ICSEM-2020

International Conference on Science, Engineering and Management

Bengaluru, Karnataka

24th - 25th January, 2020

Organized by:

Cambridge Institute of Technology North Campus (CITNC), Bengaluru, Karnataka, India

and

Institute For Engineering Research and Publication (IFERP)

Rudra Bhanu Satpathy
Chief Executive Officer
Institute For Engineering Research and Publication.

On behalf of **Institute For Engineering Research and Publication (IFERP)** in association with **Cambridge Institute of Technology North Campus (CITNC), Bengaluru** I am delighted to welcome all the delegates and participants around the globe to Cambridge Institute of Technology North Campus for the **"International Conference on Science, Engineering and Management (ICSEM-2020)"** Which will take place from **24th-25th January, 2020.**

It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinator **(IFERP & CITNC)** and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at **Bengaluru.**

Sincerely,

Rudra Bhanu Satpathy

Preface

The ***"International Conference on Science, Engineering and Management (ICSEM-2020)"*** is being organized jointly by ***Cambridge Institute of Technology North Campus,*** Bangalore, Karnataka, India in Association with ***IFERP-Institute for Engineering Research and Publication*** *on the 24th-25th January, 2020.*

Cambridge Institute of Technology North Campus has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Devanahalli in Bangalore, India.

The ***"International Conference on Science, Engineering and Management"*** was a notable event which brings Academia, Researchers, Engineers, Industry experts and Students together.

The purpose of this conference is to discuss applications and development in area of **"Science, Engineering and Management"** which were given International values by ***Institute for Engineering Research and Publication (IFERP).***

The International Conference attracted over 110 submissions. Through rigorous peer reviews 51 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

ICSEM-2020

Message from Chairman

Er. D. K. Mohan

Chairman

Cambridge Group of Institutions

Bengaluru, Karnataka, India

Respected Dignitaries,

Greetings to the dignitaries of the conference. I welcome you all to the **"International Conference on Science, Engineering and Management – 2020".** The word 'Research' can be put in simple terms as thinking. Thinking is so vital that it had been the only reason for the human survival and flourishment. In the present times, Multi-disciplinary research serves the similar purpose for because it can only lead the modern civilization to its peak. The conference emphasizes achievements in multi-disciplinary research. In this regard, I consider that the periphery of 'Achievements' should not be limited either to a new idea or magnanimous data, but it should be the wisdom that can lead the country to prosperity, Institutions towards excellence and people towards a better life.

I affirm that this conference- a collaboration of CIT-NC and IFERP would lead to global innovation, thereby leading humanity towards its peak. I would like to end by expressing my sincere gratitude for your service rendered towards humanity.

Er. D. K. Mohan

Patron

Message from Director

Dr. K. Udaya Kumar

Director

Cambridge Institute Technology, North Campus,

Bengaluru, Karnataka, India

"Research is to see what everybody else has seen, and to think what nobody else has thought"

A warm greeting to all, I feel privileged and enthusiastic in welcoming you all for the "International conference on Science, Engineering and Management-2020", which focusses on the multi discipline subjects that provides a highly competitive forum for reporting the latest developments in the research and application of those disciplines. We are pleased to present the proceedings of the conference as its published records. We hope that this program will further stimulate research and provide participants with enriched knowledge. We feel honored to serve the best research in the multidisciplinary subjects.

Dr. K. Udaya Kumar

Patron

Message from Principal

Dr. Narayana B. Dodda Pattar

Principal

Cambridge Institute Technology, North Campus

Bengaluru, Karnataka, India

On behalf of the organising committee I wish to express my gratitude to Cambridge Institute of Technology North Campus and IFERP for giving me an opportunity to host the International Conference on the theme, Science, Engineering and Management. The programme is enriched with an invited talk, and a Keynote speech, Plenary panel, Fast abstracts and birds of a feather debate sessions. The exciting technical sessions became possible due to incessant efforts of our organizing members.

With this Not- to - Miss programme we are certain we shall discuss the need of the hour. The milieu of the conference is to espouse the research culture among academia facilitated by idea exchange of the intellect during the conduct of conference. Furthermore, the intent activity is to acquaint knowledge with innovative recent trends and new research avenues in Multi-discipline.

I wish to thank to those involved in making this Conference a gainful one. A special word of appreciation goes to the key members of the conference who took the lead in convincing contributions to the organizational efforts of the conference. We wish to extend our gratitude to the generous support and collaboration with IFERP. Finally, the authors and attendees for continuing to contribute and believe in the excellence of the new achievements in multi-disciplinary research.

“Research is to see what everybody else has seen and to think what nobody else has thought.” It is the glory of a good bit of work that opens the way for something still better repeatedly leading to own eclipse. With all the very best for the conference proceedings which is for future reference.

Looking forward to seeing you at ICSEM in January 2020 at CITNC, Bengaluru.

Dr. Narayana B. Dodda Pattar

Principal

Message from Convener

Dr. M. J. Shanthi Prasad

Professor, Department of ECE

Cambridge Institute Technology North Campus,

Bengaluru, Karnataka, India

On Behalf of the organizing committee, it is my pleasure to welcome you all for International Conference on Science, Engineering and Management- (ICSEM 2020) in collaboration with Institute for Engineering Research and Publication (IFERP). ICSEM 2020 is a platform which is going to provide an opportunity to research scholars, delegates and students to interact and share their experience and knowledge in technology application.

I warmly welcome all research scholars, scientists, academicians, young researchers, Business delegates and students to exchange their views and share experiences with other high level professors, colleagues and friends, representing many well-known Universities and Research Institutes together with members of relevant international organizations.

Since this conference covers very global aspects on Recent Challenges in Engineering from very fundamental issue to practical application, anyone interested in dealing with challenges in Science, Engineering and Management for maintaining the Earth as a livable planet should not miss.

Our Conferences could not exist without the generous and unrestricted support from the researcher, academia, and industry experts as well as all our partners and sponsors. We thank them immensely and encourage all to interact with them throughout the Conference.

Most of all, I thank you, the participants, for enriching these annual conferences by your presence. As is a tradition with ICSEM 2020 conferences – I hope you will enjoy the content, renew old friendships, make new friends, get new ideas, and above all, have a good time.

We hope that you will find ICSEM-2020 both enjoyable and valuable, and also enjoy the architectural, cultural and natural beauty of our own Orange City, Nagpur.

The Organizing Committee looks forward to seeing you around.

Dr. M. J. Shanthi Prasad

Convener

ICSEM-2020

International Conference on Science, Engineering and Management

Keynote Speakers

Dr. R. Srinivasan

Professor Emeritus (Retd.)

Department of Computer Science

M.S. Ramaiah Institute of Technology, Bangalore, India

Message

It is my great pleasure to be part of this International conference on Science, Engineering and Management (ICSEM-20) being organized by Cambridge Institute of Technology in collaboration with IFERP. These two organizations are highly remarkable ones. I was part of the interview committee to select the Professors and Lecturers when this college was about to start in. I have always observed how the engineering colleges in Karnataka flourish in terms of academic success both in student outcomes, placement and research activities. In this respect, CIT is one of the best Educational Institutions in Karnataka.

I addition to imparting very good education through various courses, it is also essential to organize several seminars and conferences in the latest areas of Science, Engineering and Management. The idea behind this is that the students should be able to grasp the new ideas and developments that take place. IFERP is the one of best professional organizations that conducts international and National Conferences in India, and the rest of the world. They undertake this effort in specific colleges of importance and conduct an average of three to four conferences per month, and get the papers published in recognized journals. I really admire the way how IFERP organizes and conducts conferences on latest topics of interest and of course they are well supported by colleges like CIT.

I convey my good wishes to the great success of this conference.

Thanks & Regards,

Dr. R. Srinivasan

Sai Satish Babu .N

Data Scientist, Solution Architect

British Telecom

Bangalore, India

Message

I am honored to be part of '**International Conference on Science, Engineering and Management (ICSEM-20)**' organized by '**Cambridge Institute of Technology, North Campus**, **Bengaluru'** and 'Institute For Engineering Research and Publication **(IFERP)**'.

It's great to see people from the different corners of the globe come together to exchange knowledge on cutting-edge technologies and the Innovations happening across various industries to make Engineering & Technology impactful for our next generations.

In today's fast paced world, technology is evolving more rapidly than our imagination. Emerging technologies like IOT (Internet of Things) , AI (Artificial intelligence) , ML (Machine Learning), DL (Deep Learning), mobile 5G, AR(Augmented Reality), VR(Virtual Reality), Blockchain and automations going to play vital role in major transformations across the industries.

Our great scientists dream about doing the great things and Engineers ensure them. Without Engineering and Technology evolutions we can't even think about getting so modernized world. What we design, invent, innovate, create and build today, will be the engineering heritage of tomorrow. It's important that we get it right.

My message to all the participants is Share your knowledge (Take best out of open source community and contribute whatever you can that may help others interested in similar things)

"Knowledge shared is knowledge squared"

I would like to extend my best wishes to all the participants and **ICSEM–20** team.

Thanks & Regards,

Sai Satish Babu .N

ICSEM-2020

International Conference on Science, Engineering and Management

Bengaluru, Karnataka, 24th-25th January, 2020

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CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
1.	FIFO Buffer ➢ ***Chethana Prasad K*** ➢ ***Bindu J*** ➢ ***Chaitra VM*** ➢ ***Aruna Rao B P***	1
2.	Experimental Study on Extraction of Fuel from Plastic Waste through Thermal Pyrolysis ➢ ***V.Vignesh*** ➢ ***Nitin Srinivasan M*** ➢ ***Ishan Bapat*** ➢ ***Manjunath HN***	2
3.	Moore FSM Sequence Detector ➢ ***Bhavana B.S*** ➢ ***Chethana K.S*** ➢ ***Ayesha Rosheen*** ➢ ***Mamatha .K.S***	3
4.	Design and Fabrication of Briquetting Device and Reuse of ETP Sludge as Fuel for Safe Disposal in an Automotive Industry ➢ ***M.K. Marichelvam*** ➢ ***A. Pradeep Kumar***	4
5.	Comparative study of multipliers ➢ ***Pratima V Kashyap*** ➢ ***Navya S*** ➢ ***Aruna Rao B.P***	5
6.	Comparative Study of Analytical Heuristics Pertaining to Online Education Systems ➢ ***Parkavi A*** ➢ ***Abhishek Patil*** ➢ ***K Dhanush Reddy*** ➢ ***Gaurav Karkal***	6
7.	Corrosion Characterization of Aluminium 7075 alloy / Red Mud Composites in Mixture of Sodium hydroxide and Sodium chloride Medium ➢ ***A.Tejaswini*** ➢ ***Anusha M.M*** ➢ ***Dr.P.V.Krupakara***	7
8.	Coin Based Universal Mobile Battery Charger Using Solar Panel ➢ ***Krishnamurthy*** K.T ➢ ***Niranjana K R*** ➢ ***Ajayakumar D*** ➢ ***Manjunath Managuli***	8

CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
9.	Effect of Variation in Composition on Tribological Behaviour and Impact Strength and Optimization of Process Parameters during Turning of Aluminium Alloy Al7068 Using Taguchi Method ➢ ***Pampapathi Gaddi*** ➢ ***Chandrahas M*** ➢ ***Dr. Amardeepak M*** ➢ ***Dr. Narayana B Doddapattar***	9
10.	A Survey on Machine Learning enabled SWARM robots for Autonomous and Precision Agriculture ➢ ***Sampath Kumar.S*** ➢ ***ShanthiPrasad.M.J***	10
11.	A Study on Smart Water Quality Monitoring System Based on IoT ➢ ***Thrisha*** V.S ➢ Vikas ***Reddy*** .S	11
12.	An Overview of Security in VANETS ➢ Karan T P ➢ ***Mamatha*** Jadhav V	12
13.	Effect of Cryogenic Treatment of Cutting tool on Tool Tip Temperature during Milling of Aluminum -6351 Jobs using Molybdenum based M2 Face Milling Cutters ➢ ***Dr Manjunath*** ➢ ***S Prof Abhilash***	13
14.	Basic Trigonometric Function Core in Double FPU ➢ ***Vidya V*** ➢ ***Sahana M K*** ➢ ***Sushmiha BL*** ➢ ***Yashashwini R***	14
15.	Improving Detection Rate of Rarely Appearing Unknown Attacks in Network-based Intrusion Detection System ➢ ***Gyanendra Prasad Joshi*** ➢ ***Eunmok Yang***	15
16.	Comparison of the Performance & Emission Analysis of Mahua Oil and Neem Oil Are Blends with Diesel Fueled In CI Engine ➢ ***Appese .S.D*** ➢ ***Avinasha P.S*** ➢ ***Rakshith M***	16

CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
17.	TIC TAC TOE ➢ ***Vaibhavi.Sreenivasa*** ➢ ***Vaishnavi.K.Katti*** ➢ ***Vaishnavi.S*** ➢ ***Vaishnavi Sriharshan***	17
18.	The Influence of Meteorology on Diurnal and Seasonal Variations of PM2.5 and PM10 over Bengaluru Urban ➢ ***Sowmya H.N*** ➢ ***Shivashankara G.P*** ➢ ***Ramaraju H.K***	18
19.	Optimization of Critical Path of the Project Pedestaled on Cost, Schedule and Person Days ➢ ***Anupriya A G*** ➢ ***Uzma Taj***	19
20.	Analysis of Compression Techniques used for efficient video Transmission ➢ ***Heena Kouser*** ➢ ***Dr.Suvarna Nandyal***	20
21.	Design and Development of an Automated Methodology for the Motivation of the Students to Engineering Education ➢ ***Biram Shrestha*** ➢ ***Pramod K T*** ➢ ***V Sreenidhi Reddy*** ➢ ***Mamatha C M***	21
22.	Biosynthesized zinc oxide nanoparticles characterization and its study on photocatalytic activity ➢ ***K C Suresh*** ➢ ***Dr. A Balamurugan*** ➢ ***Dr. V Ganesh Babu***	22
23.	Performance Analysis of GAA Nanowire FET ➢ ***Prasad M*** ➢ ***U B Mahadevaswamy*** ➢ ***Vikas Hallikeri***	23
24.	Data Cleaning Using Conditional Functional Dependencies for Secured Structuring Of Data ➢ ***Bibi Ameena*** ➢ ***Swetha R*** ➢ ***Naveen Kumar*** ➢ ***Anand Kumar C***	24

CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
25.	Employees'S Outlook towards Elements Impelling Organization Citizenship Conduct in Banking Sector ➢ ***Dr.S. Priyanka*** ➢ ***Subhashini.S***	25
26.	Study on Arsenic Content Present in Groundwater of Shahapur Taluka Yadgiri District ➢ ***Praveen Kumar*** ➢ ***Pooja***	26
27.	Dynamic Approach to Provide Security to Private Data Stored in Cloud ➢ ***Manasa. K*** ➢ ***Mohanraj. B*** ➢ ***Varshitha. S. V*** ➢ ***Swathi. S***	27
28.	Effective Management of organizations Using PEMS Model ➢ ***Khalandar Azad*** ➢ ***Dr. Chitriki Thotappa*** ➢ ***Hasnain Haider***	28
29.	Implementation of Last Planner System in Indian Construction Sites: A Case Study ➢ ***Dr. S M Abdul Mannan Hussain*** ➢ ***Dr. E.V. Raghava Rao*** ➢ ***Asra Fatima***	29
30.	Design and Development of an Ameliorated Methodology for World Class Assessment Ranking Framework ➢ ***Deekshitha B*** ➢ ***Suma T R*** ➢ ***Swathi V*** ➢ ***Ambika V S***	30
31.	Energy Optimization Mechanism to Improve Energy Efficiency of Mobile Device Interface for Mobile System ➢ ***Shalini Prasad*** ➢ ***Shaliesh B S***	31
32.	Heat Transfer Analysis of MHD Nanofluid Flow between Parallel Plates with Shape Effect ➢ ***Nayana K C*** ➢ ***Amrutha H P*** ➢ ***Kavya H S***	32
33.	Super Alarm Algorithm for In-Patient Monitoring System ➢ ***Pushpa G*** ➢ ***Rachana B S***	33

CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
34.	Effective Ordering Policies in EOQ Inventory System with Predictable factors ➢ ***Dr. CS Reddy*** ➢ ***Dr. Mamatha E*** ➢ ***Saritha S***	34
35.	A Survey on Automatic Patient Health Monitoring System ➢ ***Kavitha H M*** ➢ ***Dr. Ravikumar G K***	35
36.	FPGA based Speed Control of Induction Motor ➢ ***Ravi N*** ➢ ***Sridhar T N***	36
37.	Test Pattern Generator for Digital circuits ➢ ***Madhura.R*** ➢ ***Dr.Shanthi Prasad M.J***	37
38.	Production of Rice bran biodiesel through Transesterification and evaluation of its physicochemical properties ➢ ***Abhilash S G*** ➢ ***Yogesh B*** ➢ ***Dr Manjunath S*** ➢ ***Dr N B Doddapattar***	38
39.	Implementation of SVD and DWT method for satellite Image Enhancement ➢ ***Keshava. N*** ➢ ***Reshma Banu F*** ➢ ***Naveen. E***	39
40.	Resuscitation of Quick Response Code for enhanced storage Capacity ➢ ***Gopi Krishna T.L*** ➢ ***Harish G. N*** ➢ ***Pavan B***	40
41.	A Critical Analysis of Review of Literature on Domestic Violence against Working Women ➢ ***Ms. Pushpa Hongal*** ➢ ***Dr. Gururaj Phatak***	41
42.	Effect of isothermal aging on the electrical resistivity of abinary Sn-5wt%Sb solder alloy ➢ ***Sadiq Hassan Khoreem*** ➢ ***Abdulhakeem A. Alhammadi***	42

CONTENTS

SR.NO	TITLES AND AUTHORS	PAGE NO
43.	The Effect of Rhoeo Discolor Plant Leaves Extract on Corrosion Inhibition of Mild Steel in HCl ➢ ***Netravati Gayakwad***	43
44.	Super Alarm Algorithm for In-Patient Monitoring System ➢ ***Pushpa G*** ➢ ***Rachana B S***	44
45.	Computer Vision based automated growth monitoring and regulation system for Mushroom Cultivation ➢ ***Benak Patel M P*** ➢ ***Vidyashankar M***	45
46.	Research on VLSI solution for Image Integrity Protection Schemes for IPTV Applications ➢ ***Vasudheva Reddy Nandigam*** ➢ ***Prashant V Joshi*** ➢ ***R Karthik***	46
47.	Analysis and Optimisation of Shielded Metal Arc Welding Process Parameters in joining process ➢ ***Maruthi SB***	47
48.	Testing Of New Catalytic Converter (Current Trends in Automotive Emission Reduction) ➢ T.***Suresh*** ➢ ***B.Anbarasan***	48
49.	Comparative Analysis of Multi-Pulse Inverter for Facts Application ➢ ***Vidyashankar M*** ➢ ***Benak Patel M P***	49
50.	Corrosion Characterization of Aluminium Hybrid Metal Matrix Composites for Real-time Engineering Applications ➢ ***Dr. Santhosh N*** ➢ ***Dr. Ashwin C Gowda*** ➢ ***Vinu Vijay*** ➢ ***Joe Paul*** ➢ ***Adarsh M P*** ➢ ***Anto Sunny***	50
51.	Information Theory Based Defense Mechanism against DDOS Attacks for WSAN ➢ ***Jyoti Bhola*** ➢ ***Surender Soni***	51

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ABSTRACTS

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FIFO Buffer

Chethana Prasad K, Student, KSIT, Bengaluru, Karnataka, India
Bindu J, Student, KSIT, Bengaluru, Karnataka, India
Chaitra VM, Student, KSIT, Bengaluru, Karnataka, India
Aruna Rao B P, Assistant Professor, KSIT, Bengaluru, Karnataka, India

Abstract:--

Buffers in the recent days have been of great interest as for their streaming application them to queue up large amounts of data for the streaming audio or video to ensure a supply of information in case of delays. The one of the popular buffers would include a **FIFO BUFFER**. FIFO a popular technique included with queue, stack and memory storage has been explained in first part of the project. FIFO buffers are simple to implement using HDL's. The second part of the project targets about how to implement a 32 bit FIFO buffer using **Verilog® HDL**. Finally some information about Verilog® HDL and applications of the latter have been introduced.

Index Terms:--

Code (3), Description (2), Implementation (4), Introduction (1)

Experimental Study on Extraction of Fuel from Plastic Waste through Thermal Pyrolysis

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Ishan Bapat, Student, Department of Mechanical Engineering, Nitte Meenakshi Institute of Technology, Bangalore, India
Manjunath HN, Student, Department of Mechanical Engineering, Nitte Meenakshi Institute of Technology, Bangalore, India

Abstract:--

Plastics are inexpensive materials which can be used for various applications, but due its non-biodegradable nature, the plastic waste contributes major problem in Municipal Waste Management. Polypropylene, which is the most commonly used type of plastic can be found on the roads in the form of covers and plastic bags. Since these are usually land filled and not recyclable, they cause a lot of environmental issues such as soil and ground water contamination. Thus, it is necessary to adopt the process of pyrolysis by which plastic wastes can be converted into a flammable fluid. Pyrolysis is the sustainable management of plastic waste along with production of liquid oil as a source of energy and solid char and gases as value-added products

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Moore FSM Sequence Detector

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Ayesha Rosheen, Student, KSIT, Bengaluru, Karnataka, India
Mamatha .K.S, Student, KSIT, Bengaluru, Karnataka, India

Abstract:--

With recent technological advancements, modern societies are becoming more and more dependent on the automated machines. It is in order to scope with their fast-going lives. Modern automated machines adapt their sequence of actions depending on their environment and events. The FSM (Finite state machine) is used to mathematically express those sequences of actions or instructions. In this article two FSM machines types, Moore and mealy, are discussed. Showing different results in order to demonstrate the importance of FSM modeling. An edge detector circuit is designed by employing Moore machines. It is a FSM design example, can be used for student's concepts building and demonstration. These designs are implemented in Verilog. A comparison is also made based on both implementations.

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Design and Fabrication of Briquetting Device and Reuse of ETP Sludge as Fuel for Safe Disposal in an Automotive Industry

M.K. Marichelvam, Department of Mechanical Engineering, Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, India
A. Pradeep Kumar, Department of Mechanical Engineering, Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, India

Abstract:--

Manufacturers of wind turbines, heavy machineries, gear grinders, bearings, and other industrial products constantly struggle with the problem of safe disposal of the Effluent Treatment Plant (ETP) sludge produced during the manufacturing processes. Although grinding is an important process to attain the desired surface finish of many components, the grinding sludge creates environmental impact [1]. The sludge often consists of the grinding oil, which is more expensive. So, the manufacturers have wrestled with this issue for the past several decades. In this paper, an overview of grinding sludge characteristics and energy recovery routes is presented. The most important disposal methods are presented. A Briquetting device is designed and fabricated. Samples are taken from the ETP of a leading automobile industry in India. The analysis of the elementary chemical composition of grinding sludge, the composition of the ash content, volatile mater and fixed carbon analysis were carried out. The results show that the prepared briquettes could be used as a fuel [2].

Keywords:--

Effluent Treatment Plant (ETP); Grinding; Sludge; Briquetting, Fuel

Comparative study of multipliers

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Abstract:--

A digital signal processor greatly depends on a multiplier as it is a key hardware block in a high speed processor. Low power consumption and smaller area are some of the major criteria for fabrication of digital signal processing systems. The various types of multipliers like Array multiplier, Booth multiplier, Sequential multiplier, Wallace Tree multiplier and Systolic Array multipliers are simulated using a Verilog Hardware Descriptive Language and Xilinx ISE 13.1 as a simulation tool. This paper provides explanation, advantages and disadvantages, working verilog code and simulation result of each multiplier which helps us to compare each one of them in terms of delay, power consumption, circuit complexity and area required.

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Comparative Study of Analytical Heuristics Pertaining to Online Education Systems

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Abstract:--

With rapid technological advancements, E-learning and M-learning has gained significant attention in recent times. With the growing amount of data, the need to analyze and extract meaningful information is critical to provide a successful digital platform. Quality of online E-learning content is significant apart from communication and learning management systems. Therefore, Learning Analytics is useful in improvising learning experience. This paper gives study various analytical heuristics pertaining to E-learning systems.

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Corrosion Characterization of Aluminium 7075 alloy / Red Mud Composites in Mixture of Sodium hydroxide and Sodium chloride Medium

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Abstract:--

This paper discusses the different methods of Corrosion characterization of aluminium 7075 alloy reinforced with red mud particulates. The raw materials which are available commercially are subjected to liquid melt metallurgy technique using vortex method to prepare composite materials. Matrix alloy was also casted in the same way for comparison. Composites containing 2, 4 and 6 weight percentage of red mud were prepared. Corrosion tests conducted were static weight loss corrosion, stress corrosion and salt spray test. All these tests are conducted in 0.025, 0.05 and 0.1 molar solutions of mixtures of sodium hydroxide and sodium chloride. In all the tests, the composites exhibited increased corrosion resistance when compared to matrix alloy. This may be attributed to the inert nature of the reinforcement added which is unaffected by the corrosion medium. It can also be explained that there may be development of non-porous oxide layer which forms on the surface of the aluminium 7075. Hence composite materials are more preferred in the place of metals and alloys.

Index Terms—

Aluminium 7075, Red mud, Salt spray, Static weight loss, Stress Corrosion, Vortex

Coin Based Universal Mobile Battery Charger Using Solar Panel

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Abstract:--

The coin-based mobile battery charger developed for providing a unique service to the rural public where grid power is not available for partial/full daytime and a source of revenue for site providers. The coin-based mobile battery charger can be quickly and easily installed outside any business premises. The mobile phone market is a vast industry, and has spread into rural areas as a essential means of communication. While the urban population use more sophisticated mobiles with good power batteries lasting for several days, the rural population buy the pre owned mobile phones that require charging frequently. Many times battery becomes flat in the middle of conversation particularly at inconvenient times when access to a standard charger isn't possible. The coin-based mobile battery chargers are designed to solve this problem. Also in this project it is been planned to implement sun tracking system for solar panel to improve the power efficiency of the solar pannel The user has to plug the mobile phone into one of the adapters and insert a coin; the phone will then be given a micro-pulse for charging. It does not bring a mobile from 'dead' to fully charged state. The charging capacity of the mobile is designed with the help of pre defined values. It is, of course, possible to continue charging the mobile by inserting more coins. This compact and light weight product is designed to cater for the growing number of rural mobile users worldwide. A suitable micro controller is programmed for all.

Keywords –

Solar panel, LCD, FPGA, RTC, embedded system, memory etc.

Effect of Variation in Composition on Tribological Behaviour and Impact Strength and Optimization of Process Parameters during Turning of Aluminium Alloy Al7068 Using Taguchi Method

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Abstract:--

The wear test was conducted to study the tribological behavior and impact test to study the mechanical properties by varying the Mg and Zn composition of Al7068 aluminum alloy in this research work. The major alloying elements in the alloy are Mg and Zn. Four compositions of specimens, for Mg% variation b/w (2.2 to 3%) and Zn % variation b/w (7.3 to 8.3%) were prepared. These specimens were prepared as per ASTM standards for wear and impact tests. The results of the wear test indicate that the compositions of 2.75% Mg and 7.3% Zn of the alloy show highest wear rate at the least load of 1 kg. The impact test results indicate that the low compositions of 2.2% Mg and 7.6% Zn of the alloy gives highest impact energy absorbed by the specimen. In this research work, Taguchi's L16 orthogonal array was used to get the optimized values of turning process parameters like feed rate, speed, depth of cut, tool nose radius and material composition. The response variables measured/calculated were surface roughness, material removal rate, machining time, machining force and machining power.

Keywords:

Aluminum alloy, Magnesium, Zinc, Wear rate, Impact strength, Taguchi method

A Survey on Machine Learning enabled SWARM robots for Autonomous and Precision Agriculture

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Abstract:--

Machine learning has evolved with high performing computing algorithms along with Robotics and Artificial intelligence technologies. SWARM robotic system is a diligence of multi robot intelligence with collaborative communication approach. SWARM robots play a major role in precision agriculture. SWARM robots mainly focus on aspects like coordination, decentralized control and self organization. These technologies have created new opportunities in multidisciplinary agricultural domain. Integration of Machine learning principles with SWARM robotics will form a novel solution to make agricultural practice even more intelligent and accurate. In this paper, we present a comprehensive review of research related to adoption Machine learning principles in precision agriculture for various autonomous agricultural activities using SWARM robots.

Keywords:--

SWARM Robots, Precision Agriculture, Self Learning, Decision Tree, Random Forest, Knn Algorithm, Sowing, irrigation

A Study on Smart Water Quality Monitoring System Based on IoT

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Abstract:--

Primary necessity of all human beings is safe water drinking. With swiftly rising population in India, fresh water management is very much essential which demands an extension in agriculture, industrial, and other requirements. The delivering of waste products into the water bodies leads to water pollution and due to this the quality of water is also becoming very low. In order to get pure water, quality of water has to be checked before using water. In recent days, concerned people are designing a sensor to measure factors like turbidity and hardness to decide the quality of water using IoT. To overcome all these complications a better solution is required which is provided by using IoT. This paper deals with how the quality of water can be checked using IoT.

Keywords:--

IoT, RFID, PH sensor, GSM

An Overview of Security in VANETS

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Abstract:--

Vehicular communication is one of the growing aspects in the communication industry. Cooperative Intelligent Transportation Systems (CITS) in view of a correspondence among vehicles and clever roadside foundation can be of an extraordinary advantage with respect to street security, traffic blockage and ecological effect of the vehicle. Some characteristics of VANET are high mobility of the nodes, dynamic nature of the network, self-organisation and distributed networking. In such a communication system, it is difficult to establish a fixed security model. Because of high mobility of the nodes, the nodes may be exposed to multiple security attacks. The packet communication in VANET is open-environment making it susceptible to attacks. Such attacks may damage the nodes and the network entirely. There are various studies related to the security in VANET. But the security field in VANET is ever growing as there cannot be a limit to the ways which the attackers may exploit and harm the network. Some schemes have been proposed for the security in VANET. These schemes have been implemented via simulations of the network because it is hard to establish and monitor a vehicular ad hoc network physically. The paper presents an overview of the security in VANET by discussing various security attacks, attackers and a few proposed schemes based on security.

Keywords:–

VANETs, security attacks, security schemes

Effect of Cryogenic Treatment of Cutting tool on Tool Tip Temperature during Milling of Aluminum -6351 Jobs using Molybdenum based M2 Face Milling Cutters

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Abstract:--

The cutting tool industry is striving towards making low cost, but high performance tools available to the industry, which gives good finish and dimensional accuracy that can eliminate subsequent operations like grinding. One such tool is found to be molybdenum based M2 HSS tool, which has been widely used in the industry. Added to this, cryo treatment of this tool has been found to improve the toughness of this tool and increase the productivity which in turn can bring economic benefits. With this background the authors in previous publication have compared the machining parameters machining force, machining power and surface roughness and their optimization while machining aluminum AL6351 using deep cryo-treated Molybdenum M2 tool. Considering very little is reported on the effect of the cryo-treated tool on tool tip temperature this paper presents this aspect along with microstructural analysis of the machined material. Obtained results have been analyzed by statistical method to authenticate the findings. While the tool tip temperature showed that the tip temperature for the treated tool was about 10% lower than that of the untreated tool, machining operation at higher speeds, higher feed and higher depth of cut compared to those with untreated tool without losing surface finish.

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Basic Trigonometric Function Core in Double FPU

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Abstract:--

A floating-point unit (FPU) is a math Co-processor, which is a part of a computer system specially designed to carry out operations on floating point numbers. Double-precision floating point is a commonly used format on PC's due to its wider range over single-precision floating point. The proposed work is to build an efficient basic trigonometric function core using double precision floating point unit that performs basic trigonometric functions with reduced complexity of the logic used and reduce the memory requirement. The functions performed are handling of Floating Point data, perform any one of the following trigonometric operations like angle of sine, cosine, tan, cot, sec and cosec. All the above modules have been clocked and evaluated under Spartan 6 Synthesis environment. All the functions are built by possible efficient algorithms with several changes incorporated at our end as far as the scope permitted. The coding is done in verilog.

Keywords:--

Angle, double precision, FPU, Spartan 6

Improving Detection Rate of Rarely Appearing Unknown Attacks in Network-based Intrusion Detection System

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Abstract:--

Intrusion detection system (IDS) monitors network traffic in real-time for activity indicative of attempted or actual access by malicious persons or bots. Along with firewalls it is important to implement IDS sensors in network system, because firewalls blocks packets entering to the network by checking only the packet headers. However, IDS performs deep packet inspection and looks at the packet contents, e.g., checks packet character strings in packet against database of known attack strings. It not only rely on the previous knowledge about the attacks, but also potentially detects new undocumented attacks. Therefore, it is very important for network administrator to implement IDS sensors for identifying malicious attacks and threats in network systems. With the massive increase in malicious attacks and threats, the study of intrusion detection systems has received a lot of attention among security researchers and industries related to computer. As fundamental tools of IDSs, learning based classification methods have been widely employed. When it comes to detecting network intrusions in small sample sizes, e.g., newly emerging intrusions, the limited number and imbalanced proportion of training samples usually cause significant challenges in training supervised and semi-supervised classifiers [1].

In this work, we propose a general network intrusion detection system to address the challenges of class imbalance datasets. The proposed framework focuses on incorporating deep adversarial learning with statistical learning and exploiting learning-based data augmentation. Many intrusion detection systems in the literature [2][3] used the KDDCup99 dataset [4] for experiments. In KDDCup99 dataset, there are some intrusion with rare occurrences [5]. These small number of intrusions are, in fact, high threat because they are unknown intrusions. These types of class imbalanced datasets occur in many real-world applications where the class distributions of data are highly imbalanced. Cost-sensitive learning is a common approach to solve this problem. Existing works in the literature deal with frequently attacking cases that can reach very high accuracy by simply predicting these intrusions every time, but it provides a useless classifier for the rarely occurred new intrusion use case. Therefore, in this work we propose a properly calibrated method, that may achieve a lower accuracy, but would have a substantially higher true positive rate. Implementation of this method is very easy and can be implemented in the existing IDS.

Comprehensive experimental validations on KDDCup99 dataset show that the proposed method outperforms the existing learning based IDSs in terms of accuracy, precision, recall, and F1-score.

Keywords:—

Network intrusion detection, data augmentation, probabilistic generative model, generative neural networks, deep adversarial learning

Comparison of the Performance & Emission Analysis of Mahua Oil and Neem Oil Are Blends with Diesel Fueled In CI Engine

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Abstract:--

In the present paper, the performance & emission characteristics of Mahua oil and Neem oil have been tested. Naturally, available sources can be used in this work. The blends of Mahua methyl, Neem methyl ester, and Diesel were prepared analyzed and their performance & emission is compared with performance & emission of diesel oil. The goal of this study is to verify the affiliation between engine performances and emission analysis by means of diesel. The blends of varying proportions of Mahua oil are B10, B25, B50, B75, B100 with diesel were prepared analyzed and their performance & emission compared with performance & emission of diesel fuel. In the same way, the blends of Neem oil are B10, B20, B40, B60, B80, B100 with Diesel were prepared analyzed and their performance & emission compared with performance & emission of diesel fuel. After this, we compared the performance & emission characteristics of Mahua oil and Neem oil in this paper. Proceeding to this we compared the staging of Mahua and Neem oil in this work. The engine performance anticipated variables are thermal efficiency, Mechanical efficiency, fuel consumption has been obtaining from different blends and results are compared with pure diesel. The basic engine emissions are CO, CO2, HC, and NOx have been obtained from different blends and results are compared with pure diesel.

Keywords—

Neem oil, Neem bio-diesel, Diesel oil, Mahua oil, Mahua bio-diesel, Performance, Emissions

TIC TAC TOE

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Abstract:--

Another instance where a human brainchild beats its creator. This program eases the use of Verilog which the current trend among hardware descriptive languages. Using Verilog is the main advantage due to its infinite potential.

This game of tic tac toe is designed using Verilog. The code is designed in such a way that it is suitable to play against a human player through suitable interface. The player gives inputs through simple switches and the display can be made on a matrix of LEDs. The algorithm of the game is designed in such a way that the computer cannot be beaten in the hardest level in case of multiple levels, in the worst scenario the game ends in a draw.

Tic tac toe is a paper pencil game consisting of 2 people where, the 2 players mark the spaces of a 3X3 grid in turns with their respective symbols X and O. the winner is decided based off of getting his "three" in a horizontal, vertical or a diagonal column-row win. The game ends as a draw when neither of them match the above criteria. Every turn the aim of the player is to either complete his "three" or prevent the other player from completing his "three". In this game when the player or computer plays the game, a 2-bit value is stored in one of the 9 positions in the 3X3 grid. 2'b00 is stored into a position when neither the player nor the computer has played in that position.2'b01 that is X is the value stored when the player plays in the position.2'b10 that is 0 is the value to be saved when the computer plays in the position.

Therefore interfacing a popular game using Verilog increases the popularity of the language outside the Electronics community.

The Influence of Meteorology on Diurnal and Seasonal Variations of PM2.5 and PM10 over Bengaluru Urban

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Abstract:--

The $PM_{2.5}$ and PM_{10} concentrations are measured in Bengaluru urban area at a height of 10 meters at five different locations BTM Layout (BTM), Peenya (PEB), BWSSB (BWS), Sanegurava Halli (SHB) and City Railway Station (CRS) from 1st January 2017 to 20th March 2018. The data were measured at 5-minute intervals and averaged to hourly,daily and monthly values. The average annual mass concentrations of $PM_{2.5}$ and PM_{10} were 27.8 ± 14.8 µg m^{-3} and 64.5 ± 24.9 µg m^{-3}, respectively. Station-wise contributions of $PM_{2.5}$ and PM_{10} over Bangalore were separated and were observed that the PEB was the highest (38.9 µg/m^3) contribution (51%) followed by BTM (26 %: 21.2 µg/m^3) and BWS (23%: 19.7 µg/m^3) for $PM_{2.5}$, however, for PM_{10}, the highest was at CRS (68 %: 87.1µg/m^3) and lowest was SHB (32 %: 40.9 µg/m^3) monitoring site. Both $PM_{2.5}$ and PM_{10} concentrations decreased from midnight to 6:00 a.m., followed by a morning peak at approximately 7:00 and 10:00 a.m. The concentrations then decreased until ~5:00 p.m. after which they rose until ~11:00 p.m. Due to industrial activities over the PEB area, the concentrations of $PM_{2.5}$ were much higher than the other sites. The seasonal variation in the mass of both $PM_{2.5}$ and PM_{10} concentrations were observed similar with higher around 2 and 1.2 times in the winter season (38.5 µg m^{-3} and 85.1 µg m^{-3}) (highest concentrations) than the monsoon (19.2 µg m^{-3} and 66. 6 µg m^{-3}) (lower) respectively. In overall, the lower mass concentration of both $PM_{2.5}$ and PM_{10} were found during the monsoon season it may be due to washout of the ambient PM, however, the highest mass concentrations of PM during the winter season was due to low-level inversion and higher emissions of mass PM. The mixing height was observed to be lower due to low temperature and calm wind conditions during these periods that prevent dispersion of atmospheric pollutants into the lower atmosphere. Inversion effects and meteorological conditions clearly indicate the diurnal and seasonal variations of the pollutants.

Keywords:--

Particulate Matter (PM), Diurnal Variations, Seasonal Variations, Mixing Height, Inversion, Meteorological Parameters (MP)

Optimization of Critical Path of the Project Pedestaled on Cost, Schedule and Person Days

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Abstract:--

The software development is made using different process models, pedestaled on software development life cycle (SDLC) stages. Between the requirement and analysis stages, there need to be amphisbaena documents to be proceed for analysing stage. There need to be amphisbaena documents at the end of requirements stage to be proceed for analysing stage. One of the main documents is project charter which contains the negotiated cost, schedule and person days. The schedule is identified from activity chart which may contain sequential activities, parallel activities, periodic dependent activities, milestones and deliverables. Hither to, the schedule is obtained from manually by the designed critical path, carved from activity chart (graph). This is fine for limited for number of activities but for large projects, the number of activities are voluminous. In such case, carving the critical path is herculean task and error prone approach. This paper develops an automated methodology for design of critical path using mathematical language through the movement of the matrix elements. Moreover, there is a need to optimize the cost, schedule and person days. This paper addresses this issue and solve it to get the precise optimization.

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Analysis of Compression Techniques used for efficient video Transmission

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Abstract:--

Multimedia plays a vital role in communication around the globe. The utilization of peripheral devices along with media has boomed with technology. The same impact was observed in other fields such as medicine, where data as images and videos exist in various forms. Reduction in the amount of data stands the prime factor, but the matter of concern is the quality and originality of data at both the ends. Here the issue concerned is the video qualities which are medical images and videos serving the medical fraternity. On the compression of medical video, data is over the processed images and the video is transmitted using cloud network infrastructure. The concerned complexity is missing quality data, time, and space even though there are many techniques and algorithms available for the compression of video data. In this paper, a comprehensive survey of various techniques and algorithms considering parameters such as compression ratio, PSNR, MSE, and video quality are discussed that apply to the field of medical imaging.

Index Terms:

Multimedia Communication, Bit-rate, Rate-Distortion Optimization, Compression Ratio, MSE, PSNR

Design and Development of an Automated Methodology for the Motivation of the Students to Engineering Education

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Abstract:--

The fingerprint identification system has been the most widely used system for authentication, identification and verification. Fingerprint is one of the challenging pattern recognition problems. In today's growing technology, India needs many quality engineers. But in today's scenario we find there is a drastic fall in grim quality education. The prosperity of the nation depends on the carrying foreign exchange. For country like India where people mindset is not grown. There is a need to compile younger generation for engineering education and inculcate the knowledge in arenas like universal human values, technical English and mathematical logical positivism. There is a need to attract students for various engineering disciplines and mould them to acquire good engineering knowledge to develop them as future illumine engineers. One of the ways is to bind them for their attendance and regularity in teaching learning process. Therefore, for strict attendance monitoring system, fingerprint recognition system can be used in college buses, as many students in the college use college transportation for traveling. The recognition system can be used for different purposes such as monitoring the students' attendance in the bus, giving the accurate time of check-in and check-out of students from the bus and exact location of boarding and alighting from the bus. This paper provides student attendance based system with our own developed sensors used in boarding and alighting system to send information simultaneously to the college administration and to the parents with the help of cloud and IoT platform.

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Biosynthesized zinc oxide nanoparticles characterization and its study on photocatalytic activity

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Abstract:--

The biosynthesis of zinc oxide(ZnO) nanoparticles has been carried by simple ecofriendly low cost process using drumstick seeds extract. The structural and morphological properties of biosynthesized ZnOnano particles are studied by using UV-Visible spectroscopy and particle size analysis by Fourier Transform Infrared Spectroscopy, Field Emission Scanning Electron Microscope and XRD analysis.The biosynthesized ZnOnanoparticls as the size range of 16.2 to 45.8nm. The photocatalytic activity of ZnO nanoparticles were studied.

Key Word:--

Biosynthesis, ZnO Nano particles and photocatalytic activity

Performance Analysis of GAA Nanowire FET

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Abstract:--

In proposed work, gate oxide engineered for Gate All around (GAA) Nanowire FET is purposed for low power digital circuitry. Proposed device has a gate oxide geometry having high-k with SiO2, HfO2 and Al2O3 respectively. Leakage currents are reduced with gate oxide high-k of HfO2 as compared with Al2O3 and SiO2. An improvement is observed in ON to OFF-state current ratio and an impressive decline in drain induced barrier lowering (DIBL) with HfO2 as gate oxide GAA NWFET as compared to SiO2 and Al2O3 gate oxide structure at same physical dimensions. Further, with HfO2 gate oxide device has been found to have better ION/IOFF ratio, higher trans-conductance, lowered DIBL and an optimum sub-threshold slope as compared to other gate oxide device. all the simulation is carried out using Visual TCAD simulation tool from cogenda Pvt Ltd.

Keywords:--

GAA, High-K dilectric, Short channel effects, Sub-threshold Slope, Junctionless, N-type, P-type

Data Cleaning Using Conditional Functional Dependencies for Secured Structuring Of Data

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Abstract:--

Data inconsistency is a condition that occur between files when similar data is kept in different formats in two different files or when matching of data in two different files. Or when matching of data must be done between files. As a result of the data inconsistency, these files duplicate some data such as addresses and names, compromising data integrity.Quality of data is critical in getting to final analysis. Any data which tend to be incomplete, noisy and inconsistent can effect the result. Data cleaning in data mining is the process of detecting and removing corrupt or inaccurate records from a record set, table or database.

Recent statistics has revealed that dirty data costs billions of dollars businesses annually. It estimates that data cleaning, a labor- intensive and complex process, accounts for 30-80% of the development time in a data warehouse project. This highlights the need for data cleaning tools to automatically detect and effectively remove inconsistencies and errors in the data.Conditional functional dependencies are extension of functional dependencies by supporting patterns of semantically related constants, and can be used as rules for cleaning relation data. However, finding quality CFD's is an expensive process that involves intense manual effort. Conditional functional dependencies have proven more effective than functional dependencies in detecting and repairing inconsistencies (dirtiness) of data and are expected to be adopted by data cleaning tools that currently apply on data cleaning tools [1]To recognize functional dependencies from a given relation a technique called program slicing can be used. Program slicing is a process of getting extracted part of program which is completely a mathematical approach. The discovery problem is highly non trivial .For CFD-based cleaning methods to be efficient in practice, it is necessary to have techniques that can automatically discover or learn CFD's from sample data, to be used as data cleaning rules.

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Employees'S Outlook towards Elements Impelling Organization Citizenship Conduct in Banking Sector

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Abstract:--

In the increasingly aggressive environment in which organizations function, discretionary behaviour known as Organizational Citizenship Behaviour (OCB) is considered as a highly important influence to the effective function of an organization. Understanding the factors that deteriorates OCB would help the organization to focus more on those factors that enhances OCB. This study would facilitate the organizations to focus on the factors that contribute employees to behave as good citizens by engaging in all sorts of positive behavior. This study is descriptive in nature and strategy adopted is survey. The data is gathered from 674 respondents employed in both public and private banks in KovaiCity .The data is analyzed using descriptive analysis. The result of the study demonstrations that Public sector bank personnel's mean value is moderately higher than that of private sector bank personnel.

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Study on Arsenic Content Present in Groundwater of Shahapur Taluka Yadgiri District

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Pooja, M.Tech in Civil Engineering, Department of Civil Engineering, Central University of Karnataka, Gulbarga, India

Abstract:--

The objective of the research work is to evaluate the hydrogeological condition and also to analyse the status of groundwater both quantitatively. The detailed hydrogeological investigations will be carried out in Shahapur taluk, Yadgiri district. The study area covers the taluk of Shahapur.Water quality analysis is planned for analysing TH, Cl2, TDS, pH, Alkalinity and Arsenic .Bore wells inventory is expected to provide the locations for conducting the deatailed hydro chemical analysis. Groundwater is primary source of drinking and irrigation in the taluk especially in north region. Furthermore the correlation between the arsenic concentration with the depth of the hand pumps dug wells (1152) and bore wells(188) ,Surface flow irrigation (58), Lift irrigation (1047) and the distance from the river Krishna was also a significant study . Around 40% of the district of Yadgiri is having arsenic in its groundwater. In the present times Arsenic poisoning contamination in the ground water has caused lots of health related problems in the villages .Population in the Yadgir district ,Shahapur taluk ,About 10 villages reported to be affected with arsenic poisoning . The present study concludes that in Yadiri district there is a high contamination of arsenic in groundwater in all the strips. Therefore, an immediate strategy is required to combat the present problem.

Index Terms:--

Arsenic, Ground Water Quality, Human Health, Social Survey, Awareness

Dynamic Approach to Provide Security to Private Data Stored in Cloud

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Abstract:--

The paper aims to provide a dynamic concept, where Cloud is secured by Artificial Intelligence (AI), and performance is increased by using dynamic cache segmentation. It explains how AI actually safeguards Cloud. Though AI is used for many purposes such as Gaming, Robotics etc. it is not yet used for Cloud Security. In detail, the paper presents the functioning of AI as a protective layer. It mainly focuses on Data Security. In this paper, we are provide security to cloud services by using AI as a barrier where every data files goes inside clouds using a secured bucket concept. It gets scanned by AI for viruses and makes data virus-free. In this project we try to send segmented videos from cloud to users to reduce the buffering time.

Keywords

Cloud, AI, Dynamic segmentation

Effective Management of organizations Using PEMS Model

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Hasnain Haider, Senior Engineer, Oil& Gas Sector, Kuwait

Abstract:--

In this study, Process Effectiveness Measurement System (PEMS) model is used for improving the performance of students and the institution. With this model, the management and staff will get better control, the way education is imparted and also every student will get opportunity to perform better. In this system, measurement of student performance is carried out with continuous monitoring and later by applying PEMS model, student performance is re-evaluated/corrected, which eventually shows positive results. Thus, from the obtained results, it is evident that use of PEMS model will enhance the organizational productivity in an efficient manner leading to effective management of organizations.

Index Terms

PEMS Model, Service organization, effective measurement, student performance

Implementation of Last Planner System in Indian Construction Sites: A Case Study

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Dr. E.V. Raghava Rao, Professor, Department of Civil Engineering, Nalla Malla Reddy Engineering college, Hyderabad, Telangana, India

Asra Fatima, Assistant Professor, Department of Civil Engineering, Muffakham Jah College of Engineering and Technology, Hyderabad, Telangana, India

Abstract:--

One of the most commonly used tools of lean is Last Planner System (LPS) which achieves goals through social process of collaboration. It is a short term project planning system to produce predictable uninterrupted workflow by creating a set of commitments that coordinates the actions of all stakeholders. The work described in this paper presents results of an ongoing construction project in finishing phase. It focuses on contractor's implementation of LPS to analyze how lean construction techniques improve performance and productivity. The examination completed with the four contractors inquiring as to whether the LPS could be actualized in their development project. The results reveal that implementing LPS had significant improvements over traditional management and a notable increase in average Percentage Plan Completed. The results from the Last Planner system implementation show that identifying the constraints of the planned work leads to an improvement in the percentage and quality of completed activities.

Index Terms:--

Lean construction, Last Planner System, Weekly work plan, percentage plan complete, Master Schedule, Variance

Design and Development of an Ameliorated Methodology for World Class Assessment Ranking Framework

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Abstract:--

The ranking of the educational institution including universities is carried out by different indexing organization. These organization rank the institution based on some criterion values that are responsible for that measures the quality of the institution. Each criterion values is given some weightage as decided by the experts.

Now a day's the Quacaralli Symonds' (QS), Time Higher Education (THE) are the world class defacto standard indexing organizations. This ranking though appears to be genuine ranking. There are some minor flaws, which dampens the genuinety of the whole ranking system. The criterion values per say cannot determine the quality. There are some criteria, whose values can be procured externally without actually considering the quality. Another problem is that the intern criterion flows are maximized through human skill dependent algorithms wrongly labeled as defcato standard algorithm. In this paper both these issues are been addressed and solved genuinely to determine the précised ranking of the institution.

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Energy Optimization Mechanism to Improve Energy Efficiency of Mobile Device Interface for Mobile System

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Shaliesh B S, NividTech Online Services, Bangalore, India

Abstract:--

Wireless communication and networking technologies use higher speed network interface devices. These wireless network devices are the power hungry component of the cellular device. The results of power consumption leads to high operating cost and a greater failure rate of the device. This has become a major cause of concern which has imposed challenges towards the development of greater performance system. The key concept to decrease power consumption is to disable all the sub-antennas and their RF chains. Wireless communication devices use Multiple-Input Multiple-Output (MIMO) systems to enhance their capacity. This paper, initially discusses the basic mechanism of power management. Then, we introduce a novel scheme that effectively resolves the issue of reducing energy per bit. We utilize Matlab tool in order to evaluate the energy efficiency of receiving antennae. The outcome shows that antenna management can successfully diminish energy per bit to equate with a static MOBILE DEVICE design that keeps all antenna apparatus active.

Index Terms:--

Energy dissipation, Wireless Local Area Network (WLAN), mathematical model, Fourth Generation (4G) network

Heat Transfer Analysis of MHD Nanofluid Flow between Parallel Plates with Shape Effect

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Amrutha H P, Assistant professor, Department of Mathematics, Cambridge Institute of Technology- North Campus, Devanahalli, Bangalore, India

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Abstract:--

The chapter analyses the heat transfer in the flow of copper–water nanofluids between parallel plates. For effective thermal conductivity of nanofluids, Hamilton and Crosser's model has been utilized to examine the flow by considering different shape factors. By employing the suitable similarity transformations, the equations governing the flow are transformed into a set of nonlinear ordinary differential equations. The resulting set of equations is solved numerically with the help of Runge– Kutta–Fehlberg numerical scheme. The graphical simulation presents the analysis of variations, in velocity and temperature profiles, for emerging parameters. Moreover, the effects of relevant parameters, on skin friction coefficient and Nusselt number, are highlighted graphically. It is noticed that the velocity field is an increasing function of all the parameters involved. Furthermore, the temperature of the fluid is maximum for the platelet-shaped particles followed by the cylinder- and brick-shaped particles.

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Super Alarm Algorithm for In-Patient Monitoring System

Pushpa G, Asst.Professor, Dept. of CSE, PES University, Bangalore, India
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Abstract:--

As the technology is advancing and data is growing in health care domain, there is a vital growing need for rapid changes in monitoring patients in hospital, as well as for monitoring patients who admitted in hospital. CCTv's, sensors and other devices attached to wireless network may record the patient daily activities for entire day. These devices provide patient's raw context information which enables the detector system taking the decisions to avoid life-threatening situations of patients. In this work we propose a Super Alarm Algorithm to suppress false alarms rates and number of alarms for specific purpose for critical situations for In- patient monitoring system which can be deployed in a hospital special ward where, the proposed system uses physical system and application behavioral information context along with previous medical history of the related patients. This system has been tested by considering a five special wards of fifteen in number with 3 patients in each ward with different diseases and behaviors. The results are quite encouraging and it has been fault tolerant up to 85% by reducing false alarm rates and number of alarms by deploying generic super alarm for multipurpose.

Keywords:-

Wireless sensors networks, context parameters, mobile networks, patient monitoring, routing algorithms, alarm fatigue in patient monitors system

Effective Ordering Policies in EOQ Inventory System with Predictable factors

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Abstract:--

In this work, we studied a classical e-commerce ordering model to handle stock from warehouse. In bulk process any customer has the facility to order a product through communication technology and can return the product if he is not satisfied with service is damaged. Stake holder allows customers to return products to encourage customers and to promote business. The ultimate goal of the business is to maximize their profit with optimal resources. The inventory model with single-component preservation system and the replenishment schedule as decision variables are studied in this work. The productive items are maintained in the warehouse, and items are serviced on demand of the customers, any defective items are to be serviced if it serviceable or discarded. The system is regularly supervised with feasible periodical intervals, and warehouse system is maintained with frequent observations and inspections. We present an optimal ordering policy with anticipated changes in the rate of product and a simple procedure to handle this situation in the inventory system.

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A Survey on Automatic Patient Health Monitoring System

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Abstract:--

Health is a main challenge for humans in the society. To care of health usually people prefer hi-tech hospitals where the response will be fast and more there will be more effective treatment. To care of patients an automatic health care monitoring system has been developed. Patient automatic health caring system means that the doctors or the nurses monitor the patient without using separate equipment for measuring the body temperature and any external equipment. And no need to maintain a record details manually. Automatic health monitoring system which monitors all the body parameters of patient using a wearable device. Especially automatic persistent wellbeing checking framework is required in the emergency unit (ICU) because ICU so-called critical care unit where patient will be in critical condition needs special treatment and continuous monitoring of patient condition. In ICU there will be a patient like organ failure disease, suffering from malfunction, and post-surgery patients etc. Automatic patient health monitoring system is also required for less critical patients admitted the in wards. So, they don't require more body parameters to monitor. Even automatic patient monitoring is required for disabled and aged people who require continuous monitoring even at a home and in hospitals. It is significant for everyone on the planet to keep their wellbeing verified from each conceivable risk. Yet, more seasoned and impaired people groups are confronting heaps of troubles to care for their own wellbeing. As a result of some physical shortcoming, they need additional consideration and backing. Hence, senior and cripple people groups need something that causes them to screen consistently. Usually physically disabled and for elderly people automatic health monitoring system helps a lot.

There is plenty of research is going on the medical field devices or equipment's. Due to rapid development in the technology hospital are becoming smart, in addition to that patient monitoring inside the hospital and also outside is very important. This paper presents the various developments that have taken place in the field of hospital patient monitoring system from past many years. This paper describes the various methods of patient monitoring system over the years. This paper will also give comparative study on the various patients monitoring system that are available for intensive care unit and also for normal patient monitoring system.

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FPGA based Speed Control of Induction Motor

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Abstract:--

An FPGA can be programmed to produce desired output in the form of digital pulses. Xilinx is the software tool used to program the FPGA. The FPGA has several advantages over the Application specific IC's. Because of the flexibility of the FPGA, additional functionality and user interface controls can be incorporated into the FPGA minimizing the requirement for additional external components. The advancements in the electronic switches like IGBT has lead to high speed switching thereby controlling the energy delivered to the load in a effective manner. This is one of the best applications of IGBT in power electronics. This paper gives detailed information of how the analysis is done.

Test Pattern Generator for Digital circuits

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Abstract:--

This paper presents pattern generation for digital circuits using LFSR technique.So we have taken Faulty circuit that is DUT for indicating given ciruit is good or faulty.As we know Integrated circuits are high cost devices, so as to prevent chip from becoming obsolete, testing is required to isolate various faults. Large number of inputs, imply large number of possible combinations. This is cumbersome and resource intensive. Therefore here, Testing algorithms comes to the rescue. BIST is one of the DFT technique whivh can maintain data integrity,reduce complexity thereby decrease the testing cost and reduce reliance on external test equipment.

Index Terms:--

BIST, DFT, DUT, LFSR

Production of Rice bran biodiesel through Transesterification and evaluation of its physicochemical properties

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Abstract:--

The depletion of fuels obtained from petroleum in the near future and the harmful gases emitted by these conventional fuels leading to global warming are the major problems faced by the world today. In view of these problems, the world is looking for a strong viable source as alternate fuels for petroleum products. Raw rice bran oil is obtained after chaff from outer layer of rice. As the world is looking for the alternate and eco-friendly fuels, Biodiesel from rice bran oil could be major alternate source for diesel. The major crop of India is rice, and is second largest country of the world which produces rice. Biodiesel produced from rice bran is considered the most promising fuel substitute for diesel fuel. The present work investigates the process for production of biodiesel from rice bran oil and evaluating its physicochemical properties like flash point, fire point, density, viscosity etc. and comparing it with the conventional diesel.

Keywords:

Rice bran Oil, biodiesel, I C engine, Properties

Implementation of SVD and DWT method for satellite Image Enhancement

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Abstract:--

A new satellite image resolution and brightness enhancement technique based on the discrete wavelet transform (DWT) and singular value decomposition (SVD) has been proposed. Satellite images are used in many applications such as geosciences studies, astronomy, and geographical information systems. One of the most important quality factors in images comes from its resolution. The technique decomposes the input image into the four frequency sub- bands by using DWT and estimates the singular value matrix of the low–low sub band image, and, then, it reconstructs the enhanced image by applying inverse DWT. The technique also estimates the singular value matrix of the low–low sub band of histogram equalized image and normalize both singular value matrices to obtain brightness enhanced image. The technique is compared with conventional image equalization techniques such as standard general histogram equalization and local histogram equalization, as well as state-of-the-art techniques such as brightness preserving dynamic histogram equalization and singular value equalization. The experimental results show the superiority of the proposed method over conventional and state-of-the-art technique.

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Resuscitation of Quick Response Code for enhanced storage Capacity

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Abstract:--

In recent years, various companies have adopted the use of two-dimensional bar codes, also known as QR (quick response) codes, for encoding information such as URLs that can be read by smartphones, digital tablets and other electronic devices. These codes can serve as a vehicle to evoke a consumer response or some type of behavior. Their main benefit is that users of smartphones are improved from the tedious task of typing and searching to access information. The existing QR code can hold only 3MB of data and also due to the monochromatic representation of the QR code with limited storage capacity. In this paper we represent the QR code with RGB color code instead of monochromatic which intern increase the surface area of the QR code for storing the data. Our proposed system is expected to be useful in real-time interaction with different environments.

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A Critical Analysis of Review of Literature on Domestic Violence against Working Women

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Dr. Gururaj Phatak, Assistant Professor, Department of Studies in Management, GM Institute of Technology, Davangere, Karnataka, India

Abstract:--

In our society violence is prevalent everywhere, be it outside or inside the four walls of the home. Domestic Violence includes physical abuse, emotional, economic, verbal, and sexual abuse. The social stigma of public dishonor is the greatest cause for a woman to become trapped in this frightful environment. General observation reveals that a woman who is dependent financially on her partner or her family is more prone for violence, but it is not always true. Working women, who is equally contributing for her family as other counterpart, is also equally prone for domestic violence either from her spouse or family members.

Several studies have shown that working women in India is also caught up under the vicious circle of domestic violence .Many scholarly articles are available on these issues. Here in this paper an attempt is made by researchers to review different scholarly articles and understand why domestic violence against working women happens though she is financially empowered, also to examine its different forms and the factors which are making her endure. This article is based on critical analysis of literature review and secondary data.

Keywords:--

Socio-cultural factors, Domestic violence, Social stigma

Effect of isothermal aging on the electrical resistivity of abinary Sn-5wt%Sb solder alloy

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Abstract:--

A binary Sn-5wt. % Sb solder alloy was chosen as a potential alternative to Sn-Pb solder alloy to be subjected to many studies. The effect of isothermal aging on the electrical resistivity of a binary Sn-5wt% Sb solder alloy has been investigated. The study includes the structure and electrical resistivity using XRD, and four probes electrical circuit respectively. These properties were carried out for the cold worked alloy at (20 and after annealing at (40,100 for 40 min. During annealing, the precipitation behavior has been followed by the electrical resistivity measurements. According to the present experimental results, the resistivity of Sn-5wt% Sb alloys linearly increases with increasing temperature and composition. It was found that annealed samples exhibit more precipitations of the intermetallic compounds SnSb. These structural changes greatly affect the electrical resistivity. The resistivity changes in Sn-5wt% Sb alloy rises to maximum value and then decreases to constant value at any aging temperature. The maximum value increases as aging temperature increased. The little reduction in resistivity after the maximum value might be due to coalescence of precipitates and growth of their size resulting in decrease of scattering effect to the electrons.

Keywords: --

Lead-free solder alloys, Sn-Sb alloy, electrical resistivity, isothermal aging, and aging time

The Effect of Rhoeo Discolor Plant Leaves Extract on Corrosion Inhibition of Mild Steel in HCl

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Abstract:--

A study of corrosion inhibition of mild steel by Rhoeodiscolor plant extract in 0.5M HCl solution was evaluated by potentiodynamic polarization and electrochemical impedance methods. Different concentrations of inhibitor such as 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, and 2.0 gram were added to the electrolyte. Corrosion rate (CR) of mild steel and inhibition efficiency (IE) were determined at various temperatures of 313K, 318K, and 323 K. The appreciable decrease in CR with increase in plant extract concentration was observed at each temperature. However, the typically accelerated CR at each plant extract with the rise in temperature corresponded to the increased kinetic activities at the metal/electrolyte interface. Addition of 2.0 g of plant extract showed higher efficiency 87.72 % (313K), 79.78% (318K) and 74.84 % (323 K). Electrochemical polarization method showed the inhibitor is of mixed type. It showed that incrementing in E_a for inhibited solution ranged from 16.8 to 72.95 kJ/mol was interpreted by physical adsorption leading to the formation of adsorptive film of electrostatic character. The value of ΔH showed positive value (26.93 kJ/mol to 73.018 kJ/mol) which indicates the endothermic nature of mild steel and it also implies that increasing in entropy activation in presence of inhibitor results in increasing the disordering as it goes from reactant to activated complex. At finally it obeys the Langmuir adsorption isotherm.

Key Words:--

Inhibitor; Inhibition; Hcl; Mild steel; concentration; Temperature

Super Alarm Algorithm for In-Patient Monitoring System

Pushpa G, Asst.Professor, Dept. of CSE, PES University, Bangalore, India
Rachana B S, Asst.Professor, Dept. of CSE, PES University, Bangalore, India

Abstract:--

As the technology is advancing and data is growing in health care domain, there is a vital growing need for rapid changes in monitoring patients in hospital, as well as for monitoring patients who admitted in hospital. CCTv's, sensors and other devices attached to wireless network may record the patient daily activities for entire day. These devices provide patient's raw context information which enables the detector system taking the decisions to avoid life-threatening situations of patients. In this work we propose a Super Alarm Algorithm to suppress false alarms rates and number of alarms for specific purpose for critical situations for In- patient monitoring system which can be deployed in a hospital special ward where, the proposed system uses physical system and application behavioral information context along with previous medical history of the related patients. This system has been tested by considering a five special wards of fifteen in number with 3 patients in each ward with different diseases and behaviors. The results are quite encouraging and it has been fault tolerant up to 85% by reducing false alarm rates and number of alarms by deploying generic super alarm for multipurpose.

Key words:

Wireless sensors networks, context parameters, mobile networks, patient monitoring, routing algorithms, alarm fatigue in patient monitors system

Computer Vision based automated growth monitoring and regulation system for Mushroom Cultivation

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Abstract:--

Mushrooms especially Oyster Mushroom is grown as one of in-door crop and has a productivity of 16% in India (domestic and export), Mushrooms are important source of Protein. As the demand for Mushroom is increasing in the market, the production rate must meet the market needs. Seasonal Mushroom growers are use crude method for harvesting Mushrooms and can take only 2 crops a year. The seasonal mushroom growers are confined to temperate areas such as Himachal Pradesh, Jammu and Kashmir, hilly regions of Uttar Pradesh, hilly regions of Tamil Nadu and North Eastern hilly regions.
Commercial grower who takes 4-5 crops in a year in environmentally controlled modern cropping houses are less in number. To increase the production rate and monitor the quality of Mushroom grown, it is necessary to automate Mushroom cultivation. This project deals with the automation of Mushroom cultivation which includes condition management (RH, T) by using different types of sensors in-turn controlled using Raspberry pi.

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Research on VLSI solution for Image Integrity Protection Schemes for IPTV Applications

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Abstract:--

Image authentication technique aims to protect illegal modification of image and thus assuring the image authenticity and integrity. This paper presents a literature survey of the emerging techniques for watermarking-based image authentication and its implementation by using FPGA is presented with the detailed description of existing watermarking-based image authentication schemes. A characteristic analysis for all introduced schemes and comparisons of them in terms of various parameters.

Index Terms:--

FPGA, Image authentication, Robustness, Watermarking method

Analysis and Optimisation of Shielded Metal Arc Welding Process Parameters in joining process

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Abstract:--

The shielded metal arc welding is one of the most common welding that is generally employed in fabrication process in small scale industry to weld component due to its ease of operation, high strength joints, and also because of its lower cost compare to different electric arc welding. The various parameter which affect the quality of the weld are , welding current, polarity of electrode, angle of electrode RSM based model is used to maximize the welding strength on AISI 1020 steel plates.

SMAW is often used to weld carbon steel, low and high alloy steel, stainless steel, cast iron, and ductile iron. While less popular for nonferrous materials, it can be used on nickel and copper and their alloys and, in rare cases, on aluminum. The thickness of the material being welded is bounded on the low end primarily by the skill of the welder, but rarely it drop below 1.5 mm (0.06 in). No upper bound exists: with proper joint preparation and use of multiple passes, materials of virtually unlimited thicknesses can be joined. Furthermore, depending on the electrode used and the skill of the welder, SMAW can be used in any position.

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Testing Of New Catalytic Converter (Current Trends in Automotive Emission Reduction)

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Abstract:--

Due to deteriorating environmental quality caused by increased emission from uncontrolled combustion of conventional fuels from petroleum sources and day-by-day depletion of these petroleum resources have made the world wide attention on development of Emission Reduction Systems & Alternative Fuels for Motor Vehicles.

As we know that reduction in engine out emissions through combustion optimization and electronic management of engine & fuel system, & exhaust gas after treatment have been main contributors to achieve the specified low emission targets.

Each of above said system has its own contribution towards eliminating or minimizing pollutants from automobiles.

Now, we will glance on one system i.e., exhaust gas after treatment. It means filtration of exhaust gases, which needs mainly a device known as catalytic converter.

In a new catalytic converter a mixture of cooper oxide & cerium oxide (CuO+ CeO2) has been tried in this work as a catalyst for exhaust treatment. Since it is much cheaper than the precious metals, platinum & rhodium, now used in the three way catalytic converter (TWC). A reactor was designed for this catalyst & tested on a multi-cylinder automotive S.I. engine. Secondary air was injected into the reactor to aid oxidation of HC & CO.

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Comparative Analysis of Multi-Pulse Inverter for Facts Application

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Abstract:--

This paper is concerned with comparative analysis of multi pulse Inverter which is used in FACTS; the rapid development of power electronics technology provides opportunities to develop new power equipment to improve the performance of the actual Power Systems for the Power flow control, voltage regulation, enhancement of transient stability & damping of power oscillations. Advancement in GTO & IGBT -VSI for switching converter circuit & can act as either a source or sink of reactive AC power to an electricity network. In this work, a comparative analysis has been carried out on the various multilevel inverter topologies. Simulation results on three topologies are presented to highlight the relative merits.

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Corrosion Characterization of Aluminium Hybrid Metal Matrix Composites for Real-time Engineering Applications

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Abstract:--

Corrosion characterization of Aluminium composites is a significant study planned for assessing the capability of utilizing the materials for aviation and automobile parts. Aluminium 5083 is a particular class of alloys which is known for its corrosion resistance in extraordinary conditions and is utilized in aerospace components. However, the experimentations on impact of reinforcements, for example, the effect of Silicon carbide and Flyash on corrosion properties of Aluminium 5083 alloys is still in its incipient stage and not much literature is available outlining the corrosion attributes. The present work includes the fabrication of Aluminium 5083 – Silicon carbide – Flyash composites and investigation of the corrosion conduct of these composites. The composites are fabricated by stir casting procedure, considering silicon carbide particulates varied in the scope of 3 wt.% to 9 wt.% at an intermittent interval of 2 wt.%. The composition of fly ash in the present work is limited to 5 wt. % for restricting the porosity after conducting preliminary trials. The composite materials considered in this research are assessed for corrosion by Potentio-dynamic test, which is accomplished utilizing a test arrangement comprising of five mouth jar with calomel electrode and a working cathode (comprising of the specimen held rigidly with a copper wire and secured with Teflon tape notwithstanding a region of one square centimeter exposed to the electrolyte). The anodic and cathodic potentio-dynamic polarization estimations are acquired as tafel plots in the PC that is interfaced with the test arrangement. The outcomes reveal that the corrosion current (Icorr) increases with the increase in the weight percentage of Silicon carbide in the metal matrix. The electrolyte considered for the potentio-dynamic test is and 1 M HCl (acidic) medium.

Keywords:--

Corrosion, Characterization, Aluminium, Hybrid, Metal, Matrix Composites

Information Theory Based Defense Mechanism against DDOS Attacks for WSAN

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Abstract:--

In this paper, an Energy efficient Secure Protocol (ESP) for sensor and actor networks has been proposed to handle distributed denial of service (DDOS) attacks. The DDOS is a spy game among the detectors and attackers. It degrades services to legitimate users by exhausting the resources of the target node. In this paper, information theory concepts are used to handle the DDOS attacks. In the proposed mechanism, when a large number of packets reaches to the sensors which are 1-hop (relay sensor's) away from the cluster head, they calculate the distance among suspicious flows of different paths to the victim actor. The suspicious flows can be confirmed as attack if the distances among them are almost same. NS2 is used for simulating the proposed protocol and its competitive mechanisms from the simulation results it is evident that the proposed protocol performs better by discarding the attack packets from the network.

Keywords:

Actor, sensor, relay node, DDOS, NS2.