record, every single positive word is worked out independently and every negative word is worked out at one spot. Extraction of dataset: First dataset of openly accessible financial audits was downloaded from the Web, and afterward the entry extraction system distinguishes significant segments of the content which is generally illustrative of the substance of the record. All the more explicitly, this progression includes distinguishing and extricating those particular financial highlights and the conclusions on them.

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## Abstract

Antarctica holds about 70% of all the freshwater on the planet in the form of ice. The seawater, it chills, affect the currents and temperature everywhere. Global warming risks the melting of the icecaps as it has already increased the ocean temperature by 1 °C to the West Antarctic peninsula since 1955. A better understanding of the microbial community in this extreme environment of utmost importance is of interest to the scientific community. Herein, we document our metagenomics analysis of the microbial diversity and abundance in the Southern Ocean [Lat 55° 33' 396 S; Lon 55° 31' 448 E] using Next Generation Sequencing (NGS), QIIME 1.9.1, Silvangs and a naïve Bayesian classifier. Such metagenomics data hold the potential to aid predictive analysis, which is critical to our understanding of the dynamics of the microbial communities and their role in the Southern Ocean at present and in the future.

**Keywords:** Metabolic functions; Microbial diversity; Proteobacteria; Southern ocean.

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## Abstract

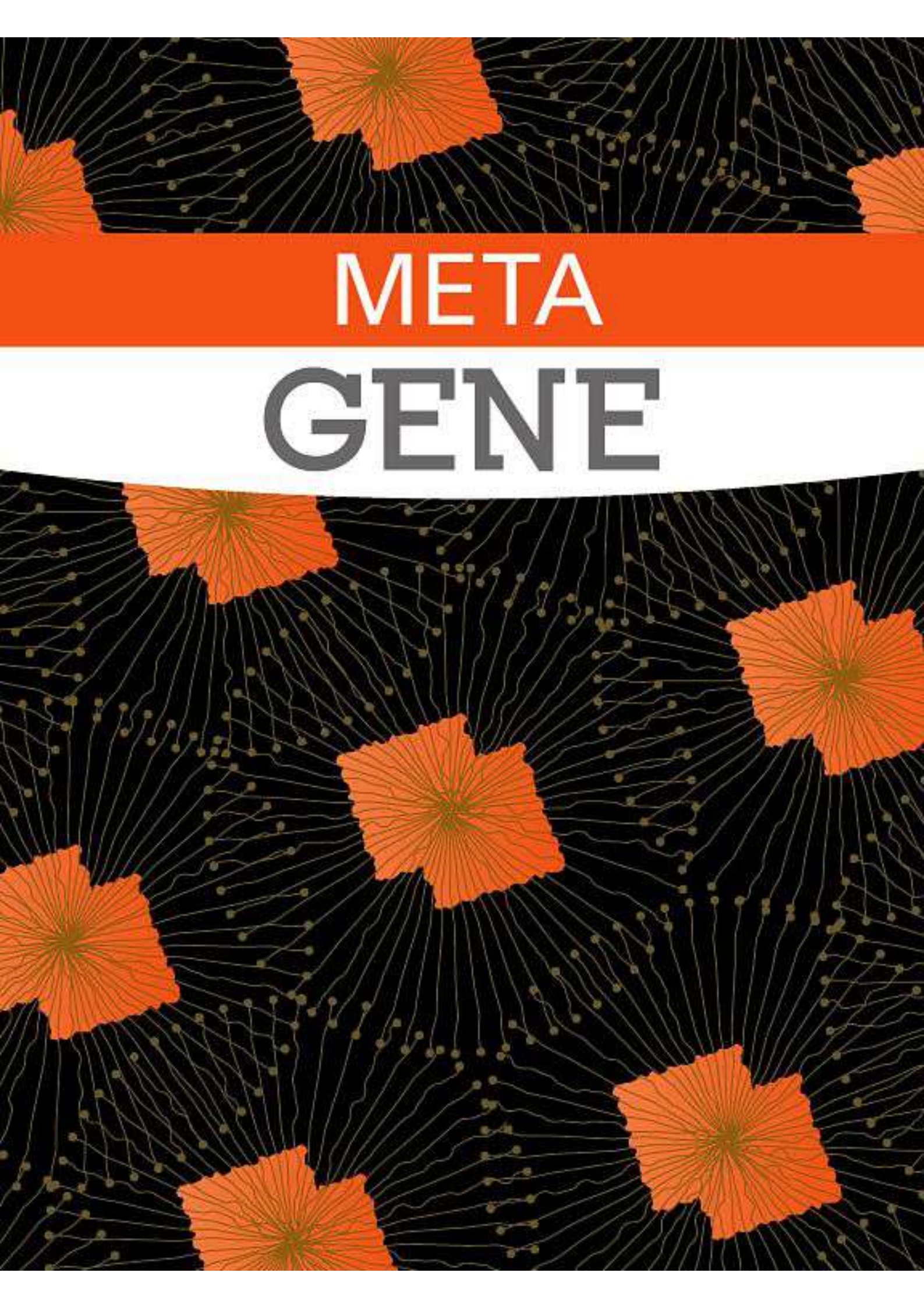
Malachite green (MG), a triphenylmethane dye is extensively used for coloring silk, aquaculture and textile industries, it has also has been reported toxic to life forms. This study aimed to investigate the biodegradation potential of MG by actinobacteria. The potent actinobacterial strain S20 used in this study was isolated from forest soil (Sabarimala, Kerala, India) and identified as *Streptomyces chrestomyceticus* based on phenotype and molecular features. Strain S20 degraded MG up to  $59.65 \pm 0.68\%$  was studied in MSM medium and MG ( $300 \text{ mg l}^{-1}$ ) and degradation was increased (90-99%) by additions of 1% glucose and yeast extract into the medium at pH 7. The treated metabolites from MG by S20 characterized by FT-IR and GC-MS. The results showed MG has been degraded into nontoxic compounds evaluated by (1) phytotoxic assay on *Vigna radiata*, (2) microbial toxicity on *Staphylococcus aureus*, *Bacillus subtilis*, *Micrococcus luteus*, *Streptococcus* sp. and *Escherichia coli*, (3) cytotoxicity assay in a human cell line (MCF 7). The toxicity studies demonstrated that the byproducts from MG degradation by *S. chrestomyceticus* S20 were no toxic to plants and microbes and less toxic to human cells as compared to the parent MG. Perhaps this is the first work reported on biodegradation of MG by *S. chrestomyceticus* which could be a potential candidate for the removal of MG from various environments.

**Keywords:** Acetyl benzoic acid; Biodegradation; Cytotoxicity assay; Malachite green; *Streptomyces chrestomyceticus*.

Affiliations  expand

PMID: 32249356 DOI: [10.1007/s00449-020-02339-z](https://doi.org/10.1007/s00449-020-02339-z)





# META GENE



## Abstract

Actinobacteria have been an excellent source of novel antibiotics for several decades. However, their community remains unexplored in the pond sediments. The metagenomic analysis holds immense potential for identifying rare and uncharacterized microorganisms from many ecological habitats. The present study was designed to delineate and understand the bacterial diversity with special focus on Actinobacteria in pond sediment collected from Sanjeeviraya Hanuman Temple, Tamil Nadu, India. The sediment had an average temperature (25.32°C), pH (7.13), salinity (0.960 Mmhos/cm) and high organic content (10.7%) posing minimal stress on growth condition of the microbial community. Subsequent molecular manipulations, sequencing and metagenomics analysis of 16S rRNA confirmed the presence of 40 phyla, 100 classes, 223 orders, 319 families and 308 genera in the sediment sample dominated by Acidobacteria (18.14%), Proteobacteria (15.13%), Chloroflexi (12.34%), Actinobacteria (10.84%), and, Cyanobacteria (5.58%). Within the Actinobacteria phylum, Acidothermus (29.68%) was the predominant genus followed by Actinospica (17.65%), Streptomyces (14.64%), Nocardia (4.55%) and Sinomonas (2.9%). At the species level, only 15.2% within the Actinobacterial phylum were assigned to cultured species. This study reveals the huge unexplored diversity of Actinobacterial community indicating that the microbial ecology of pond sediment is a neglected field which needs attention and also illustrates the highly enriched bioactivity with potential pharmaceutical and industrial significance.

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## Marine Algae: A Potential Resource of Anti-HSV Molecules

by Mohamad Fawzi Mahomoodally <sup>1</sup> Devina Lobino <sup>1</sup> Kannan R. R. Rongasamy <sup>2</sup> Shanmugeraj Gowrishanker <sup>3</sup> Devesh Tewari <sup>4</sup> Gokhan Zengin <sup>5</sup> Doo Hwan Kim <sup>2</sup> and Iyyakkannu Sivanesan <sup>2,\*</sup>

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<sup>3</sup> Department of Biotechnology, Science Campus, Alagappa University, Karaikudi 630 003, India

<sup>4</sup> Department of Pharmacognosy, School of Pharmaceutical Sciences, Lovely Professional University, Phagwara, Punjab 144411, India

<sup>5</sup> Department of Biology, Science Faculty, Selcuk University, Campus, Konya 42250, Turkey

\* Author to whom correspondence should be addressed.

*Processes* **2019**, *7*(12), 887; <https://doi.org/10.3390/pr7120887>

## Abstract

: Herpes simplex viruses (HSVs) are common human pathogens belonging to the subfamily *alpha-herpesvirinae* that trigger severe infections in neonates and immunocompromised patients. After primary infection, the HSVs establish a lifelong latent infection in the vegetative neural ganglia of their hosts. HSV infections contribute to substantial disease burden in humans as well as in newborns. Despite a fair number of drugs being available for the treatment of HSV infections, new, effective, and safe antiviral agents, exerting different mechanisms of action, are urgently required, mainly due to the increasing number of resistant strains. Accumulating pieces of evidence have suggested that structurally diverse compounds from marine algae possess promising anti-HSV potentials. Several studies have documented a variety of algal polysaccharides possessing anti-HSV activity, including carrageenan and fucan. This review aimed to compile previous anti-HSV studies on marine algae-derived compounds, especially sulfated polysaccharides, along with their mode of action, toward their development as novel natural anti-HSV agents for future investigations.

**Keywords:** virus; natural product; green algae; brown algae; red algae; antiviral; human infections; phytochemicals; *Herpesviridae*; sulfated polysaccharides

*Processes* **2019**, *7*(12), 887; <https://doi.org/10.3390/pr7120887>

**Received: 29 September 2019 / Revised: 1 November 2019 / Accepted: 25 November 2019 /  
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2020 4th International Conference on Intelligent Computing and Control Systems (ICICCS)  
13-15 Mar 2020

DOI: 10.1109/ICICCS48265.2020

**Abstract:**

Fight detection is still an open quandary for video concept detection. There has been little prosperity in engendering an algorithm that can detect the fight in surveillance videos with high-performance values. The proposed methodology is called Haar Cascade. Firstly, motion vector images are trained by using a machine learning algorithm for the consecutive frames. Secondly, motion vector features are extracted to their angles and magnitudes. Afterwards, velocity and angle-based motion co-occurrence features are calculated by considering both current and past motion vectors. The result obtained using the proposed algorithm in different videos got a high rate of success. It discriminates fighting scenes with high true positive rates. By using this methodology, can eradicate violence, crime, fights, etc. This is helpful to reduce violence and make the way to detect fights happen also. While comparing to the existing project, this gives a high rate of detection.

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15-17 June 2020

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**Abstract:**

Malaria is the deadliest disease in the earth and big hectic work for the health department. The traditional way of diagnosing malaria is by schematic examining blood smears of human beings for parasite-infected red blood cells under the microscope by lab or qualified technicians. This process is inefficient and the diagnosis depends on the experience and well knowledgeable person needed for the examination. Deep Learning algorithms have been applied to malaria blood smears for diagnosis before. However, practical performance has not been sufficient so far. This paper proposes a new and highly robust machine learning model based on a convolutional neural network (CNN) which automatically classifies and predicts infected cells in thin blood smears on standard microscope slides. A ten-fold cross-validation layer of the convolutional neural network on 27,558 single-cell images is used to understand the parameter of the cell. Three types of CNN models are compared based on their accuracy and select the precise accurate - Basic CNN, VGG-19 Frozen CNN, and VGG-19 Fine Tuned CNN. Then by comparing the accuracy of the three models, the model with a higher rate of accuracy is acquired.

**Published in:** [2020 4th International Conference on Trends in Electronics and Informatics \(ICOEI\)](#)(48184)



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2020 3rd International Conference on Intelligent Sustainable Systems (ICISS)

3-5 Dec. 2020

DOI: [10.1109/ICISS49785.2020](https://doi.org/10.1109/ICISS49785.2020)

**Abstract:**

Gestational diabetes is found among majority of the Indian pregnant women, when un-attended may give birth defects to child. Diabetes, which is caused by the rise in level of glucose in blood, has many latest devices to identify from blood samples. Diabetes, when unnoticed may bring many serious diseases like heart attack, kidney disease. In this way there is a requirement for solid research and learning models enhancement in the field of gestational diabetes finding and analysis. This research work has proposed a machine learning knowledge, for example, Decision Tree J48 calculation for diabetes forecast. Decision Tree is one of the powerful classification models. The dataset considered of 768 patients data with major 8 features and a target column with result "Positive" or "Negative". Experiment is done with weka, outcome of our demonstration shows that Decision Tree J48 calculation gives more efficiency with less processing time.

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### *In-vitro* Anti-inflammatory and *in-silico* Anti-aging Properties of *Psidium guajava* Leaves

Raghavi R<sup>1,2</sup>, Mohamoodha N<sup>2</sup>, Chalapandian K<sup>2</sup>, Rajasekar, T<sup>1</sup>, Wilson Aruni<sup>2,3,4</sup> and Jerrine Joseph<sup>2\*</sup>

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#### ABSTRACT:

The present study has been aimed to evaluate the anti-inflammatory property of *P. guajava* leaves by *in-vitro* using HRBC membrane stabilization method and anti-aging potential by *in-silico* method using AutoDock. The anti-inflammatory and anti-aging activity of leaf extracts of *Psidium guajava* collected from North Chennai region, India were evaluated in the present study. The *in-vitro* method showed significant anti-inflammatory property and anti-aging potential by binding with the target. The maximum membrane stabilization depicting the anti-inflammatory activity of *P. guajava* extracts was found to be 50% at a dose of 750 ug/mL. The effect of ascorbic acid from *P. guajava* leaves extract for preventing skin aging showing minimal binding energy for binding ligand (ascorbic acid) with the target protein (AP-1) was observed.

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**2020 Second International Conference on Inventive Research in Computing Applications (ICIRCA)**DOI: [10.1109/ICIRCA48905.2020](https://doi.org/10.1109/ICIRCA48905.2020)

15-17 July 2020

**Abstract:**

In recent days, people are prone to many diseases that can be detected effectively through scans. The severity of the problem can be analyzed by taking periodic scans and the treatment also depends on the same. The intensity based image registration was applied to the mammography images in the previous works. In this paper, the evaluation of the intensity based image registration is made on the brain MRI (Magnetic Resonance Imaging) images which are used frequently among people suffering from any brain disorders. The image registration is the process of detecting the distortion that occurs in the image from its original structure. The intensity based registration technique is used to avoid human intervention and make the process convenient for patients. The image registration is performed using various metrics and methods that vary from global transformations to the local transformations. The similarity metrics used for image registration are the sum of the squared differences and mutual information. These metrics are evaluated using the three registration methods namely: Affine, Demons and Hybrid (Affine + B-Spline). The algorithm that results with higher similarity image is taken to be the efficient image registration algorithm for Brain MRI images. MATLAB has been used to analyze this idea and had produced better results.

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Akash Kumar Bhoi  
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# Advances in Systems, Control and Automations

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## Abstract

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An artificial neural network (ANN) is an data processing methodology that is coming up with an idea of biological nervous systems. An artificial neural network is an association of many artificial neurons that are coupled together according to specific network architecture. The objective of the neural network is to create the inputs through meaningful outputs. The plan of models for time arrangement forecast has discovered a strong establishment of insights. Right now, present a half and a half to deal with produce a total plan of a neural system for displaying and estimating time arrangement. This paper investigated the chance of building up a wind speed forecasting prototype utilizing artificial neural networks and ARIMA which could be utilized to gauge the Sathyabama Institute of Science and Technology Meteorological station Tamil Nadu, India, utilizing SPSS programming and Python. As indicated by the outcome, it tends to be inferred that half breed ANN model could deliver an adequate forecast of wind speed. The conjecture from 2015 wind speed is determined and validated dependent on the chosen model.

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15-17 June 2020



**Abstract:**

Lately mining of information from online life is pulling in more consideration because of the blast in the development of Big Data. In security, Big Data manages an assortment of immense advanced data for investigating, envisioning and to draw the bits of knowledge for the expectation and anticipation of digital assaults. Big Data Analytics (BDA) is the term composed by experts to portray the art of dealing with, taking care of and gathering a great deal of data for future evaluation. Data is being made at an upsetting rate. The quick improvement of the Internet, Internet of Things (IoT) and other creative advances are the rule liable gatherings behind this proceeded with advancement. The data made is an impression of the earth, it is conveyed out of, along these lines can use the data got away from structures to understand the internal exercises of that system. This has become a significant element in cyber security where the objective is to secure resources. Moreover, the developing estimation of information has made large information a high worth objective. Right now, investigate ongoing exploration works in cyber security comparable to huge information and feature how Big information is secured and how huge information can likewise be utilized as a device for cyber security. Simultaneously, a Big Data based concentrated log investigation framework is actualized to distinguish the system traffic happened with assailants through DDOS, SQL Injection and Bruce Force assault. The log record is naturally transmitted to the brought together cloud server and big information is started in the investigation process.

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## International Conference on Computer, Communication and Signal Processing (ICCCSP)

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28-29 Sept. 2020

**Abstract:**

Affirmation of traffic signs (TSR) is a popular bit of some ADA (ADAS) and vehicle drivers ' (ADS) schemes. As either the leading main technology of TSR, unveiling of traffic signs (TSD) is a worrying issue due to various styles, small size, complicated riding scenarios and obstacles. From late on various TSD figurations also relied on the view of the computer and even the pattern. A full description of the TSD structure is given in this article. We recommend splitting the field procedures under review into two rule groups: possibility-based, form-based systems. The proposed system is exhaustively apportioned into, data planning, data gathering, and getting ready and testing. System uses variety of picture planning strategies to improve the image quality and to oust non-illuminating pixel, and recognizing edges. Feature extractors are used to find the features of picture. Moved AI figuring Convolutional Neural Networks (CNN) is used to gather the differing traffic sign pictures reliant on their features by using the progressing camera.

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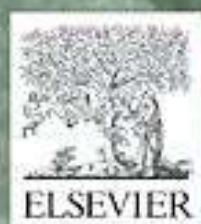
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# Biocatalysis and Agricultural Biotechnology

The Official Journal of the  
International Society of  
Biocatalysis and Agricultural  
Biotechnology (ISBAB)





## Abstract

Cyanobacteria are rich sources of structurally novel and biologically active metabolites with antibacterial, antiviral, antifungal, and anticancer activities. The present study aimed to evaluate the antimicrobial, antioxidant, and toxicity potential of freshwater filamentous cyanobacterial species isolated from a freshwater source in Kancheepuram district and Thiruverumbur, Tamilnadu. Among the tested two cyanobacterial species, methanol-chloroform extracts of Oscillatoria sp. SSCM01 exhibits higher antibacterial activity than Phormidium sp. SSCM02. Oscillatoria sp. SSCM01 exhibited higher inhibition activity of bacterial growth at 31.2µg/mL and 7.8µg/mL as MIC value against Staphylococcus aureus, Salmonella typhi, respectively, and for Candida albicans at 125µg/mL. Antioxidant activity of Oscillatoria sp. SSCM01 extract assessed by DPPH assay exhibited potent radical scavenging activity of 48% inhibition at 60µg/mL concentration. Two cyanobacterial extracts exhibited significant activity against brine shrimp larvae (Artemia salina). The active fraction was subsequently analyzed by gas chromatography-mass spectrometry (GC-MS), bioactive compounds like hexadecanoic acid (66.3%), 1, 2-benzene dicarboxylic acid, and dibutyl phthalate were detected in Oscillatoria sp. SSCM01. Thus, our findings indicate that freshwater cyanobacteria Oscillatoria sp. SSCM01 has an inherent capability that might make it beneficial as a promising source of antimicrobial and antioxidant therapeutic agents.

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In Vitro Activity of Selected Medicinal Plant Extracts Against *Mycobacterium tuberculosis* and other Non Mycobacterial Pathogens

Vaishnavi Chandramouli, Anusha Ramasamy, Radhakrishnan Manikkam, Anbarasu Sivaraj, Wilson Aruni and Jerrine Joseph\*

Centre for Drug Discovery and Development, Col. Dr. Jeppiaar Research Park, Sathyabama Institute of Science and Technology, Chennai – 600 119, Tamil Nadu, India

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#### ABSTRACT:

Use of medicinal plants for the treatment of infectious and life style diseases is since time immemorial. This study reports the *in vitro* antibacterial activity of selected medicinal plant extracts against *Mycobacterium tuberculosis* H37Rv and other non-mycobacterial pathogens. Fruits of *S. torvum*, *Z. mauritiana* and leaves of *V.negundo* were sequentially extracted using n-hexane, ethyl acetate and methanol. All n-hexane, ethyl acetate and methanol extracts were screened against clinical pathogens viz., *S. aureus* ATCC 29213, *P. aeruginosa* ATCC 27853, Carbapenem resistant *K. pneumoniae* ATCC 700603 and *V. parahaemolyticus* by agar well diffusion method at 10 µg/µL concentration. The methanol extract of *S. torvum* and ethyl acetate extract of *V.negundo* and *Z.mauritiana* demonstrated 17 and 23 mm inhibition against the non-mycobacterial pathogens, respectively. The three extracts were also screened for anti-tubercular activity against *M. tuberculosis* H37Rv using Luciferase Reporter Phage (LRP) assay. All the three extracts were exhibited anti TB activity at 500 µg/ml concentration. In particular, the *S. torvum* extract was showed 98.46% inhibition. GC-MS analysis of the afore mentioned extracts yielded peaks of compounds of ethnomedicinal value/significance. Findings of this study depicted that the medicinal plant *S. torvum* deserves the potential for isolation of anti TB molecules.

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## Insilico Docking Studies of Phytomolecules As Anti-Breast Cancer Agents



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## **ABSTRACT:**

Breast cancer is the most frequent cancer among women. The present study focuses on the comparative in-silico based investigation of the plant natural compounds namely Cubenin, Curcumin, Delta Cadiene, Eugenol, Terpene and Quercetin binding efficacy towards HER2 and their intermolecular interactions were compared with the commercial drugs: Cyclophosphamide, Doxorubin, Letrozole, Methotrexate and Tamoxifen. The comparative molecular docking was performed with the natural compounds and the synthetic drugs used in breast cancer treatment against the target HER2. The molecular docking analysis was done using Discovery Studio. The ADME properties were also studied. The observation of the common binding site for all the ligands confirms the binding pocket; where the isolated compound agrees well with the binding residues and thus can be optimized further to arrive at a molecule that has a high binding affinity and low binding constant. The results of the docking studies carried out on HER2 provide an insight for the natural compounds having druggable properties. These results are supportive to confirm the natural compounds from plants as a better lead for cancer therapeutics. Thus, the results of the docking studies carried out on HER2 corroborate to the findings that the most suitable drug like properties are possessed by the compound. In comparison with other compounds natural compounds are better and it is druggable. This provides evidence of how a natural compounds from plants can be a source of potential anti- cancer agent. The preclinical studies will pave way for a potential anti-cancer compound.

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28-30 July 2020

DOI: [10.1109/ICCSP48568.2020](#)

**Abstract:**

In the present time deaths because of heart disease has become a significant issue roughly one individual kicks the bucket every moment because of heart disease. Machine learning includes man-made brainpower, and it is utilized in taking care of numerous issues in information science. One normal utilization of Machine learning is the expectation of a result dependent on existing information. The machine takes in designs from the current dataset, and afterward applies them to an obscure dataset so as to anticipate the result. Characterization is an amazing Machine learning strategy that is regularly utilized for forecast. Some order calculations anticipate with acceptable precision, while others show a constrained exactness. This paper explores a technique named outfit characterization, which is utilized for improving the exactness of frail calculations by consolidating different classifiers. Investigations with this apparatus were performed utilizing a heart disease dataset. The focal point of this paper isn't just on expanding the exactness of frail order calculations, yet in addition on the execution of the calculation with a restorative dataset, to demonstrate its utility to anticipate infection at a beginning period. The consequences of the investigation show that group strategies, for example, stowing and boosting, are viable in improving the expectation precision of feeble classifiers, and display palatable execution in distinguishing danger of heart disease.

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Volume 175

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# Advances in Electronics, Communication and Computing

Series Proceedings of ETACON 2020



## Abstract

In the prefecture of this project is to conjure an accurate but yet cost-effective, viable solutions used in detecting number plate region by implementing the system and technologies needed to process the image locally and convolution neural network (CNN). In the world of smart cities, the object detection algorithm has become a crucial element in it's working. In urban surveillance applications, the image sensor/camera acts as a crucial aspect in the process of virtualizing the scene in which the scenario is monitored. A singular united deep convolutional neural network has been proposed that enables the ability to detect car/bike license plates to be obtained from a certain captured image and aids in recognizing the labels that have been captured. The whole structural integrity involves the need of any heuristic or tiring processes, such as the use of any provisional plate types or distinct character differences and also eliminates any intermediate procedures.



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**Abstract:**

The cloud supplier doesn't have recommendations concerning the data and the cloud information put away and kept up internationally anyplace in the cloud. The security assurance plans are normally founded on encryption innovation. There are numerous security saving techniques on the side to forestall information in the cloud. A three-layer stockpiling structure dependent on mist registering is proposed. The proposed structure can both exploit distributed storage and secure the protection of information. Here Hash-Solomon code calculation is intended to isolate information into various parts. If one information part missing, the information data is tend to loss. Right now is utilizing pail idea based calculations and secures the information data and afterward, it can show the security and proficiency in our plan. Also, in light of computational knowledge, this calculation can figure the conveyance extent put away in a cloud, mist, and neighborhood machine, individually Software as a Service (SaaS) client discharges their application on a facilitating situation which can be gotten to through system from different customers by application clients. The customer doesn't oversee or control the basic cloud foundation with the conceivable exemption of constrained client explicit application arrangement settings. Google Apps and Microsoft Office 365 are the models for SaaS.

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### **“Hindi Soap Operas Exposure and its Influence on Chennai Urban Women”**

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*Madras Christian College , Chennai-59*



### **Abstract:**

In a developing nation like India, Television media play a significant role in shaping society and culture. Today television media is the most-watched medium by all kinds of age groups, particularly homemakers. In recent years Hindi to Tamil dubbed soap operas has been influenced almost all aspects of our lives. Most of the homemakers are spend many hours with Television or Smartphone for watching soap operas. But over the years those mediums are contributed a lot to the positive and negative side for the whole world. This study was planned to conduct about viewing habits of homemakers through Television or Smart Phone. An effort was taken by the researcher to determine which sects of the programs are heavily watched by Chennai urban women. This study also will provide data like television viewers and what sort of Soap operas they are giving importance too. This study was conducted among 200 respondents belonging to the urban Chennai; areas are included Adyar, Anna Nagar, Kodambakkam and T-Nagar. The data was collected through a planned questionnaire. The outcomes of this basic study gave an insight into the role soap operas are played in influencing and shifting life and practices among the Chennai urban women. This study also provides basic input as to how soap operas are created social changes in the lives and minds of Chennai urban women.

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2020 International Conference on Communication and Signal Processing (ICCSP)

28-30 July 2020

DOI: 10.1109/ICCSP48568.2020

**Abstract:**

In this paper, we propose an improved whale search optimization technique for ovarian tumor segmentation in ultrasound images. First, we collect the feature from input images and extract to improve the quality of training data set which extracted from each of the images as the low-level texture features. Second, we introduce an improved whale search optimization technique for segmentation and cascaded as one fusion feature that can represent both the semantic context and the texture patterns distributed in the image. The proposed design is implemented in MATLAB tool and the performance is compare with the existing state-of-art techniques. The performance comparison shows the effectiveness of proposed design over existing segmentation designs.

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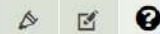
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**Identification of biostimulant and microbicide compounds from *Streptomyces* sp. UC1A-3 for plant growth promotion and disease control.**

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**Abstract :** The plant growth promotion and antagonistic potential of *Streptomyces* against phytopathogens was assessed. Total fourteen *Streptomyces* strains were derived from rhizosphere soil of *Capsicum annum* (Chilli) from the agricultural fields in Udhagamandalam, Nilgiris, Tamil Nadu, India. All strains were evaluated for plant growth promoting *in vitro* e.g. production of indole acetic acid, ammonia, siderophores, chitinase, cellulase, protease, amylase and inorganic phosphate solubilisation. In addition, antagonistic activity was also tested against *Ralstonia solanacearum*, *Xanthomonas oryzae*, *Fusarium oxysporum*, *Alternaria* sp., *Macrophomina* sp., and *Magnaporthe oryzae*. Further, bioactive compounds from the strain UC1A-3 was analyzed through gas chromatography-mass spectrometric technique. Three strains showed the highest level to promote plant growth promoting and antagonistic activity especially the strain UC1A-3 revealed maximum level of seed germination and increased shoot and root length in Chilli plants. Totally, twenty-nine compounds were detected, most of which were aromatic compound derivatives. In particular, Phthalic acid (C<sub>8</sub>H<sub>6</sub>O<sub>4</sub>), Pentadecanoic acid (C<sub>15</sub>H<sub>30</sub>O<sub>2</sub>), i-Propyl 12-methyltetradecanoate (C<sub>18</sub>H<sub>36</sub>O<sub>2</sub>), l-(+)-Ascorbic acid 2,6-dihexadecanoate (C<sub>38</sub>H<sub>68</sub>O<sub>8</sub>), 1-Nonadecene (C<sub>19</sub>H<sub>38</sub>), 1-Heptacosanol (C<sub>27</sub>H<sub>56</sub>O) were reported as antimicrobial properties. Findings of the present study evidenced that *Streptomyces* strain UC1A-3 would be a promising candidate for agricultural crop improvement, since it has showed the potential *in-vitro* plant growth and biocontrol activities against the tested phytopathogens.

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### Luciferase Reporter Phage (LRP) Assay for Anti Tuberculosis Screening: Current Status and Challenges

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## ABSTRACT:

Tuberculosis (TB) is a contagious airborne disease caused by a bacterium, *Mycobacterium tuberculosis* (MTB). Emergence of multi drug resistant (MDR) and extensively drug resistance (XDR) among *M. tuberculosis* strains urged the situation to discovery novel anti TB antibiotics. Many assays were developed based on the whole cell and target, but each having some limitations. Being a slow grower as well as air borne pathogen, adopting suitable assay for anti TB screening is challenging. Here, we discussed about the employment of Luciferase Reporter Phage (LRP) assay for the screening of wide range of compounds against *M. tuberculosis* strains including drug sensitive and drug resistant strains. Literature articles published between 2006 to March 2020 in reputed journal were collected through searching web of science, pubmed and other sites. This review focus on the articles published on screening of extracts and compounds from natural products, synthetic compounds and nanoparticles from the year 2006 – March 2020 by using LRP assay.

Among the whole cell assays, LRP assay provide the results in 72 hours and this assay can be used as preliminary identification of potential anti-TB compound. Hence, LRP assay is a rapid, simple and sensitive assay to screen natural molecules and synthetic compounds to determine their anti TB activity. However, limitations associated with mycobacteriophage entry into the mycobacterial cell need to be optimized to improve its sensitivity. Understanding the importance and advantages of employing LRP assay as an effective high throughput screening method helps in the significant screening of wide range of antimycobacterial agents in a relatively short time of incubation. This assay can effectively help in the development of new potential drug candidates against tuberculosis.

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