

International Conference on Innovations in  
**Science, Technology and Management**  
**iCISTM- 2022**

8<sup>th</sup> & 9<sup>th</sup> July, 2022 | Panhala, Kolhapur, India



Organized by

Holy-Wood Academy Kolhapur's,

**Sanjeevan**

**Engineering & Technology Institute (Diploma),**

Panhala, Kolhapur.

**PROCEEDINGS OF INTERNATIONAL CONFERENCE ON  
INNOVATIONS IN SCIENCE, TECHNOLOGY AND MANAGEMENT**



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## Mechanical / Manufacturing Engineering

- Recent trends in Manufacturing of Composites and Polymer Technology.
- Recent Developments in Non-conventional energy sources.
- Recent trends in field of Refrigeration & air-condition.
- Recent Advances in Total Quality Management.
- Nano/Micro manufacturing Technology.
- New trends in Automation and Mechatronics.
- Tribology.
- CAD/CAM/CAE Simulation.
- Resent trends in Machine tool Design and Manufacturing Technology.
- Industry 4.0

## Basic Sciences and Other

- Emerging Trends in Physics
- New Trends in Engineering Mathematics
- New Trends in Engineering Chemistry
- Recent Trends in Pharmacy

## Electronics and Telecommunication Engineering

- Advances in Wireless Communication;
- Adhoc / Sensor Network and Application
- Image and Signal Processing
- VLSI and Embedded System
- RF & Microwave Systems
- Advanced Power Electronics & Drivers
- Biomedical Engineering and applications
- Robotics/ PLC

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## Computer Science and Engineering

- Artificial Intelligence & Machine Learning
- Advances In Network Technologies
- Data Science & Data Analytics
- Cyber Security And Forensics
- Block chain
- Cloud, Fog And Edge Computing
- Internet of Things
- Distributed & Parallel Systems
- Software Architectures
- Multimedia & Gaming

## Civil Engineering

- Sustainable Construction Materials & Technology.
- Advanced Geoinformatic Applications in Civil Engineering.
- Construction & Safety Management.
- Sanitation & Environmental Engineering.
- Soil Mechanics & Foundation Engineering.
- Sustainable Infrastructure with Smart Technology.

## Innovations and Technology

- Innovations in Agriculture
- Virtual Reality
- Drone Technology
- Robotic Process Automation (RPA)
- Clean Energy
- Brain Mapping
- Smart Wind and Solar Power

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## Chemical Engineering

- Green Technology
- Emerging Trends in Chemical Engineering
- Recent Trends in Petroleum & Petrochemical Sector
- Recent Trends in Polymer & Plastic Technology
- Pharmaceutical, Biotechnology & Biomedical Engineering
- Energy Conservation in Chemical & Allied Industries & Sustainability
- Advanced Separation Techniques

## Architecture

- Green Buildings
- New Social Spaces
- 3D Printed Interiors
- Sustainability and Climate Resilience
- Innovations in Urban Design and Planning



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## Chief Patron

**Hon. Shri. P. R. Bhosale**

Chairman,  
Sanjeevan Knowledge City, Panhala.

**Hon. Shri. N. R. Bhosale**

Joint Secretary,  
Sanjeevan Knowledge City, Panhala.

## Convener

**Prof. Nishant Tharkar**

In-charge Principal,  
Sanjeevan Engineering &  
Technology Institute (Diploma),  
Panhala, Kolhapur.

**Dr. Ajit Ashok Katkar**

Professor, Mechanical  
Engineering Department,  
Sanjeevan Engineering Technology  
Institute, Panhala, Kolhapur.

## Member Secretary

**Dr. Gajanan Koli**

Professor, Mechanical Engineering  
Department, Sanjeevan Engineering  
and Technology Institute.

**Prof. Prasad P. Kulkarni**

Head of Electrical Engineering  
Department, Sanjeevan Engineering  
and Technology Institute.

## Organizing Committee

**Prof. Dhairyasheel Dinde**

**Prof. Taufik Mulla**

**Prof. Vidyashree Khot**

**Prof. Ankita Kulkarni**

**Prof. Sachin Ayarekar**

**Prof. Amol Solase**

**Prof. Ravindra Lohar**

**Prof. Shubham Patil**

**Prof. Vaishali Powar**

**Prof. Omkar Shinde**

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## Important Dates

**Paper Submission Last date: 1<sup>st</sup> July 2022**

**Registration Last date: 4<sup>th</sup> July 2022**

**Conference date: 8<sup>th</sup> and 9<sup>th</sup> July 2022**

## Publication Details

- All accepted papers will be published in Journal of **Emerging Technologies and Innovative Research (JETIR)** with **ISSN 2349-5162**
- Apart from above all authors will get additional benefit as all abstract of papers will be published in **Book of Abstract with ISBN**
- So papers will be published with **ISSN as well as ISBN**

1. Maximum six authors can be a part of one research paper.
2. Authors should follow paper template strictly.
3. All authors will get a printed certificate.
4. Only one conference KIT will be provided per one paper as per above registration fees.
5. Mention all names correctly in registration form for Printing of Certificates.
6. All papers will be published in Journal with ISSN number plus authors will get added advantage as well as book of abstract will be published with ISBN number.
7. Best paper prize will be given amongst papers in the conference.

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**Convener: Prof. Nishant Tharkar**

In-charge Principal,  
Sanjeevan Engineering & Technology Institute (Diploma).

**Convener : Dr. Ajit Ashok Katkar**

Professor, Mechanical Engineering Department,  
Sanjeevan Engineering & Technology Institute.

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# International Conference on Innovations in Science, Technology and Management : iCISTM- 2022

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## ABOUT INSTITUTE

### WELCOME TO SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

**WELCOME TO SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA**  
**SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE (SETI)** is an establishment of Sanjeevan, meets the needs of technology driven modern 21st Century. The Institute is approved by All India Council for Technical Education, New Delhi, recognized by Directorate of Technical Education, Govt. of Maharashtra and affiliated to Shivaji University, Kolhapur & Affiliated to Babasaheb Ambedkar Technological University, Lonere for First Year 2017-18 B.Tch / M.Tech

Sanjeevan Engineering & Technology Institute is long cherished dream of Founder-Chairman Mr. P. R. BHOSALE, an Educationalist having experience about two decades. His aim is to impart quality education to the students from nook and corner of the country. No doubt, Sanjeevan Engineers will be the best professionals with added values of Indian Heritage.



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## VISION

**SETI to Educate to Excel in Social Transformation.**

## MISSION

- To inculcate academic excellence in pursuit of technical education and to strive hard for good academic results and Placements.
- To attract nurture and to retain the best faculty and technical manpower.
- To develop the holistic personality of students to be a responsible citizen with ethical values and lifelong learning.
- To Promote industry institute interaction for employability and entrepreneurship.

## OBJECTIVE

- To enhance Professional Skills & Ideas
- To Cultivate Fraternal Spirit amongs Teachers & Staffs.
- To Bring About Effective Linkage between Industry Institute, Society.
- To develop Healthy & Ethical Attitude among Students towards work & Life.
- To Emphasize in education for developpe of Knowledge , Skills & Attitude for Entrepreneurship & in employment.
- To Provide Opportunities through Education to Rural & Deprived Sections of Society.

## QUALITY POLICY

**We Promice a conducive environment to our Faculty,Staff& Students to realise vision.**

**ENVIRONMENT POLICY:**

**Green Sanjeevvan , Clean Sanjeevvan.**

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## PATRON MESSAGE

**Hon. Shri.P.R.Bhosale**  
Chairman  
Sanjeevan Group of Schools,Panhala.



As a chairman of the Sanjeevan group of schools, Panhala, I am delighted to know about the recently organized iCISTM-2022 (International Conference of Innovations in Science , Technology and Management) by Sanjeevan Engineering and Technology Institute and the overwhelming response it got. Since its inception , We at Sanjeevan are striving to excel in the arena of education and establish the place where education of highest quality from K.G. to P.G. in diverse fields is catered. Since its modest beginning in 1994, the Sanjeevan group has now emerged as a powerhouse in the field of education. The group is consistently ranked at top in number of National and International ranking systems. The group aims to be leading entity in the field of education at all levels with unmatched quality. I would like to extend my best wishes to all the researchers who have participated in this edition of iCISTM -2022.

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8<sup>th</sup> & 9<sup>th</sup> July, 2022 | Panhala, Kolhapur, India



## Hon. Shri.N.R.Bhosale

Joint Secretary ,  
Sanjeevan Group of Schools, Panhala.



The Sanjeevan group welcomes all the researchers who have participated in this International Conference on Innovations in Science, Technology and management 2022.

Sanjeevan group has always tried to inculcate the spirit of innovation among every member of the organization. In continuation of this policy group decided that every year one international conference on innovations shall be organized through its unit of technical education ,Sanjeevan Engineering and Technology Institute. We plan to bring number of innovations being developed at every corner of the country on single platform annually .The first edition of this effort has received very good response. I congratulate all participants for their research work . All the Best.

# International Conference on Innovations in Science, Technology and Management : iCISTM- 2022

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## Prof. Nishant B. Tharkar

Principal  
Sanjeevan Engineering and Technology Institute  
(Diploma), Panhala.



The Sanjeevan Engineering and Technology Institute (Diploma) Panhala is extremely happy to host maiden edition of iCISTM 2022 ( International Conference on Innovations in Science, Technology and Management ). With the support of management of Sanjeevan group of schools and the efforts of convener and organizing committee the conference has proved to be a huge success. The conference has provided the platform for researchers to showcase their prowess in the field of innovations. The deliberations at the conference has strengthened the spirit of innovation and has contributed greatly in the process of original research. With the experience of this edition we will bring the next edition of the conference with more zeal and spirit.

## Dr. Ajit Ashok Katkar

Dean, Admissions.  
Sanjeevan Engineering and Technology Institute,  
Panhala.



As a Convener of iCISTM 2022 ( International Conference on innovations in Science, Technology, and Management ) I congratulate all participants of the conference. Through this conference we aimed to expose fraternity of technical education to innovations taking place at various places. The original research work of the participants shall be published in the international journal of repute in addition to be included as abstract in the book of proceedings with ISBN number. This will help to enhance the credentials of the research work of the participants. We received over 100 submissions for the conference. But due to our stringent policy of quality adherence our highly qualified and able team of advisory board selected about 60 research works for this conference. All non-accepted research works were suggested modifications and corrections. We will welcome these modified works in the next edition of conference. All selected works are of highest quality and the evaluators were deeply satisfied with the works of researchers. We aim to take this conference to next level in next edition of the conference in 2023. I wish all the best to all researchers for their research work .

## Best Wishes for iCISTM - 2022 DR. SANJAY HARI SAWANT

It gives me immense pleasure to pen down a few words for the International Conference on Innovations in Science, Technology and Management : iCISTM- 2022 which is a tremendous effort of the Sanjeevan Engineering & Technology Institute.

This International conference has opened new doors to the latest innovations and developments and I am sure it would provide participants with minute details much relevant for present day survival. I congratulate the entire team for the hard work they have put forth to give this international conference its much needed color and vigor. I wish them great success for the successful conduct of the entire event and hope this mission will be carried out with even more dynamism in the years ahead. This conference serves as a global platform for various forms of knowledge sharing irrespective of differences in time and geography. I hope this conference serves as an excellent forum to explore the role of innovative technologies in all sciences and engineering.

I am sure that this occasion will provide an affable environment for the researchers and academicians to freely exchange the views and ideas with others. I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the team for their laudable effort and also wish them grand success in conducting the events.



# DESIGN & DEVELOPMENT OF E-BICYCLE CONTROLLER

Rohit Mane<sup>1</sup>, Omkar Patil<sup>2</sup>, Pravin Arage<sup>3</sup>, Nishant Tikale<sup>4</sup>, Omkar B.Patil<sup>5</sup>.

G.A.Chougule<sup>6</sup>

<sup>1,2,3,4,5</sup>UG Student, <sup>6</sup>Professor

Department of Electrical Engineering,

Sharad Institute of Technology College of Engineering, Ichalkaranji (Yadrav)

## **Abstract :**

*This project deals with design and fabrication of a low-cost portable electric bicycle controller, which can be mounted on existing bicycle. It has two modes of drive; one is by pedaling and other one is by using electric motor. The developed controller and electric bicycle kit consists of 250W DC motor which is powered by 24V lead acid battery. E- bikes use rechargeable batteries and lead acid ones can travel up to 30km/hr and some electric bicycles speed can do excess of 30km/hr. There are two types of Electric Bicycle; one has a smaller motor to assist the rider's pedal power. The other one is more powerful E-bicycles which are closer to moped style functionality, but however all retain the ability to be pedaled by the rider. Major drawback of traditional bicycle is it increases rider fatigue on long distance travel. Thus implementing an external drive (electric motor), which can be switched between pedaling and electric drive and this will help to increase the range of travel, better riding experience and reduces rider fatigue. Expected range of E-bicycle is around 20-40 km on a single charge. E- bicycle can travel at a speed of 20 km/hr.*

# **PORTABLE SPOT WELDER DIE**

**Prof. V. R. Ghatage<sup>1</sup>, Miss. Pramita Tanaji Desai<sup>2</sup>, Mr. Ranjeet Ganpatrao**

**Ran<sup>3</sup>, Miss. Pratibha Balappa Hulloli<sup>4</sup>, Mr. Vijay Maruti Gawade<sup>5</sup>**

<sup>1,2,3,4,5,6</sup>Sant Gajanan Maharaj College Of Engineering, Mahagaon

## **Abstract :**

This innovation came about when the team could not find a suitable welding equipment to use in home. The normal, conventional welding machine can easily burn and damage the metal electrodes due to the intense heat produces the affecting large area. The conventional welding machine is not suitable for home uses and big in size and also expensive. Hence, a spot welder was built for home user, using components commonly available in good electronic labs.

# **AUGMENTED REALITY IN ENGINEERING EDUCATION : A REVIEW**

**<sup>1</sup>Sudhir B. Desai , <sup>2</sup>Dr. Vaishali P. Bhosale, <sup>3</sup>Dr. Ajit B. Kolekar**

<sup>1</sup>Assistant Director/ Assistant Professor, <sup>2</sup> Assistant Director/Assistant Professor, <sup>3</sup>  
Professor

<sup>1</sup>Yashwantrao Chavan School of Rural Development,

<sup>1</sup>Shivaji University, Kolhapur, Maharashtra, India

## **Abstract :**

The review presented application of Augmented Reality(AR) in engineering education. The representative 29 papers reviewed from Google Scholar, IEEE Xplore, Scopus, and Web of Science. The introduction section explains the term AR, followed by the limitations of traditional teaching methods and how AR can address those difficulties. The review section includes AR app development phases, tools and technology used, AR apps for engineering education and feedback on students acceptance of the technology, improvement in academic performance.

# **ARDUINO BASED DESIGN FOR DETECTION OF STEROID AND SPOILAGE OF FOOD**

**Prof. V. H. Melmuri<sup>1</sup>, Yogesh K. Patil<sup>2</sup>, Tejas J. Kawale<sup>3</sup>, Vaibhav S. Lohar<sup>4</sup>**

<sup>1</sup>Assistant Professor, <sup>2,3,4</sup>Student,

Department of Electronics and Telecommunication Engineering. Sant Gajanan  
Maharaj College of Engineering, Mahagaon, Kolhapur, Maharashtra. India 416503

## **Abstract :**

One of the main goods that people drink in greater amounts is milk. To boost the output of dairy for their own benefit, business people who are involved in dairy farming are injecting more steroids into the cow. When consumed in bigger quantities, these are detrimental to people and cause a variety of irregular health difficulties in their bodies.

With the aid of experimental studies on milk and meat products, this project outlines the measurement of steroid and Food spoilage detection using a sensor and a 16x2 LCD display. Breast cancer, prostate cancer, early puberties, and many other long- and short-term ailments are among the catastrophic illnesses that are being brought on by the rising levels of steroids in milk and meat.



# **A REVIEW ON USE OF 3D PRINTING FOR BATTERY MANUFACTURING.**

**Vaibhav S. Bhosale<sup>1</sup>, Pranav M. Gaikwad<sup>2</sup>, Nitikesh P. Maladkar<sup>3</sup>,  
Karansinha V. Desai<sup>4</sup>, Dr. Sunil J. Raykar<sup>5</sup>**

<sup>1,2,3,4</sup> Student, <sup>5</sup> Head of Department,

<sup>1,2,3,4,5</sup> Mechanical Engineering Department,

D.Y. Patil College of Engineering and Technology, Kasaba Bawada, Kolhapur  
416006, India

## **Abstract :**

Mobile electronics are fundamentally dependent on energy storage. The demand for ever smaller, more powerful batteries continues to grow. With the goal of improving battery electrochemical performance, reducing manufacturing costs, and expanding their applications, significant research has been conducted on electrode materials, electrolytes, and cell structures over the years. As fossil fuels become more expensive and the number of internal combustion engines increase, there is an increasing interest in researching and developing batteries for electric and hybrid vehicles. In the meantime, 3D printing is changing our world and the technology is rapidly advancing, rapidly becoming the basis for next-generation 3D printed energy architectures, where batteries and super-capacitors could be printed in virtually any shape.

# **SURFACE FINISH ANALYSIS OF EN-8 STEEL FOR DIFFERENT COOLANT**

**Omkar A. Patil<sup>1</sup>, Shantanu K. Tavade<sup>2</sup>**

<sup>1-2</sup> Mechanical Engineering Department,  
K.I.T College of Engineering, Kolhapur, India.

## **Abstract :**

Coolant plays very important role in improvement of surface roughness during machining. Variety of coolants are being used according to material and surface roughness requirements. Recently researchers are imposing questions on the use of coolants because of their hazardous effects on human health but still there is no other alternative have been identified for the coolants during machining. This paper presents investigation on use of two different coolants while turning EN 8 Steel components. Oil based and Water based coolants have been analysed for surface finish requirements of a lot of 110 components. The results indicate that water based coolants are more suitable and gives good surface finish during turning of EN 8Steel for a longer period of machining.

# DESIGN OF SOLAR POWER BASED MULTIPURPOSE AGRICULTURE ROBOT

**Bhosale A S<sup>1</sup>, Redekar P P<sup>2</sup>, Bamne B S<sup>3</sup>, Mathad V G<sup>4</sup>**

<sup>1,2,3</sup>UG Student, <sup>4</sup>Asst. Prof., Dept. of EEE

Sant Gajanan Maharaj College Of Engineering

Gadhinglaj, India

## **Abstract :**

In India nearly about 70 percentages of people are depending on agriculture. Numerous operations are performed in the agricultural field like seed sowing, grass cutting, ploughing etc. The present methods of seed sowing, pesticide spraying and grass cutting are difficult. The equipment's used for above actions are expensive and inconvenient to handle. So the agricultural system in India should be encouraged by developing a system which will reduce the man power and time. This work aims to design, develop and design of the robot which can sow the seeds, cut the grass and spray the pesticides, this whole system is powered by solar energy. The designed robot gets energy from solar panel and is operated using Wi- Fi/Android App which sends the signals to the robot for required mechanisms and movement of the robot. This increases the efficiency of seed sowing, spraying, ploughing and grass cutting and also reduces the problem encountered in manual planting.

# DESIGN OF FAST CHARGER FOR ELECTRIC VEHICLE

Prof.V.R.Ghatage<sup>1</sup>

Mayuri Salunkhe<sup>2</sup>, Sayali Mande<sup>3</sup>, Onkar Kumbhar<sup>4</sup>, Rahul kadukar<sup>5</sup>

<sup>1</sup>Assistant Professor, Sant Gajanan Maharaj College of Engineering Mahagaon

<sup>2,3,4,5</sup> Students, Sant Gajanan Maharaj College of Engineering Mahagaon

## Abstract :

Depleting fossil fuels and pressing global warming challenges are wreaking havoc towards the sustainable future of mankind. To cater these alarming issues, renewable energy sources and alternate means of energy harnessing have been investigated rigorously for last several decades. Similarly, transportation sector has also seen paramount reforms with electric vehicles now seen as potential competitors to conventional internal combustion vehicles (ICEV). The major challenge electric vehicles face today includes slothful battery charging rates and less electric driving range. The range can be extended by proper selection of electric motors. Ultrafast DC charging is concurrently pondered upon to ramp up the sluggish battery charging rates. Fast chargers technology has been helpful in greatly reducing the battery charging time. Different types of charging technologies and methods have been employed. This projects mainly focus on the combining the different technologies and designing a Fast charger for EV's.

Even with the advancement of the high technology nowadays, the popularity of electric vehicle is still limited and unable to make it a common usage. The main reason is due to the limitation of the battery pack which is bulky, heavy, slow charging, short lifespan and toxicity hazardous. Among these problems, slow charging speed becomes the main consideration when purchasing an electric vehicle. Hence, different charging methods have to be studied thoroughly to seek for the best solution to overcome these problems. In today's competitive battery charging method, a lot of charger manufacturers claim that they can amazingly short charge times of 30 minutes or less.

In this project, different charging method such as Constant Voltage charging, Constant Current charging, Pulsed charge etc, have been studied and compared to optimize the charging time suitable for different kind of battery pack.

# **FOOTSTEP POWER GENERATION**

**Snehal Patil<sup>1</sup>, Prachi Kothale<sup>2</sup>, Pratibha Chothe<sup>3</sup>, Sourabh Patil<sup>4</sup>,  
S. P. Gaikwad<sup>5</sup>, S. B. Patil<sup>6</sup>.**

1, 2,3,4 Under Graduate Students.

5 Assistant Professor, 6 Professor.

Department of Mechanical and Electronics Engineering,  
Dr. J. J. Magdum College of Engineering. Jaysingpur, Maharashtra, India.

## **Abstract :**

Nowadays energy and power is basic necessities of modern world. As the demand of energy is increasing day by day and the solution of that problem to use renewable sources like sun. Renewable source means to generate electricity from daily life. The objective of this work is power generation through footstep as a source of renewable energy that we can obtained while walking/stepping on to the certain arrangement like footpath, stairs, roads etc. and we are also used in public places like railway station, bus stand, parks and college campus also. The basic working principle of footstep power generation system is based on rack and pinion mechanism.

# **CENTRALIZED CRIME DATA BASED USING BLOCKCHAIN FOR FAST INVESTIGATION IN HUMAN TRAFFICKING**

**Prof.G.B.Kalkhamkar<sup>1</sup> , Nikita N Patil<sup>2</sup>, Sneha M Ghulanawar<sup>3</sup>,  
Madhuri S Bhaigade<sup>4</sup>**

<sup>1</sup>Assistant Professor. <sup>2,3,4</sup> Student, Department of Electronics and Telecommunication Engineering. Sant GajananMaharaj College of Engineering Mahagaon, Kolhapur, Maharashtra. India 416503

## **Abstract :**

In this paper, we have addressed the issue of delayed in the criminal investigation in case of human trafficking. We are using blockchain technology to register the identity of the victim or a criminal data. From the information of the criminal or the victim, if a criminal or victim is found at the airport or crowded areasthen his face will be detected. The detected face/data of that criminal or victim is being compared with our database. If the registered data is same, then it will be mailed to the nearest police station. With gps location and other details of criminal or victim.

# **LITERATURE SURVEY FOR ANALYSIS OF EFFECT OF PRINTING PARAMETERS ON ROUNDNESS OF FUSED DEPOSITION MODELING (FDM) PARTS**

**Adish A. Mandavkar<sup>1</sup>, Sairaj B. Patil<sup>2</sup>, Tejas U. Mohite<sup>3</sup>, Tushar A. Patole<sup>4</sup>,  
Chinmay V. Sutar<sup>5</sup>, Dr. Sunil J. Raykar<sup>6</sup>**

<sup>6</sup> Head of Department,

<sup>1-6</sup> Mechanical Engineering Department,

D.Y. Patil College of Engineering and Technology, Kasaba Bawada, Kolhapur  
416006, India

## **Abstract :**

A current manufacturing area focuses on various methods which can manufacture products with fine accuracy and quality with low wastage of material. Additive manufacturing also known as Rapid Prototyping is the technology which can accomplish demands of today's manufacturing industries. Fused Deposition Modelling is a one of the subtypes of 3D printing processes from additive manufacturing family to build polymer as well as metal components with greater accuracy with almost insignificant wastage of material.

# **LITERATURE SURVEY FOR EFFECT OF PROCESS PARAMETERS ON SURFACE ROUGHNESS OF 3D PRINTED PARTS WITH FUSED DEPOSITION MODELLING**

**Chinmay V. Sutar<sup>1</sup>, Adish A. Mandavkar<sup>2</sup>, Sairaj B. Patil<sup>3</sup>, Tejas U. Mohite<sup>4</sup>,  
Tushar A. Patole<sup>5</sup>, Dr. Sunil J. Raykar<sup>6</sup>**

<sup>6</sup>Head of Department,

<sup>1-6</sup>Mechanical Engineering Department,

D.Y. Patil College of Engineering and Technology, Kasaba Bawada, Kolhapur  
416006, India

## **Abstract :**

A current manufacturing scenario focuses on processes which can manufacture products at highest quality with minimum wastage of material. Additive manufacturing is one such technology which can fulfil demands of today's manufacturing organisation. Fused Deposition Modelling is a 3D printing process from additive manufacturing family to build polymer component accurately with almost negligible wastage of material.



# **DESIGN AND FABRICATION OF PAVER BLOCK MANUFACTURING MACHINE WITH WASTE PLASTIC AND CASTING SAND.**

**<sup>1</sup>P. Sarwade, <sup>2</sup>S. Shinde, <sup>3</sup>S. Gidde, <sup>4</sup>Y. Maner, <sup>5</sup>A. Pradhan, <sup>6</sup>V. Pasare**  
<sup>1,2,3,4,5</sup>U.G Scholar, <sup>6</sup>Assistant Professor, Department of Mechanical Engineering, D.  
Y. Patil Collage of Engineering and technology, Kolhapur, India

## **Abstract :**

Plastic waste management is a prominent issue in consideration of land and Ocean pollution. Every year 5.58 billion tons of single use plastic is produced in India and only 60% is been recycled. The plastic recycling is not affordable because of the need of segregation of various plastics from the waste and cleaning of the plastic waste is not economical. Considering this problem the project proposes a solution of converting these plastic to a paver block in specifically design machine without cleaning and segregation. In this machine the plastic waste and casting sand waste will be converted to a paver block. The machine works on simple principle of heating the plastic, mixing it with the sand and solidifying into a solid paver block. The paver block prepared from plastic are durable and affordable in cost.

# **ASPECT OF TOOL WEAR IN MACHINING OF INCONEL 718**

**Rutuj C. Satpute<sup>1</sup>, Nitin V. Titavekar<sup>2</sup>, Chaitanya C. Jagdale<sup>3</sup>, Abhay B.  
Randive<sup>4</sup>, Akshay V. Jadhav<sup>5</sup>, Sunil J. Raykar<sup>6</sup>**

<sup>6</sup> Head of Department,

<sup>1-6</sup> Mechanical Engineering Department,

D.Y. Patil College of Engineering and Technology, Kasaba Bawada, Kolhapur  
416006, India

## **Abstract :**

Machinability of Nickel-based superalloy Inconel 718 used in aerospace applications is the point offocus since many years. Inconel 718 is one of the most difficult to cut alloys. The properties which make Inconel 718 suitable to work in challenging environments at aero engines themselves increase the difficulty in its machining. This paper reviews the machinability aspect of Inconel 718 under various environments keeping in view important response parameters in machining such as tool wear, cutting forces and other surface integrity issues. Some possible solutions to improve the machinability of Inconel 718 are also suggested at the end.

# **BIODIESEL PRODUCTION USING C<sub>3</sub>N<sub>4</sub>-CAO PRODUCED FROM WASTE EGG SHELL AS A CATALYST**

**Prathamesh Chandrakant Jadhav<sup>1</sup>, Ruth Madhale<sup>2</sup>, Pallavi D. Bhang<sup>3</sup>, Tanaji  
Balawant Shinde<sup>4</sup>**

<sup>1</sup>Student Department of Mechanical Engineering,

<sup>2</sup>Assistant Department of Chemistry, School of Science,

<sup>3</sup>Faculty Department of Chemistry, School of Science,

<sup>4</sup>Faculty Department of Mechanical Engineering,

<sup>1,2,3,4</sup>Sanjay Ghodawat University, Kolhapur,

Maharashtra-416118

## **Abstract :**

The depletion of rock oil supplies, environmental concerns, rising demand for petro-diesel, supply instability, and rising rock oil prices have prompted a desire for alternate fuels. Biodiesel is the most versatile fuel for conventional diesel engines. In our efforts to overcome the limitations of homogeneous catalysis, we prepared a heterogeneous low cost C<sub>3</sub>N<sub>4</sub>-CaO catalyst created by exploitation waste egg shells and FFA from soya bean oil is employed as a feedstock. Catalytic performance was assessed with the transesterification of FFA of Soya-bin oil with n-butanol. CaO was found to be the best catalyst with 68% conversion. The catalyst was also found to be active when recycled and reused for two runs without loss of catalytic activity.

# **SUBJECTIVE ANSWER SCRIPT EVALUATION USING NATURAL LANGUAGE PROCESSING**

**Prateek Maheshwari<sup>1</sup>, Aditi Upadhyaya<sup>2</sup>, Sangeeta Mangesh<sup>3</sup>**

<sup>1,2</sup>Undergraduate Student, <sup>3</sup>Faculty,

<sup>1,2,3</sup> Department of ECE, JSS Academy of Technical Education Noida - 201301 (UP)

## **Abstract :**

The study projects a model developed to evaluate subjective answer scripts using NLP and Machine Learning. The motivation comes from the challenges encountered during the recent COVID-19 pandemic. This work presents the evaluation of subjective answers and automatically awards score based on the similarity feature and the answer keywords from the reference solution. The model is developed using Natural Language Processing model that takes advantage of key attributes from the descriptive answers in namely keywords, QST, and grammar. A Machine learning approach then is used to train this model using Gaussian naive Bayes approach yielding an accuracy of around 80%.

# **A REVIEW ON 360 FLEXIBLE DRILLING MACHINE**

**Nausheen Shaikh<sup>1</sup>, Snehal Kokitkar<sup>2</sup>, Sayali Kandalkar<sup>3</sup>, Nalini Sakhalkar<sup>4</sup>,  
Shruti Amare<sup>5</sup>, S. P. Gaikwad<sup>6</sup>.**

<sup>1, 2,3,4,5</sup>Under Graduate Students.

<sup>6</sup>Assistant Professor.

Department of Mechanical Engineering,

Dr. J. J. Magdum College of Engineering. Jaysingpur, Maharashtra, India.

## **Abstract :**

Drill machines are heart of every industry. The regular industrial work is drilling in parts, sheets and structures. Perfect and well aligned drilling needs fixed and strong drills. Some parts cannot be drilled using fixed drills due to low space between drill bit and drill bed. We need to use hand drills in such cases but hand drills have alignment problems while drilling. Nowadays, the drilling machine is developing very fast with more uses and application. In basic drilling machine, the machine work in particular direction which is the limitation in this machine. And there is more problem like space between the drill and job is very less. So here we propose a 360 degree flexible drill that can be mounted on a table or wall and can be used to drill holes horizontally, vertically or even upside down. So this makes it possible for easy drilling in even complicated parts and surfaces. Thus we use rotating hinges and connectors with motor mount and supporting structure to design and fabricate a mini 360 degree drill for easy drilling operations. In basic drilling machines, there is a problem of limitation of movement of drilling machine in different directions. Also there are problems of less space between drill bit and job and alignment problems. We can overcome these problems with the help of a 360 degree flexible drilling machine.

# **AUTOMATIC COVID-19 PATIENT MONITORING AND HEALTH CARING SYSTEM**

**Prof. M.A. Mulla<sup>1</sup>, Pradnya Takale<sup>2</sup>, Shreya Khawate<sup>3</sup>, Aishwarya Magdum<sup>4</sup>,  
ShitalRajmane<sup>5</sup>, Priti Bhakare<sup>6</sup>**

Electrical Engineering S.I.T.C.O.E, Ichalkaranji, Maharashtra, India<sup>1, 2, 3,4,5,6</sup>

## **Abstract :**

Internet of things (IoT) is one of the quickest growing technologies all over globe in the medical, agricultural and industrial fields. In this project it is used for transmitting the information of the patients like their oxygen level, heart rate and body temperature to the doctor or hospitals. According to the last situation of the pandemic and the increasing number of the infected people, the researchers started working on how to monitor the patient's information remotely in order to reduce the chance of infection. This project is all about an Automatic and affordable application which will help to reduce the transmission of COVID-19 infection. This device can help doctors and medical staff to monitor patient remotely at the same time it can help patients by monitoring their health on time and getting treatment on time. This project consists a device to measure heart rate, blood oxygen level, and body temperature; it also gives on time medicines to patient by using smart medicine box. An Arduino board with sensors is used to measure all records and send them to the cloud server.

# NEXT WORD PREDICTION USING RECURRENT NEURAL NETWORK

Rutuja Gosavi<sup>1</sup>, Pradnya Konduskar<sup>2</sup>, Pranav Chavan<sup>3</sup>, Ms. Jyoti Kundale<sup>4</sup>

<sup>1,2,3,4</sup>Department of Information Technology Ramrao Adik Institute of Technology  
Navi Mumbai

## **Abstract :**

Language modeling, where predicting the next word which is considered as very important tasks in Natural Language Processing (NLP) and also has a wide range of applications. Using the Nietzsche default text record to develop a model that will predict the customers' phrase after they have written n letters, the model will comprehend n letters and forecast the top words using the Recurrent Neural Network (RNN) neural network and Tensor flow. Our goal in developing this model was to predict 10 or more words in the shortest amount of time possible. Because a RNN has a long short-term memory, it can understand previous content and forecast words, which can assist the user to construct phrases. Their and others' lives as well as reduce risk. Also, the model is trained in such a way that it can understand Hinglish language and also can predict words based on it .operations We present a Bi-Directional Long short term memory network Long Short Term Memory (LSTM) which is a special kind of Neural Network. Recurrent Neural Network (RNN) in which our thing is to prognosticate the coming word for a given set of words in the model. Our model predicts the next word with an accuracy of 93%.

# **APPLICATION OF GREEN TECHNOLOGY FOR GREY WATER TREATMENT AND ITS REUSE - A REVIEW**

**Mrunalini P. Jagtap<sup>1</sup>, Sudhir B. Desai<sup>2</sup>**

<sup>1</sup>Assistant Professor, <sup>2</sup>Assistant Director/ Assistant Professor

<sup>1&2</sup> Yashwantrao Chavan School of Rural Development,

<sup>1</sup>Shivaji University, Kolhapur, India

## **Abstract :**

Water is the fundamental source of our survival. Day by day population is increasing therefore ultimately it affect on water demand and growing population give rise to generation of wastewater. It creates stress on sanitation and wastewater disposal system. Application of green technology for grey water management can be a better option for its reuse. Proper management of grey water and its reuse can reduce the demand of fresh water for daily purposes. In this paper, various green technology options are studied for grey water treatment and its reuse for various purposes.



# **MODIFICATION OF AAC BLOCK WITH PLASTIC FIBER'S**

**Mohd Ahmar Khan<sup>1</sup>, Mohit Kumar<sup>2</sup>, Richa Singh<sup>3</sup>, Hina Baghel<sup>4</sup> and Noorul Bashar<sup>5</sup>**

<sup>1,2,3,4</sup> U.G. Student, <sup>5</sup> Assistant Professor

<sup>1</sup> Civil Engineering Department

<sup>1</sup> V.C.T M., A.K.T.U., Lucknow

## **Abstract :**

The plastic waste is the hazardous problem in today's world. This is most dangerous problem in front of humanity. The most hazardous type of wastes are HDPE and PTE and the plastic below 50 micron is also causing a serious problem. These plastic mixed in the soil, it directly effects on fertility of the soil. Nowadays, the large amount of plastic is deposited into sea. This plastic wastes gives hazardous effect on the aquatic life and quality of seawater also polluted by this plastic. So, in this paper we have find a solution of this problem. As we are aware that AAC block is becoming a largest and growing construction material we are adding plastic bottle (PET bottle) along with AAC block. AAC block is generally made up of flash, quick lime, cement and gypsum along with aluminium powder mixes with plastic bottles that we are introducing in it. Plastic bottles can be collected in nearby all area.

# **PARTIAL REPLACEMENT AND UTILIZATION OF INDUSTRIAL WASTE IN PRODUCTION OF QUALITY CASTING**

**Kamble Bhushan Shankar<sup>1</sup>, Patil Hritik Praphulla<sup>2</sup>, Chokakkar Namrata J. <sup>3</sup>, Patil Harshad Sudhir<sup>4</sup>, Joshi Janhavi Vinod<sup>5</sup>,**

<sup>1</sup>Assistant Professor, <sup>2,3,4,5</sup>Final Year B.Tech students,

Dept of Mech. Engineering, KIT's College of Engineering (Autonomus) Kolhapur, MH, India,

## **Abstract :**

Red mud is a solid waste which is generated in the process of alumina production and is of highly alkaline. Red mud has very complex compositions but contains a variety of rare and valuable metals. In addition, its high alkalinity is a severe pollution to water, land, air and environment, which has been one of the main factors to affect the sustainable development of aluminum industry. Bayer Red mud which is a waste by product of Aluminum extraction process is dumped in large areas near the sea or nearby ponds. Bayer Red mud is dumped after the neutralization process. Neutralization is done by mechanics of seawater treatment. The mud is actively mixed with the seawater for a period of around 30 minutes to enable the reactions to take place. Clay content had significant effect on permeability, hardness or GCS while moisture content had a little effect. Through this project an attempt is made to carry out different experiments by making red mud a constituent in mold sand in different proportions and to manufacture castings and compare the resulting casting with regular casted component. Taguchi's process is used to optimize the process parameters which come into account in the experiments.

# **A REVIEW ON ANTENNA ARRAY FAILURE CORRECTION USING OPTIMIZATION TECHNIQUES**

**Narwant S.Grewal<sup>1</sup>, Jaspreet Kaur<sup>2</sup>, Navneet Kaur<sup>3</sup>**

<sup>1,3</sup>Assistant Professor, <sup>2</sup>Student

ECE Department

Guru Nanak Dev Engineering College, Ludhiana, India

## **Abstract :**

The need of an array antenna is to maximize gain, deliver diversity reception and stop distortion or noise. Some of the uses of antenna arrays contain radar communications, satellite communications, wireless communications, vehicular, airborne communications, signal intelligence, surveillance and reconnaissance, radio and TV signal transmission with GPS and navigation, remote sensing, biomedical and in the astronomical study. This paper gives a basics of an antenna, review of various optimization techniques and its summary. Because of the more elements in an array antenna so there is a chance of damaging of one or more elements and it is used to finish a symmetry of array antenna, interfere with the pattern by increased side lobe level. So many optimization techniques or algorithms are used to solve these drawbacks by enhancing the pattern in elements which are failed. We observe that BSO which shows good results in case of symmetrical linear array antenna as compared to these previous techniques. It is also supportive to all of the researchers to gain knowledge about various optimization techniques and their implementations in different tools which are mentioned in this review.

# **IMPACT OF WORK FUNCTION AND TEMPERATURE VARIATION ON SCHOTTKY-BARRIER HETERO-DIELECTRIC GATE ALL AROUND NANOWIRE FIELD EFFECT TRANSISTOR**

**Munaza Yousf<sup>1</sup>, Narwant Singh Grewal<sup>2</sup>, Gurpurneet Kaur<sup>3</sup>**

<sup>1</sup>M.Tech Student, <sup>2</sup>Associate Professor, <sup>3</sup>Assistant Professor

<sup>1,2,3</sup>Department of Electronics and Communication Engineering,

<sup>1,2,3</sup>Guru Nanak Dev Engineering College, Ludhiana, Punjab, India

## **Abstract :**

The GAA MOSFET (Gate All Around Metal Oxide Semiconductor Field Effect Transistor) technology have been considered as suitable one for implementation of digital circuits at nanoscale. The single metal Schottky barrier Source /drain GAA MOSFET devices have been designed using 5nm radius, 10nm channel length, and high-k gate dielectric gate oxide. The electrical characteristics of proposed devices like  $I_{ON}$ ,  $I_{OFF}$ ,  $I_{ON}/I_{OFF}$ , SS and DIBL have been evaluated for variable work function and temperature. The proposed devices showed diminished SS and DIBL as compared to existing literature. Hence, these proposed structures are suitable in low power design circuitry.

# **DESIGN AND IMPLEMENTATION OF IOT BASED SURVEILLANCE ROBOT**

**<sup>1</sup>Prof.Vishal Wadkar, <sup>2</sup>Pritee Dhere, <sup>3</sup>Rutwika Yamgar, <sup>4</sup>Pratiksha Vadar,  
<sup>5</sup>Rekha Mane, <sup>6</sup>Prajakta Kothale,**

<sup>1,2,3,4,5,6</sup>Department Of Electrical Engineering,

Sharad Institute of Technology Yadrav-Ichalakrnji, Maharashtra, India

## **Abstract :**

The main objective behind this paper is to develop a robot to perform act of surveillance in domestic areas. Nowadays robots play a vital role in our day-to-day life activities thus reducing human labor and error. Robots can be manually control or automatic based on the requirement. The purpose of this robot is roamed around and provide audio and video information from the given environment and to send obtained information to the user. In this system, one can control robot with the help of mobile or laptop through internet of things (IOT) and also can get live streaming of video both is daytime as well as at night with the help of wireless camera. This robot also uses various sensors that collects data and send it to the Arduino microcontroller which controls the robot behavior.

# **SMART HYBRID CHARGING STATION FOR ELECTRICAL VEHICLES**

**<sup>1</sup>Dr. K. Hussain, <sup>2</sup>Snehal Prakash Hulikire, <sup>3</sup>Divya Mahesh Patil, <sup>4</sup>Gouri  
Balkrishna Shinde,**

**<sup>5</sup>Divya Dadaso Biranje, <sup>6</sup>Rutuja Sudam Soundade**

<sup>1</sup>H.O.D. Electrical Department, <sup>2,3,4,5,6</sup> UG Student,

<sup>1,2,3,4,5,6</sup> Electrical Department, Sharad Institute of Technology College of Engineering,  
Yadrav, Ichalkaranji, India.

## **Abstract :**

The Indian vehicle market is at the exploratory stage of electrification. The transfiguration to electric mobility is an optimal strategy to reduce carbon footprint in the transport sector. Electric charging stations are an inevitable part of the electric vehicle ecosystem which supplies electric energy for the recharging of electric vehicles. This paper presents the design and expansion of an electric vehicle charging stations. The charging station is designed in a hybrid system with smart features. Energy to the charging ports is fed primarily by the solar energy and another source is assisting the system with electricity board. In the faulty environmental and electricity conditions there is a provision for battery backup. The terminal system is outlined into different charging ports according to the power consumption of electric vehicles.

# **DIGITAL GRAIN AUTOMATIC TELLER MACHINE**

**Mr. G. A. Chougule<sup>1</sup>, Mr.Sanmesh Sanjay Nikam<sup>2</sup>, Mr.Abhijit Sunil Shelke<sup>3</sup>,  
Mr.Pravin Dattatray More<sup>4</sup>, Mr.Aman Khalil Bedkyale<sup>5</sup>, Mr.Shubham  
Chandrakant Mane<sup>6</sup>**

<sup>1</sup>Project Guide, <sup>2,3,4,5,6</sup>Student, Department of Electrical, SITCOE Yadrav,India

## **Abstract :**

Every Indian Family issued ration card based on which given subsidized food grains are distributed. For distribution and storing of food grains, an effective smart approach is proposed in this paper. Due to manual distribution sometimes the user does not get actually measured food grains as it gets replaced with a poor quality of food grains. The main purpose of designing the system is to provide security for grains which are received from the government by the interfacing officer locking system. The proposed design provides ease of use to the customers. The presented system is offline as a database of user and officer is stored in memory according to the particular areas. The authentication is provided for the officer who loads the grains in a container and for the customer to receive the grains. Interchanging of food grains is prohibited after proper verification of identification number.

# **MODELLING AND MULTI-RESPONSE OPTIMIZATION OF FACE MILLING PROCESS BASED ON GRA APPROACH**

**Niket Vishnu Malvade<sup>1</sup>, Dr. Raju. S. Pawade<sup>2</sup>**

<sup>1</sup>Research Scholar, Department of Mechanical Engineering, Dr. Babasaheb  
Ambedkar Technological University, Lonere, Maharashtra, India

<sup>1</sup>Assistant Professor, Karmaveer Bhaurao Patil College of Engineering, Satara,  
Maharashtra, India.

<sup>2</sup>Associate Professor, Department of Mechanical Engineering, Dr. Babasaheb  
Ambedkar Technological University, Lonere, Maharashtra, India

## **Abstract :**

This research involves milling investigations on Magnesium Calcium Alloy with DLC coated carbide cutting inserts. The experiment was originally planned using the Central Composite method, which took into account the machining variables of depth of cut, feed, and spindle speed. Surface roughness and cutting forces were measured for each experimental run. Using the ANOVA method, the 95 percent confidence interval was used to test the models' adequacy. Because the influence of machining settings on surface roughness and cutting forces is conflicting, the topic is characterized as a multi-objective optimization problem. As a consequence, Gray relational analysis (GRA) was used to fit the values and identify the optimal solution. The ANOVA results showed that the feed rate has the greatest impact on surface roughness. For the principal cutting force, speed is a most significant influencing factor.



# **A TREE SEED TUNED PARTIAL TRANSMIT SEQUENCE APPROACH FOR IMPROVING PEAK TO AVERAGE POWER RATIO IN UNIVERSAL FILTERED MULTI CARRIER FOR 5G COMMUNICATION**

**<sup>1</sup>Rajiv Khanna, <sup>2</sup>Narawat Singh Grewal, <sup>3</sup>Harminder Kaur**

<sup>1</sup>M.tech student, <sup>2</sup>Head of the department, <sup>3</sup>Assistant Professor

Department of Electronics and Communications,  
Guru Nanak College of Engineering, Ludhiana, India

## **Abstract :**

Universal Filter Multi-Carrier (UFMC) plays a significant role in an asynchronous transmission because of its high spectral efficiency. However, the effectiveness and efficacy of the UFMC systems is hindered by the high peak to average ratio (PAPR), which in turn decreases the potency of power amplifiers. Over the years, a number of approaches have been developed for reducing the PAPR in UFMC systems; however these systems used conventional PAPR reduction techniques that were highly complex and ineffective. Therefore, an improved and reliable UFMC model is proposed in this paper that is based on Partial Training Sequence (PTS) and Tree Seed Algorithm (TSA). The main objective of the proposed model is to reduce the PAPR value and complexity of the UFMC systems. To achieve the desired objective, a signal is generated at the transmitted end and upon which modulation and filtration techniques are applied by using 16-QAM modulator and ChebyShev filter. The PTS then generates a wide range of phase combinations with reduced PAPR value and TSA selects the best signal with least PAPR. The performance of the proposed hybrid UFMC model is analyzed and compared with traditional UFMC and OFDM models in MATLAB software. The simulation outcomes were determined in terms of PAPR, BER and Spectral efficiency. The results attained showcased that proposed model is providing effective results with least PAPR values.

# **DESIGN OF ELECTRIC BICYCLE**

**Vinayak Parit<sup>1</sup>, Prashant Rendale<sup>2</sup>, Aniket Mithare<sup>3</sup>, Aniket Deasi<sup>4</sup>, Vaibhav Hodage<sup>5</sup>. A A Suryawanshi<sup>6</sup>**

<sup>1,2,3,4,5</sup> UG Student, <sup>6</sup>Professor.

Department of Electrical Engineering,  
Sharad Institute of Technology College of Engineering, Ichalkaranji (Yadrav)

## **Abstract :**

Modern world demands the high technology which can solve the current and future problems. Fossil fuel shortage is the main problem now-a-days. Considering current rate of usage of fossil fuels will let its life up to next five decades only. Undesirable climate change is the red indication for not to use more fossil fuel any more. Best alternative for the automobile fuels to provide the mobility & transportation to peoples is sustainable electrical bike. Future e-bike is the best technical application as a visionary solution for the better world and upcoming generation. E- bike comprises the features like high mobility efficiency, compact, electrically powered, comfortable riding experience, light weight vehicle. E-bike is the most versatile future vehicle considering its advantages.

# DESIGN AND FABRICATION OF PADDY TRANSPLANTING MACHINE

**Prof: R. V. Bammankatti<sup>1</sup>**

**Anushka Bhatale<sup>2</sup>, Sabiya Hawale<sup>3</sup>, Nikhil Koli<sup>4</sup>, Gajanan Patil<sup>5</sup>,**

**Abdulsaad Soudagar<sup>6</sup>**

<sup>1</sup>Assistant Professor, Sant Gajanan Maharaj College Of Engineering, Mahagaon

<sup>2,3,4,5,6</sup> Students Sant Gajanan Maharaj College Of Engineering, Mahagaon

## **Abstract :**

Manual method of seed planting results in low seed placement, spacing efficiencies, and serious back pain which confines the size of the field that can be planted. The cost price of imported planters has gone down. beyond the purchasing power of most of our farmers. Peasant farmers can do much to increase food production. especially grains, if hard work can be reduced or totally eliminated. removed from their planting operation. To get the best performance from a seed planter, the above limits are to be enhanced by proper design and selection of the components are essential for the machine to suit the needs of crops. The demand for a rice trans-planter machine is increasing nowadays because of its unique features in seeding. well arranged and in a good manner. Seeding by rice Trans-planters save so many human beings' struggles. The people who use this type of machine are farmers and the are economically poor. This paper provides directions for growth in rice planters used in India. Rice planting is This is a very old method from many years ago, and having long Their methods of rice planting have been in history for many years. changed in the last decade. rice trans-planter machine is increased, but current machines are expensive. So the main focus of this project is to reduce the cost of that machine.

# **SOLAR HYBRID ACCUMULATOR AND KINESIS TECHNIQUE OF ENERGY EFFICIENT STORAGE SYSTEM FOR ELECTRIC VEHICLES (SHAKTEE)**

**Omkar Shirdhone<sup>1</sup>, Vivek Shinde<sup>2</sup>, Harshvardhan Bhosale<sup>3</sup>, Vijay Sutar<sup>4</sup>, Prafull  
Nalavade<sup>5</sup>, P R Patil<sup>6</sup>.**

<sup>1,2,3,4,5</sup>UG Student, Professor<sup>6</sup>, Department of Electrical Engineering,  
Sharad Institute of Technology College of Engineering, Ichalkaranji (Yadrav)

## **Abstract :**

Proper design and sizing of Energy Storage and management is a crucial factor in Electric Vehicle (EV). It will result into efficient energy storage with reduced cost, increase in lifetime and vehicle range extension. Design and sizing calculations presented in this paper is based on theoretical concepts for the selected vehicle. This article also presents power management between two different energy storage devices i.e. dual energy device using the converter (Hybrid Energy Storage), a single energy storage device cannot fulfill all desirable characteristics. The main objective of Hybrid Energy Storage System and power management is to assist EV acceleration, capture regenerative braking. and the reduction of battery stress by maintaining battery current as constant as possible during transients and combining Supercapacitor (Ultracapacitor) to provide instantaneous current during transients respectively and also the recovery of power during deceleration. Performance of Hybrid Energy Storage System is analyzed by experimental setup. It is clearly observed that after implementing power management algorithm battery current is maintained as constant as possible during acceleration i.e. only average current is supplied by battery and during acceleration instantaneous current is supplied by supercapacitor.

**INVESTIGATION OF SHRINKAGE VARIATION IN 3D  
PRINTING MODELS  
OPTIMIZATION AND VARIATION OF SHRINKAGE  
WITH RESPECT TO PRINTING PARAMETERS FOR PLA  
MATERIAL IN 3D PRINTED OBJECTS**

**<sup>1</sup>Deepak D. Agalave, <sup>2</sup>Rushikesh J. Chavan, <sup>3</sup>Shubham B. Dalvi, <sup>4</sup>Aviraj S.  
Chougule, <sup>5</sup>Tohid S. Kudchikar and <sup>6</sup>Dipak A. Sawant**

<sup>1</sup>Research Student, <sup>2</sup>Research Student, <sup>3</sup>Research Student

<sup>1</sup>Mechanical Engineering,

<sup>1</sup>D. Y. Patil College of Engineering and Technology, Kolhapur, India

**Abstract :**

Fused deposition modeling (FDM) is most common method to print products with high complexity. The most vital parameters for FDM are infill density, infill pattern, layer thickness, printing speed, printing orientation, nozzle temperature and diameter. This study will investigate the effect of varying parameters on shrinkage of 3D printed objects. The parameters selected for this study are- infill percentage, layer thickness and printing speed. An array of 64 combinations of these parameters is obtained using Minitab software. Polylactic acid (PLA) material is used to print the 3D objects using all the combinations of printing parameters from the array. The object is designed using computer aided design (CAD) software. The object selected for printing is cuboid with circular hole at center, to demonstrate the shrinkage in both, linear dimensions as well as circular dimension. The printer used for this entire study is Creality 10S Pro. At the end, this study will provide a generalized equation for the dimensions based on actual obtained data, which can be used to determine the dimension of object theoretically before printing it, thus we can provide the necessary shrinkage allowance to the design.

# **HARDWARE IMPLEMENTATION OF GREY WOLF BASED OPTIMIZATION FRAMEWORK TO REDUCE POWER LOSS IN FORWARD CONVERTER TRANSFORMER**

Aparna Kadam<sup>1</sup>, Shruti Mali<sup>2</sup>, Samruddhi Chougule<sup>3</sup>, Rajwardhan Patil<sup>4</sup>, Aditya Patil<sup>5</sup>, Pavankumar R Patil<sup>6</sup>.

<sup>1,2,3,4,5</sup>UG Student, Professor<sup>6</sup>, Department of Electrical Engineering,  
Sharad Institute of Technology College of Engineering, Ichalkaranji (Yadrav)

## **Abstract :**

Power converters are required to connect local renewable energy sources to electrical loads and storage elements and connect several microgrids or nanogrids to the main power grid. These converters have a significant impact on the overall system's efficiency, reliability, cost, and dynamic performance. As a result, improving reliability and optimizing losses in the converter are desirable. Hence, in this proposed work, a novel Grey Wolf-based Boosting Intelligent Framework (GWbBIF) control algorithm is used to improve power system reliability through the incorporation of a forward converter at the system level. The planned work has been carried out with the help of the MATLAB/Simulink program. The simulation results will be confirmed through hardware implementation, and then compared to traditional methods to determine the significance of the proposed method. Over conventional methods, the projected method achieved lower THD, reduced power loss, and reduced error percentage. As a result of the overall performance analysis, the proposed GWbBIF method is more appropriate for the forward converter coordination system.

# **PRODUCED GASES ANALYSIS OF PLASTIC WASTE FOR ENERGY CONVERSION USING ARDUINO**

**Rucha Shete<sup>1</sup>, Gauri Malvankar<sup>2</sup>, Trupti Patil<sup>3</sup>, Anagha Patil<sup>4</sup>, Jaydeep  
Benade<sup>5</sup>, Prof. C.S. Patil<sup>6</sup>**

<sup>1,2,3,4,5</sup>Students, <sup>6</sup>Assistance Professor,

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Kolhapur, Maharashtra, India

## **Abstract :**

Plastic production has been rapidly growing across the world and, at the end of their use, many of the plastic products become waste disposed of in landfills or dispersed, causing serious environmental and health issues. From a sustainability point of view, the conversion of plastic waste to fuels or, better yet, to individual monomers, leads to a much greener waste management compared to landfill disposal. In this project, we systematically review the potential of pyrolysis as an effective thermochemical conversion method for the valorisation of plastic waste. Different pyrolysis types, along with the influence of operating conditions, e.g., catalyst types, temperature, type of gases produced, vapor residence time, and plastic waste types, quality, and applications of the cracking plastic products are discussed. The quality of pyrolysis plastic oil, before and after upgrading, is compared to conventional diesel fuel. Plastic oil has a heating value approximately equivalent to that of diesel fuel, i.e., 45 MJ/kg, no sulphur, a very low water and ash content, and an almost neutral pH, making it a promising alternative to conventional petroleum-based fuels. This oil, as-is or after minor modifications, can be readily used in conventional diesel engines.

# **PNEUMONIA DETECTION FROM CHEST X-RAY USING CNN AND DEEP LEARNING ALGORITHM**

**Amarsinh. B. Farakte<sup>1</sup>, Poonam S. Kokitkar<sup>2</sup>, Anita S. More<sup>3</sup>, Asmita A. Surange<sup>4</sup>**

<sup>1</sup>Assistant Professor, <sup>2,3,4</sup>Final Year UG students

<sup>1</sup>Department of Electronics and Telecommunication Engineering.

Sant Gajanan Maharaj College of Engineering, Mahagaon, Kolhapur (MH),

India - 416502

## **Abstract :**

Pneumonia is a bacterial infection that causes inflammation in the lungs. Early diagnosis is a key aspect in ensuring a successful treatment process. A skilled radiologist will usually diagnose the condition using chest X-ray images. Pneumonia affects a large number of people, particularly in developing and impoverished countries, where pollution, unsanitary living conditions, and overcrowding are all too widespread, along with a lack of medical infrastructure. Pneumonia is a bacterial infection that causes inflammation in the lungs. Early diagnosis is a key aspect in ensuring a successful treatment process. A skilled radiologist will usually diagnose the condition using chest X-ray images. Pneumonia affects a large number of people, particularly in poor and impoverished countries where pollution levels are high and living conditions are unsanitary. For some reasons, such as the presence of diseases that are obscure in chest X-ray pictures or can be confused with other conditions, diagnosis can be subjective. As a result, computer-assisted diagnostic systems are required to guide physicians. In this study about automated computer aided detection of pneumonia using deep learning were discussed and tabulated results for detection of pneumonia, as well as conclusions and future work.

Pneumonia produces pericardial effusion, which is a condition in which fluids fill the lung and create breathing problems. It is critical to diagnose pneumonia early in order to receive curative treatment and boost survival chances. The most common method for detecting pneumonia is chest X-ray imaging. However, examining chest X-rays is a difficult task that is vulnerable to subjective variability. We intend to develop a technique for detecting pneumonia using chest X-ray pictures in this project. When a data set of x-ray pictures was applied to the input, we used deep learning and a CNN-based algorithm to discriminate the forms of pneumonia with accurate locations.



# **DEVELOPMENT OF AN ARTIFICIAL RESPIRATORY DEVICE FOR EMERGENCY VENTILATION**

**<sup>1</sup>Chinmay A. Joshi, <sup>2</sup>Rahul C. Bhedasgaonkar**

<sup>1</sup> U. G. Student, Department of Mechanical Engineering, Kolhapur Institute of Technology's, College of Engineering (Autonomous), Kolhapur, Maharashtra, India

<sup>2</sup> Assistant Professor, Department of Mechanical Engineering, Kolhapur Institute of Technology's, College of Engineering (Autonomous), Kolhapur, Maharashtra, India

## **Abstract :**

This paper elaborates a novel research approach of an artificial respiratory device used for supplying artificial breath in respiratory failure condition by compression and controlling the function of Bag valve mask (BVM) using electro mechanical actuator and controlled by Arduino microcontroller. Two main parameters, Tidal volume and breaths per minute are considered as input variables. Paper also describes results of volumetric output of the device.

# **USE OF WASTE PLASTIC WITH BACTERIA COATING AS A SUSTAINABLE BUILDING MATERIAL IN CONCRETE**

**Prof. S.P. Narvekar<sup>1</sup>, Prathamesh Shivaji Dhumal<sup>2</sup>, Shankar Nitin Ganachari<sup>3</sup>,  
Kiran Rajendra Kori<sup>4</sup>, Kirtiraj Sambhaji Nalawade<sup>5</sup>, Ganesh Prabhakar  
Jadhav<sup>5</sup>**

Department of Civil Engineering, Sant Gajanan Maharaj College of Engineering  
Mahagaon, A/P Chichewadi Tal-Gadhinglaj, Dist.-Kolhapur 416502.

## **Abstract :**

The use of plastic is increasing day by day, although steps were taken to reduce its consumption. The suitability of recycled plastics shredded as coarse aggregate in concrete and its advantages are discussed here. Tests were conducted to determine the properties of plastic aggregate density, specific gravity and aggregate crushing value. As 100% replacement of natural coarse aggregate (NCA) with shredded plastic is not feasible, partial replacement at various percentage were examined. Higher compressive strength was found with 5% NCA replaced concrete.

# **RECENT DEVELOPMENTS IN NON-CONVENTIONAL ENERGY SOURCES IN INDIA**

**Prafulla Ravindra Bhanage**

Post Graduate Student

Department of Mechanical- Manufacturing Engineering

Rajarambapu Institute Of Technology Rajaramnagar, Islampur, Tal. Walwa, Dist.

Sangli, Maharashtra, India

## **Abstract :**

Power is the most paramount ingredient of infrastructure for growth in economics and welfare of a nation. Pure and environmentally friendly energy is of significant interest these days. Development for sustaining the growth of the Indian economy in the existing infrastructure is crucial. The power sector of India is one of the largest expanded power sectors in the world. This work seeks broad insights into the Indian renewable energy framework, policy, approach and socio-economic challenges. For maintaining the ratio of generation and demand of power, moving from conventional sources to non-conventional sources is not only an option, it is a necessity. The importance of using solar as an energy source in India's perspectives in not only to increase power generation, but also to expand energy reliability with considering the environmental, social, independent and financial beneficial properties. Although alternative energy maturation and expansion, improvements can be sought to increase the use of solar energy for conventional energy sources in India.

# **MICRO MANUFACTURING TECHNOLOGY – A STUDY OF MICRO ELECTRIC DISCHARGE MACHINING**

**<sup>1</sup>Namrata Sayaji Khot, <sup>2</sup> Dr. C. A. Waghmare**

<sup>1</sup>M.Tech student, <sup>2</sup>Assistant Professor

Mechanical Engineering Department

Rajarambapu Institute of Technology, Rajaramnagar, Islampur

## **Abstract :**

Micro electric discharge machining (micro EDM) is a Non-conventional machining process. Micro tool is used in micro EDM as compared to EDM process. Micro electrical discharge machining is one of the most Precise Technique for the fabrication of microstructures. Micro electric discharge machining is used for making very small parts 50 to 100 Micrometers. Precisely controlled spark is occurs in between electrode and workpiece. Dielectric fluid is used in between wire and workpiece for providing insulation and ionization effect at specific voltage. This paper describes about the principal, types of EDM process and different aspects of micro EDM technology.

# **SMART ANNOUNCEMENT AND IVRS SYSTEM FOR PUBLIC TRANSPORTATION**

**Prof. S.T.Matale<sup>1</sup>, Sonali M. Mangavkar<sup>2</sup>, Ankita A. Chougule.<sup>3</sup>,  
Maheshwari V. Lohar<sup>4</sup>**

<sup>1,2,3,4,5</sup>Department of Electronics and Telecommunication Engineering,  
Sant Gajanan Maharaj College of Engineering, Mahagoan, Kolhapur.

## **Abstract :**

The smart announcement and IVRS system is a bus detection and announcement system that uses RFID technology to make travelling and movement easier for blind people. In today's bus transportation system, each bus requires human intervention to report the bus number, arrival time, and departure time. This process takes at least 4-5 minutes for each stop, resulting in unnecessary time waste. Furthermore, passengers are frequently unable to obtain accurate information about bus arrivals and departures. To address this issue, we propose an RFID-based IVRS system. The developed system completely eliminates manual reporting, which may save passengers 15-20 minutes, which may increase depending on the number of stops in the journey. There were issues with the timing of the bus's arrival or departure also minimized. Furthermore, the system eliminates human intervention, which eliminates the possibility of errors occurring during reporting and announcement. In addition to these results, spending on dedicated staff only for announcements can be reduced. This project also offers ticketing and seat reservations.

# **MANUFACTURING OF PAINT USING NATURAL OBTAINED MATERIAL**

**<sup>1</sup>A.R. Patil, <sup>2</sup>Ruturaj Padwale, <sup>3</sup>Atharv Kulkarni, <sup>4</sup>Anuj Patil, <sup>5</sup>Pallavi Mohite, <sup>6</sup>  
Anjali Shrike**

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(Student), 5<sup>th</sup>Author (Student), 6<sup>th</sup>

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<sup>1</sup> Dr. D Y Patil College of Engineering &Technology Kolhapur 1<sup>st</sup> Author, Kolhapur  
(Maharashtra), India.

## **Abstract :**

The main objective of manufacturing of paint is to reduce the use of volatile materials present in paint. To supply the non-volatile paints which are helpful in killing bacteria and harmful organisms and serving a healthy friendly atmosphere. It can be further developed by making it washable and more durable. Better shelf-life cow dung acts as an insulator. It makes the room cooler in summer and warmer in winter comparatively to exterior temperature. In ancient times it had a medical importance, and considered as antiseptic in nature and it is widely available hence cost production is very low.

# **DESIGN AND DEVELOPMENT OF MULTISENSOR DATA FUSION SYSTEM FOR HUMAN SAFETY IN CLOSED CAR**

**Ruturaj Ramchandra Mohite**

Senior Software Developer, Bosch Global Software Technologies

## **Abstract :**

The suggested method offers a device for warning when a person is left in a car seat and the engine is off. Image processing on a camera inside a car helps identify the human inside. The system will automatically close the windows if a threat to people is identified. Additionally, the system will send the user a Telegram message. RaspberryPi is used to control the entire system. The oxygen and temperature levels, as well as the pressure on the seat, are regularly sent on the open source IoT platform ThingSpeak. There is currently no technology installed in automobiles to protect children from suffocation and heatstroke. If any threat due to suffocation or heatstroke is detected, the system will lower the windows automatically. The system will also send the user a message on Telegram. The values of pressure on the seat and oxygen and temperature levels are continuously sent on an open source IoT platform, ThingSpeak.

# CFD SIMULATION OF COMPOUND PARABOLIC COLLECTOR FOR TEXTILE INDUSTRY APPLICATIONS

G H Bargale<sup>1</sup> and Dr N K Chougule<sup>2</sup>

<sup>1</sup>Research Scholar, <sup>2</sup>Professor in Mechanical Engineering, Department of Mechanical Engineering,

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E-mail: [khotgargi1008@gmail.com](mailto:khotgargi1008@gmail.com)

## Abstract

In this study, Compound parabolic collector (CPC) with two absorber tubes was analysed using CFD simulation. CPC is a type of non-imaging solar concentrator. As it is positioned in E-W direction, it does not require frequent tracking leading to less maintenance and cost effective. CPC with concentration ratio of 5 was analysed using Ansys software. This study investigated the effect of different absorber tube diameters and different mass flow rates on the performance of CPC for the location Ichalkaranji, Manchester of Maharashtra (16.6886 °N, 74.4593 °E) for 8 daylight hours 8am to 4pm. Medium temperature process industries such as Textile Finishing, Spinning & weaving requires hot water of around 70°C to 90°C. It was proposed to analyse 100 LPD hot water system with CPC. CFD simulation for mass flow rate 0.0055kg/s and 58mm diameter of absorber tube gave output of hot water as 85 °C at atmospheric pressure. Even at lower flow rate with pressure around 4 to 4.4 bar hot water can be generated of around 145 °C. It was observed that it would fulfil the partial requirement of the textile process and sizing industry by reducing the consumption of coal, wood, etc., which will lead to a reduction in carbon dioxide gas emissions. It would indirectly support the national target of global sustainable development goal.



# **DESIGN AND DEVELOPMENT OF SOLAR OPERATED PESTICIDE SPRAYING VEHICLE**

**Abhishek More, Nikhil Kemble, Shatrughan Javir, Suraj Jadhav, Umesh Kamble, D.A. Sawant**

Department Of Mechanical Engineering, D.Y. Patil College Of Engineering And Technology,  
Kolhapur, Maharashtra, India

## **Abstract :**

Manual spraying of pesticides and herbicides on crops is quite a laborious work. Manual trimming of unwanted plants or harvested crops from field is also difficult. Our project proposes a multipurpose solar powered semiautomatic remote controlled vehicle with three-way adjustable chassis (i.e., the height, length and width) and plant mowing equipment. It is designed to spray pesticides directly on crops with minimum wastage and making it cost effective and environment friendly. With adjustable chassis it is suitable for many crop fields. Alternatively, it can also be used for watering gardens, maintaining lawns and in pandemic situations like covid-19 for spraying of sanitizer in hospitals. With the use of solar power for charging the battery we tried to reduce the dependency on grid power. Our project reduces noise pollution and is environment friendly as it uses electric power to operate pump instead of petrol or diesel motors. The device is operated through an application on mobile and bluetooth is used for connection. Automation in Indian agriculture industry will greatly help our country in development.



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3.	10th Marks Sheet	✓	✓	✓	✓	✓	✓
4.	10th Marks Passing Certificate	✓	✓	✓	✓	✓	✓
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4.	12th Marks Sheet (if applicable)	✓	✓	✓	✓	✓	✓
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7.	Caste Certificate	✓	✓	✓	✓	✓	N/A
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