3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	Online ISSN	Print ISSN
1	Dr.N.Abilash	volume 7, issue 18	Bio inspired optimization with transfer learning based crowd density Detection on Sparse Environment	ICPCSN-2023 Proceedings	International conference on pervasive computing and social networking	International	2023	NA	979-8-3503-3284-2
2	Mr.R.Robert	volume 9, issue 8	IOT based Digital Notice Board using Arduino	MATERIALS COMPUTING AND COMMUNICATION TECHNOLOGIES	ICMCCT 2022	International	2023	ISSN: 2394-4099	ISSN: 2395-1990
3	Mr.R.Robert	volume 9, issue 8	IOT based Automatic Pet Feeder	MATERIALS COMPUTING AND COMMUNICATION TECHNOLOGIES	ICMCCT 2022	International	2023	ISSN: 2394-4099	ISSN: 2395-1990
4	Gaswin kastro G	volume 2690, Issue 1	Design of Tunable Microwave filter using dual mode Resonator two pole band pass filter	AIP conference proceedings	ISET international conference on Applied Science and Engineering	International	2023	NA	NA
5	Ms.Priscilla Packia Slaca	NA	Effective broadside tests using test cube seed generation	AIP Conference Proceedings	Recent Trends in Science and Engineering	International	2022	NA	2393, 020118
6	Ms.Priscilla Packia Slaca	NA	Iot based automation in the Manhole system	AIP Conference Proceedings	Recent Trends in Science and Engineering	International	2022	NA	2393, 020119
7	Ms.Priscilla Packia Slaca	NA	Plan and development of efficient branch predictor for in-order RISC-V processor	AIP Conference Proceedings	Recent Trends in Science and Engineering	International	2022	NA	2393, 020123
8	Ms.Priscilla Packia Slaca	NA	A contemporaneous input vector monitoring Bot architecture using memory	AIP Conference Proceedings	Recent Trends in Science and Engineering	International	2022	NA	2393, 020140
9	G Golding kheeba	volume 7, issue 2	Investigation on vibration spectral activity and theoretical computation of an anti-cancer drug1 (p-toluenesulfonyl) Imidazole	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
10	Dr.A.Benham	volume 7, issue 2	Investigation on vibration spectral activity and theoretical computation of an anti-cancer drug1 (p-toluenesulfonyl) Imidazole	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
11	Dr.Gaswin Kastro	volume 7, issue 2	Investigation on vibration spectral activity and theoretical computation of an anti-cancer drug1 (p-toluenesulfonyl) Imidazole	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
12	Dr.D.Philip Daniel	volume 7, issue 2	Investigation on vibration spectral activity and theoretical computation of an anti-cancer drug1 (p-toluenesulfonyl) Imidazole	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
13	Dr.J.Sunil	volume 7, issue 3	Experimental investigation on the nano mechanical properties of lubricated and non-lubricated AISI 1018 mild steel using nanoindentation technique	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
14	Dr.J.Sunil	volume 7, issue 4	Experimental investigation on the thermal conductivity and thermal stability of cuo-coconut oil nanofluids	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
15	Dr.J.Sunil	volume 7, issue 5	Facile and scalable synthesis of zns and sn doped zns nano structures a study on electrachemical properties for corrosion application	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
16	Dr.J.Sunil	volume 7, issue 6	Improving overall equipment effectiveness in welding robot by using single minute exchage of dies and adding additional positioners and fixtures in bull machines	AIP proceedings	AIP	International	2022	NA	ISSN-0022-1945
17	Mr.R.Robert	Volume 9, Issue 1	Bluetooth based home automation system using mobile phone	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2394-4099	ISSN-2395-1990
18	Mr.R.Robert	Volume 9, Issue 1	MRI Based Brain Tumor Deduction Using Spearman Algorithm with Optimized CNN Classifier	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2394-4099	ISSN-2395-1990
19	Mr.J.Jayakumar	volume 9 issue 8	MRI Based Brain Tumor Deduction Using Spearman Algorithm with Optimized CNN Classifier	ICAMCCT 2021 Proceedings	ICMCCT 2022	International	2021	ISSN 2394-4099	ISSN-2395-1990
20	Dr.J.Sunil	NA	Effects of temperature and particles contraction on the thermal conductivity of graphene-Ni/coconut oil hybrid nanofluids	Materials Today Proceedings	Elsevier	International	2021	NA	ISSN-2214-7853

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21	Mr.M. Vadivel Subhash	Volume 9, Issue 1	Smart senior helmet	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2395-602X	ISSN-2395-6011
22	Mr.M. Vadivel Subhash	Volume 9, Issue 1	Thermal barrier coating for an internal combustion engine with various coating material and analysis using 3D finite element software	ICAMCCT 2021 Proceedings	ICAMCCT 2020	International	2021	ISSN 2395-602X	ISSN 2395-6011
23	S. Berlin shaheema	Volume 9, Issue 1	Security for EHR based on ECC with reconstruction method	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2395-602X	ISSN-2395-6011
24	S. Berlin shaheema	NA	Multi tier authentication of [illegible] storage: A survey	ICAMCCT 2021	ICAMCCT 2021	International	2021	NA	ISSN-2395-6011
25	S.Berlin shaheema Dr. J. Jasper	Volume 4, Issue 2	Perceptual based colour images segmentation and object detection through ABRD with algorithm modified with evolutionary strategy	IJSRCET Proceedings	IJSRCET	International	2021	NA	ISSN-2581-[illegible]
26	P.M. Anisha	Volume 8, Issue 8	Solar power smart assistance for irrigation system	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2394-4099	ISSN-2395-1990
27	J.Jayakumar	Volume 8, Issue 1	Solar power smart assistance for irrigation system	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2394-4099	ISSN-2395-1990
28	Jino I. Anna Dabhisha, Latha Mellanie, Arthi	Volume 8, Issue 8	Analysis of Agriculture data using data mining techniques application of big data	ICAMCCT 2021 Proceedings	ICAMCCT 2021	International	2021	ISSN 2394-4099	ISSN-2395-1990
29	V.G. Anisha Gnana Vincy	Volume 7, Issue 1	A Review on big data analytics and deep learning for [illegible] development	[illegible] Proceedings	[illegible]	International	2021	NA	ISSN 2456-[illegible]
30	Dr. Angeline Prabhavathy R	Volume 11, Issue 1	"A Study on Dewatered Concrete with sugarcane fibers flexural behavior"	IJMPERD	International Journal of Mechanical and Production Engineering Research and Development	International	2021	[illegible]	ISSN (P) 2249-6890
31	Dr. Angeline Prabhavathy R	Volume 16, Issue 01	Behaviour of RC Beams with Opening in the Flexural Zone and Mixed locations Strengthened using Steel Plates	Natural Science Edition	Journal of Xi'an Shiyou University	International	2020	NA	ISSN 1673-064X
32	Dr. Angeline Prabhavathy R	Volume 13, Number 9	"Experimental Study on Fibre Reinforced Eco-Friendly Self Compacting Concrete"	IJERT 2020	International Journal of Engineering Research and Technology	International	2020	NA	ISSN 0974-3154
33	Mr.R.Robert	Volume [illegible], Issue 1	Water Quality [illegible]	ICAMCCT 2020 Proceedings	ICAMCCT 2020	International	2020	ISSN 2394-4099	ISSN 2395-1990
34	Mr.R.Robert	Volume [illegible], Issue 1	IOT Based [illegible]	ICAMCCT 2020 Proceedings	ICAMCCT 2020	International	2020	NA	ISSN 2395-1990
35	G.Golding sheeba	Volume 16, Issue 11	Identification of structure activity relation of a synthetic drug 2,5 pyridine, [illegible] carbonitrile using experimental and theoretical investigation	WUTAN HUATAN JISUAN JISHU proceedings	WUTAN HUATAN JISUAN JISHU [illegible]	International	2020	NA	ISSN 1001-1749
36	Dr.J.Suni	Volume 9, Issue 6	Design and fabrication of hybrid power generator	ICAMCCT 2020 Proceedings	ICAMCCT 2020	International	2020	ISSN 2394-4099	ISSN-2395-1990
37	J.Prabhu	Volume 9, Issue 8	Design and fabrication of hybrid power generator	ICAMCCT 2020 Proceedings	ICAMCCT 2020	International	2020	ISSN 2394-4099	ISSN-2395-1990
38	Dr.A.Johnny Varghese	Volume 13	Low Velocity Impact, Fatigue and Visco-elastic Behaviour of Carbon/E-glass Intra-ply Fibre-Reinforced Nano-Silica Toughened Epoxy Composite	Springer	NA	International	2020	NA	ISSN 1876-990X
39	E.Vinitha B. Supriya	Volume 8, Issue 1	Design and implementation of Autonomous car using raspberry pi	ICAMCCT 2020 Proceedings	ICAMCCT 2020	International	2020	ISSN 2394-4099	ISSN-2395-1990
40	G.Golding sheeba	Volume 13, Issue 1	Identification and Analysis of Antioxidant and Antimicrobial activity of 1-(P-toluenesulfonyl) imidazole by theoretical and experimental analysis	PROCEEDINGS OF Journal of Theoretical and Experimental Biology	Journal of Theoretical and Experimental Biology	International	2018	NA	ISSN 0975-8720
41	Mrs. Angel. A. Jenifer	Volume [illegible]	Efficient Communication in underwater Acoustic Sensor Networks using Relay Nodes	International Journal of Innovative Works in Engineering and Technology (IJIWET)	IJIWET	International	[illegible]	NA	ISSN 2455-5797

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POTTALKULAM
AZHAGAPPAPURAM - 629 401
KANYAKUMARI DIST.

Bio-Inspired Optimization with Transfer Learning based Crowd Density Detection on Sparse Environment

[1]Dr.A. Poongodi
Assistant Professor
School of Computing Sciences,
Vels Institute of Science, Technology & Advanced Studies
Chennai
poongodimca1979@gmail.com

[2]S. Pooram
Assistant Professor (Sr.G)
Computer Technology-UG
Kongu Engineering College, Perundurai
vspooram@gmail.com

[3]B Srinivasa Rao,
Professor, Computer Science and Engineering,
Gokaraju Rangaraju Institute of Engineering & Technology,
Bachupally, Hyderabad-500090
bsrgriet2015@gmail.com

[4]Dr.N.Kopperundevi
Assistant Professor, SG-2
School of Computer Science and Engineering
Vellore Institute of Technology, Vellore, Tamil Nadu
kopperundevi.n@vit.ac.in

[5]mohit Tiwari
Assistant Professor
computer science and engineering
Bharati Vidyapeeth's College of Engineering, A-4, Rohini
Road, Paschim Vihar, Delhi - 110063
mohit.tiwari@bharatividyapeeth.edu

[6]Dr N. Abilash
Professor
Mechanical Engineering
Anna Vailankanni College of Engineering
Pottalkadon, Kanyakumari District
nceabi@rediffmail.com

Abstract—**Crowd density estimation is a major importance for applications including crowd control, public space planning, autonomous driving, visual surveillance, and warning visually distrait drivers previous accident. With strong scale, reflective, and translational symmetry, techniques to estimate the density of the crowd yield a promising outcome. But dynamic scenes with constantly evolving spatial and temporal domains and perspective distortion yet have difficulties. The dynamic nature of scenes and the complexity of demonstrating and integrating the feature space of objects of different magnitudes as predictive prototypes are the primary reason for this. This manuscript presents a Red Fox Algorithm with Transfer Learning based Crowd Density Detection (RFOTL-CDD) technique in Sparse Environment. The purpose of the RFOTL-CDD system lies in the effectual identification and classification of distinct types of crowds in a sparse environment. To achieve this, the presented RFOTL-CDD method uses a ResNet prototype for feature vector generation. For the identification and classification of a crowd, the RFOTL-CDD technique applies Naïve Bayes (NB) classifiers. In this work, the RFO algorithm is utilized for boosting the performance of the ResNet method. The stimulation outcomes of the RFOTL-CDD technique can be well studied on a crowd dataset and the outcomes confirmed the supremacy of the RFOTL-CDD technique on crowd detection.**

Keywords— Crowd Density; Red Fox Algorithm; Transfer Learning; Deep Learning; Sparse Environment; Red Fox Algorithm with Transfer Learning (RFOTL).

I. Introduction

Recently, crowded events like marathons, music concerts, political gatherings, ceremonies, and tourist places [1] [2] [3] crowd counting issue, as an ML and computer vision problem, picks sole imagery or a scrutiny segment as input and [illegible] evaluate how many individuals are present. It is of crucial significance to communal safety and automated scrutiny [4]. Although enormous steps have been taken in crowd counting, it remains still a threat because of critical obstruction, severe observant alterations, and different mass concentrations [3]. The objective of the study on the subject of crowd counting and mass evaluation is to aid the day-to-day requirements of the populace which is of great enforcing importance for crowd counting and mass evaluation in real constructs [4]. Hence, crowd counting and mass evaluation can be prolonged to the succeeding three applications in actual-life setups; big sports arenas, train stations, large shopping malls, airports, and tourist attractions are mass assembly locations, and the number of individuals assembled in these locations is normally very tremendous [5]. The operator via the electric photographic tool surveillances such places in real-time mass dynamic data, and hence, the appropriate technology is implemented to examine the possible security threats, to grasp the disastrous incident in the bud [6]. Crowd counting research can also give initial caution of abnormal modifications in the number of individuals at specific significant places like government places, etc.

The conventional techniques implement low-level aspect processing protocols [7]. Many mass concentration assessments have been suggested by employing this method in account of object dispersal in the scene like concentrated mass scenes and dearth concentration [8]. The second method is founded on CNN; the suggested procedures in this method can be categorized as regression-based or detection. A detection method finds objects in the scene by employing detecting sensors [9], and the amount of objects detected is then employed to compute the mass amount. The detection founded procedures precisely work for ideal scene with dearth [illegible]

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IOT Based Digital Notice Board Using Arduino

R.Robert[1], N.Akilan[2], S.Naveen Kumar[2], C.Pon Sekar[2], G.Santhosh[2]
[1]Assistant Professor, Department of Electronics and Communication Engineering, Annai Vailankanni College of Engineering, Tamil Nadu, India
[2]B.E. Third year students, Department of Electronics and Communication Engineering, Annai Vailankanni College of Engineering, Tamil Nadu, India

ABSTRACT

Internet of thing is an entity of the physical or virtual object, which is able to identified as well as integrated into communication system. Growth of IoT can be seen extremely fast in our present life. It is acknowledged that by 2020 thousands of billions of objects will be deployed globally. We trust to facilitate IoT as software-driven, therefore utility requirements resolve the modernization as well as improvement towards IoT. Primary domains identified are energy transportation, distribution, smart town, smart communication, smart domestic, atmosphere, supply chain, as well as fitness care. This project propose that Arduino based LCD display which we can control from mobile application which uses the Bolt platform. The information from the mobile application is store in the IOT server and it will send to the Arduino using wifi module. Then Arduino can project the information through LCD. The Project can be implemented in wide range of all sectors such as Educational Institutions, Government and private Organizations, Malls, etc.

I. INTRODUCTION

"The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the a bility to transfer data over a network without requiring human-to-human or human-to-computer interaction." An internet connection is a wonderful thing, it give us all sorts of benefits that just weren't possible before. If you're old enough, think of your cell phone before it was a smartphone. You could call and you could text, sure, but now you can read any book, watch any movie, or listen to any song all in the palm of your hand. The point is that connecting things to the internet yields many amazing benefits. We've all seen these benefits with our smartphones, laptops, and tablets, but this is true for everything else too. And yes, we do mean everything. The Internet of Things is actually a pretty simple concept, it means taking all the physical places and things in the world and connecting them to the internet. Confusion arises not because the concept is so narrow and tightly defined, but rather because it's so broad and loosely defined. It can be hard to nail down the concept in your head when there are so many examples and possibilities in IoT. When something is connected to the internet, that means that it can

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IOT Based Automatic Pet Feeder

R.Robert[1], C.Jerisha[2], S.Mable Vimala[2], N.S.Nanthini[2], T. Saranya[2]

[1]Assistant Professor, Department of Electronics and Communication Engineering, Annai Vailankanni College of Engineering, Kanyakumari, Tamil Nadu, India

[2]B.E, Third year Students, Department of Electronics and Communication Engineering, Annai Vailankanni College Of Engineering, Kanyakumari, Tamil Nadu, India

ABSTRACT

We own pets for their companionship gives us emotional support. It helps to reduce our stress and sense of loneliness. We treat pets as part of our families. We always want to take good care of our pets supplying timely nutritious food. Often times we may not be able to supply food timely to our pets. The Internet of Things (IoT) technology can improve quality of life by intelligently connecting physical devices through internet. We here investigate the application of IoT to automate the process of pet feeding. We use two feeders one for solid food and one for liquid food. The dispenser of solid food is controlled by a DC servo motor and that of liquid food is controlled by a DC solenoid valve. The motor and solenoid valve will be controlled by ATSAMD21 chip microcontroller. A ublox Wi-Fi module is used along with the microcontroller to enable the connection of actuators to the internet. A camera module is also used so that the owner of the pet can monitor remotely the pet's activities. The owner of the pet can control the pet feeders from anywhere in the world and also can monitor his pets, through any internet enabled device like smart phone. The process of pet feeding can also be automated by the owner by configuring the microcontroller appropriately.

I. INTRODUCTION

IMPORTANCE OF PETS

Pets are part of our everyday lives and part our families. They provide as with companionship but also with emotional support, reduce our stress levels, sense of loneliness and helps us to increase our social activities and add to a child's self- esteem and positive emotional development.

PETS ARE GOOD FOR HEALTH

If you spend around 15 minutes petting your favourite cat or dog, your body will release the following natural "feel good" hormones: oxytocin, prolactin and serotonin. It also lowers your cortisol, which is the body's natural stress hormone. Not only will this send your body into a relaxed state, but it can also lower your blood pressure by 10% too. If you own a dog, though you will have to walk it at least once or twice a day which means

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Design of tunable microwave filter using dual mode resonator two pole bandpass filter

Gayam Kastro G.; Anu Pradeeba W.; Jani T

+ Author & Article Information

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Filters are useful components in electronic design. They are required in any communication systems for frequency selection. They allow certain frequencies to pass and reject unwanted frequencies. Microwave signals require special circuits and transmission lines and therefore the design of microwave filters are complex. Modern communication systems require operation in more than one frequency band therefore the microwave filter should be able to operate with more than one center frequency. A tunable microwave bandpass filter is implemented using microstrip lines. The filter is designed using multimode resonator (MMR) and coupled line transmission lines. The filter is simulated in ADS 2009 with substrate material being RO4003C whose dielectric constant is 3.365. Centre frequency of the designed filter is tuned with the aid of varactor diodes. In the passband insertion loss of 1.5 dB and return loss of 25 dB was achieved.

Topics

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Effective broadside tests using test cube seed generation

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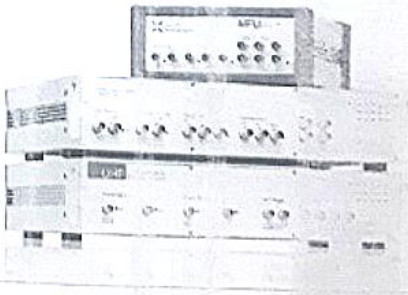
P. Pattunna Rajam, M. Mercy Theresa, Priscilla Packia Slacer, et al.



Iot based automation in the Manhole systen

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Priscilla PackiaSlacer, P. Pattunna Rajam, Mercy Theresa, et al.

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Plan and development of efficient branch predictor for in-order RISC-V processor

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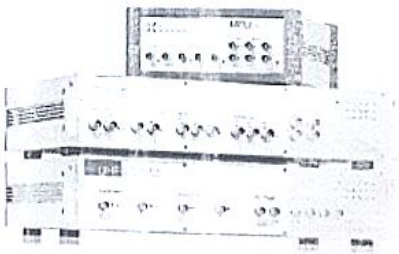
A. Benila, R. Indra Priyadharshini, Priscilla Packia Slacer, et al.



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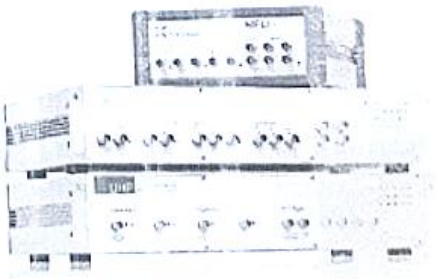

Investigation on Vibrational Spectral Activity and TheoreticalComputation of an Anticancer Drug 1- (P-Toluenesulfonyl) Imidazole

G. Golding Sheeba[1, a)], D. Usha[2, b)], M. Amalanathan[3, c)], A. Benham[4, d)], G. Gaswin Kastro[5, e)], and D. David Philip Daniel[6, f)]

[1]*Department of Physics, Annai Vailankanni College of Engineering, Kanyakumari, India.*
[2]*Department of Physics & Research Centre, Women's Christian College, Nagercoil-629001, India.*
[3]*Department of Physics & Research Centre, Nanjil Catholic College of Arts and Science, Kaliyakkavilai-629153, India.*
[4]*Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Kanyakumari, India.* [5] *Department of Electronics and Communication Engineering, Annai Vailankanni College of Engineering,Kanyakumari, India.*
[6] *Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Kanyakumari, India.*

[a)]Corresponding author: sheeba-ph@avcc.edu.in
[b)]ushajustuswcc@gmail.com
[c)]nathan.amalphysics@gmail.com
[d)] principal@avcc.edu.in
[e)] gaswin-cc@avcc.edu.in
[f)] director@avcc.edu.in

Abstract. Vibrational spectral investigation and DFT computation have been performed on the anticancer drug 1-(p-toluenesulfonyl) imidazole (IPTSI) The structural parameters, intermolecular interactions and vibrational wavenumbers of the title molecule have been analysed with the help of B3LYP method. A detailed interpretation of the IR and Raman spectra of IPTSI have been reported and analyzed. Vibrational modes of the title compound have been done on the basis of the potential energy distribution (TED) using VEDA software. The molecular electrostatic potential mapped onto total density surface has been obtained.The possible intramolecular interactions such as ICT, hyperconjucative interactions have been exposed by natural bond orbital analysis. The analysis of HOMO and LUMO gives an idea of the delocalization. The energy gap between HOMO and LUMO is found to be low and indicates electron transport in the molecule and thereby bioactivity. Effective docking of the drug molecule with different protein also enhances its bioactive nature.

INTRODUCTION

Imidazole derivative is an aromatic hetro cyclic compound and is used for many application in the biological and medical fields [1]. The imidazole is an important synthetic precursor in the field of drug discovery [2- 4]. The antibacterial, antifungal, antiprotozoal, antihelminthic, anti-HIV, antimicrobial, anti-convulsant, antitubercular, medications activities of imidazole derivative have already reported [5-9]. It can also act as a potentialanticancer agent [10]. The potential imidazole derivatives have been used in the field of metal corrosion inhibitors fire retardant, powerful explosives, photography, dyes and agricultural chemicals [11-13]. It also used in optical field[14]. It also have significant analytical applications due to their fluorescence properties. As part of our investigations on compounds of great pharmacological interest [1], in this work we have studied from a theoretical point of view the structures and vibrational properties of the 1-(p- toluenesulfonyl)imidazole compound. In addition to the ablove the imidazole derivatives have used in the biological field such as anti-inflammatory [15], anti-allergic [16], analgesic [17], antibacterial [18], anti-oxidant [19], antitumor [20], Heme oxygenase-1 (HO-1) and Heme oxygenase-2 (HO-2) inhibitors and their cytotoxic activity [21], FAK inhibitors with anticancer activity [11], light- sensitive materials in photography are known as inhibitors, fungicides and herbicides [22], inhibitors of p38 MAP kinase [23].

For the last ten years, DFT [24] studies and analysis has been accepted by the ab initio quantum chemistry community as a well-liked approach for the computation of molecular structure, vibrational wavenumbers and bonding energies of chemical reactions. Calculation of vibrational frequencies using DFT provides a hopeful cost effective method for calculating vibrational spectra of all type of molecules. At present the harmonic vibrational wave numbers of medium sized well calculated organic molecules have been computed with different methods [25-27].

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Experimental investigation on the nanomechanical properties of lubricated and non-lubricated AISI 1018 mild steel using nanoindentation technique

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R. Rajaraman, R. A. Arul Raja and J. Sunil


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AIP Conference Proceedings

Experimental investigation on the thermal conductivity and thermal stability of CuO-coconut oil nanofluids

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N. Senthilgiri, K. Balaji, M. Elango, et al.

AIP Conference Proceedings

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S. Ravikumar, S. Surendhiran, J. Sunil, et al.

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Improving Overall Equipment Effectiveness in Welding Robots by Using Single Minute Exchange of Dies and Adding Additional Positioners and Fixtures in Bull Machines

N. Senniangiri[1, a)], J. M. Aravinth[1], P. Gokul Raj[1], S. Hariharan[1], S. Bharanidharan[1], and J. Sunil[2]

[1]*Department of Mechanical Engineering, Nandha College of Technology, Perundurai-638052, Erode, Tamilnadu, India.*

[2]*Department of Mechanical Engineering, Annai Vailankanni College of Engineering, AVKNagar-629 401, Tamilnadu, India*

[a)]Corresponding author: senniangirinatarajan1987@gmail.com

Abstract. In this study an attempt made to improve the Overall Equipment Effectiveness (OEE) in welding robots by adding additional positioner. OEE tool is used to evaluate the effectiveness of an equipment as well as efficiency of the organization by utilizing other resources such as manpower and materials. The idle time is utilized for rising the OEE through SMED (Single Minute Exchange of Dies) by incorporating new positioned having relatively low weight. The idle time study of total welding in robot was estimated by time study before and after the addition of positioned and their results are discussed.

INTRODUCTION

Welding process joins the metals or thermoplastics using high heat to melt the parts together and allowing them to cool, causing fusion which is distinct from lower temperature metal-joining techniques like brazing and soldering. Arc, gas, laser, MIG and TIG welding techniques widely used in various sectors. The various techniques for enhancing the quality of thin-walled metal welding with precise configuration of the workpiece positioning and reducing the welding defects [1]. Welding robots are extensively used for welding works in all manufacturing industries due to their flexible, competent and precise operation. The trajectories of the robotic arms should be optimized for effective manipulator performance by modifying the kinematic parameters [2]. The process parameters, robustness to noise and process fluctuations are to be optimized through neural network technologies for optimizing a welding process [3]. To meet the challenges in the task planning of the robot efficient path optimization technologies through intelligent optimization algorithms are developed [4].

In any manufacturing process, Single-minute or single-digit minute exchange of die (SMED) is an unique manufacturing technique which is an effective way of converting a manufacturing process from running the existing creation to running the next product in which the rapid changeover reducing uneven flow (Mura) as well as output variability within a minute or take less than 10 minutes (single-digit minute). Further, in the One-Touch Exchange of Die (OTED) technique, the die or tool changeovers take less than 100 seconds and the simultaneous utilization of both SMED and OTED may dramatically reduce the time taken to complete equipment changeovers. The overall Equipment Effectiveness (OEE) is the best practice for determining the manufacturing productivity. The 100% of OEE score refers that the quality products are being produced by the mechanical system at 100% Performance. Further, it reveals the important insights to systematically enhance the manufacturing process of a unit by eliminating waste which mainly depends on Availability, Performance and Quality. The availability considers the unplanned stops, changeover time, single-minute exchange of dies and remaining time after availability loss is subtracted to estimate the Run Time. In performance, the details of slow cycles and small stops like misfeeds, schedule Loss are taken into account. The time excluding the quality loss is the productive time [5-6].

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Bluetooth Based Home Automation System Using Mobile Phone

R.Robert*[1], P.M.Ansho[2], Y Jensi[3], T. Ramalakshmi[3], R.Dhanesh[3]

[1]Assistant Professor, Department of Electronics and Communication Engineering, AnnaiVailankanni College of Engineering, Tamil Nadu, India

[2]Assistant Professor, Department of Electrical and Electronics Engineering, AnnaiVailankanni College of Engineering, Tamil Nadu, India

[3]B.E, Final year students, Department of Electronics and Communication Engineering, AnnaiVailankanni College of Engineering, Tamil Nadu, India

ABSTRACT

Electronic devices and appliances have become very common in this recent year of technology especially with fast development in smart phones. In this paper, the design of Home Automation System compatibly with local housing and good features for home automation via remote access are presented. Bluetooth Based home Automation System using Android and Arduino is design and implemented. In this research work a part of smart home technology which using Bluetooth in a mobile device is used, so it will cheap and efficient to use. This paper describe about home automation system which would use to enable home lighting, garage door motor, water pumping motor and smoke detection using a smart phone application with Bluetooth wireless technology. The system included three main components: an Arduino microcontroller for connecting the appliances, a Bluetooth module for signal transfer, and a smart phone with the Android application to control home appliances. Bluetooth technology and controlled system is that the operating range is low but it can controlled from anywhere inside of home, By using smart phone application we can control house hold appliances and provide security to decrepit peoples. The idea of paper is to control home appliances to avoid the dangerous of electric shock and convenience of decrepit and physically disable people, who can easily access and control the home appliances by staying at particular place and access them remotely without the help of other people. By using this system, our home automation works smartly by providing increased quality of life, and comforts to users.

I. INTRODUCTION

Nowadays ,we have remote controls for our television sets and otherelectronic systems, which have made our lives real easy. Have you wonderedabout home automation which would give the facility of controlling tube lights,fans and other electrical appliances at home using a remote control? Off-course.Yes! But, are the available options cost-effective? If the answer is No, we havefound asolution to it. Wehave comeup with anew system

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MRI Based Brain Tumor Detection Using Spearman Algorithm with Optimized CNN Classifier

R.Robert*[1], J Jaya Kumar[2], K R Abishekha[3], R.Shyla Jasmine[3], S.P.Keerthika Parvathy[3]
[1]Assistant Professor, Department of Electronics and Communication Engineering, Annai Vailankanni College of Engineering, Tamil Nadu, India
[2]Assistant Professor, Department of Electrical and Electronics Engineering, Annai Vailankanni College of Engineering, Tamil Nadu, India
[3]M.E-Communication Systems, Second year students, Department of Electronics and Communication Engineering, Annai Vailankanni College Of Engineering, Tamil Nadu, India

ABSTRACT

Medical image processing is the most challenging and emerging field now a day. Magnetic Resonance Images (MRI) act as the source for the development of classification system. The extraction, identification and segmentation of infected region from Magnetic Resonance (MR) brain image is significant concern but a dreary and time-consuming task performed by radiologists or clinical experts, and the final classification accuracy depends on their experience only. To overcome these limitations, it is necessary to use computer-aided techniques. To improve the efficiency of classification accuracy and reduce the recognition complexity involves in the medical image segmentation process, we have proposed Spearman based brain tumor segmentation. CNN classifier used to compare the trained and test data, from this we can get the classified result for tumor. The experimental results of proposed technique have been evaluated and validated for classification performance on magnetic resonance brain images, based on accuracy, sensitivity, and specificity. Detection, extraction and classification of tumor from MRI scan images of the brain is done by using MATLAB software.

I. INTRODUCTION

Computer aided image evaluation has pulled in large interest fromeachsignalprocessandmedicalresearchersbecauseofitsabilitytosurmount the challenges related with the subjective experimentation ofmicroscopic images. Characterization of biomedical images acting as asecond reader for quantitative tools, it mitigates the consequences of interandintrareadervariabilityondiagnosisandcomplementtheoption.Decisions can be made in a straight forward manner whereas ComputerAssisted Diagnosis (CAD) systems prevent pathologists from wasting theirtime on

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Effects of temperature and particles concentration on the thermal conductivity of graphene-NiO/coconut oil hybrid nanofuids

N. Senniangiri [a], Arul Raja [b], D. Prince Sahaya Sudherson [c], S. Vignesh [d], K.S. Sethupathy [d], T. Bharanidharan [d], J. Sunil [e,*]

[a] Department of Mechanical Engineering, Nandha College of Technology, Perundurai 638052, India
[b] Department of Mechanical Engineering, SRM Institute of Science and Technology, Chennai 600 026, India
[c] Rohini College of Engineering and Technology, Palkulam, Kanyakumari 629401, India
[d] Erode Sengunthar Engineering College (Autonomous), Thudupathi, Perundurai 638057, India
[e] Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Kanyakumari 629401, India

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ABSTRACT

The present study makes an experimental and theoretical exploration on the thermal conductivity of Graphene/NiO-Coconut oil hybrid nanofluids. The Scanning Electron Microscope (SEM) micrographs are used to characterize the nanomaterials. The Graphene with the average sheet thickness of 1–4 nm and NiO nanomaterials (70:30) are used as an additive for preparing nanofluids. The thermal conductivity of different concentrations of the hybrid nanofluid is studied by KD2-Pro thermal analyzer which measures based on transient hot wire method. The experimental outcomes show that the thickness of nanoparticle-base fluid interface and aggregated path of nanomaterials play a significant role in enhancing thermal conductivity over base fluid.

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1. Introduction

Strong environmental concerns over contamination and pollution of environment have accelerated the necessity for formulating renewable and bio-degradable lubricants. Recently, bio-lubricating agents like sunflower oil, soybean oil, cotton seed oil, rapeseed oil, coconut oil, jojoba oil, corn oil, palm oil and pongamia oil are found as alternative to mineral based lubricating oils as they are less toxic in nature. Bio-lubricants are preferable for all applications to minimize the friction and wear of interacting surfaces which are generally derived from bio-base oils for reducing the dependency on imported petroleum oils.

The unique characteristics of mono-nanofluids attract many researchers to use them to develop innovative thermal and heat transfer systems for different heat transfer as well as mechanical applications. The hybrid nanofluid is formulated by mono-dispersing two or more nanomaterials with the base fluid to concurrently produce superior tribological, thermo-physical and chemical behaviors. They can potentially be utilized for enhancing the convective heat transfer characteristics of the processes existing in industries like electronics, mechanical etc. Chitra and Kumar (2016) have formulated Water-EG (70:30 ratio) ceramic nanofluids at different weight fractions by utilizing ultrasonication technique and obtained more than 2 months of dispersion stability. They also have observed 75% of thermal conductivity improvement at 0.6 wt % of nanomaterial concentration [1]. Nikkam et al. (2014) have formulated Cu nanofluids through single-step method and observed 3.5%, 6% and 7.2% of thermal conductivity enhancement with 0.4 wt%, 0.8 wt%, and 1.6 wt% of nanomaterials concentration respectively at 200 C. They have concluded that metallic nanofluids are potentially used as coolant in industrial heat transfer applications [2]. Sundar et al. (2014) have observed 29% of thermal conductivity enhancement at 0.3% volume concentration of MWCNT/Fe_3O_4-water hybrid nanofluid [3]. The thermal conductivity of Graphene nanoplatelet/platinum hybrid nanofluid shows an enhancement of 17.77% at 40 °C and 0.1% of weight concentration (Yarmand et al., 2016) [4]. Ranjbarzadeh et al. (2019) have formulated an eco-friendly water/silica nanofluid using two-step method and estimated their thermal conductivity in different temperatures ranging from 25 °C to 55 °C and solid volume fractions of 0.1–3%.

* Corresponding author.
E-mail address: sunil0520@gmail.com (J. Sunil).

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Smart Sensor Helmet

M. Swathi[1], B. Maha Lakshmi[1], M. Rohini[1], C. Nanthini[1], M. Vadivel Subhash[2]
[1]UG Student, Department of Electrical Engineering, Cape Institute of Technology, Tirunelveli, Kerala, India
[2]Assistant Professor, Department of Mechanical Engineering, Annai vailankanni college of engineering, Tirunelveli, Kerala, India

ABSTRACT

Nowadays, advanced transportation technology and due to rise in the total number of vehicles, road accidents increases rapidly. At the same time, this advanced technology also increased the traffic hazards. Two wheelers accounts for 25% of total road accidents. Hence the ratio of road crashes that take place often increases causing immense loss of life due to poor emergency facilities. This paper provides an intelligent system to avoid two wheeler accidents and detection for human life safety. This proposed system includes a helmet controlled safety system where in the motorcycle ignition is enabled only when the helmet is put on and if a driver consumed alcohol is detected from the riders breath .We have used a pressure switch and a alcohol sensor for this purpose .In addition to this we have also proposed a mechanical locking system which prevents the use of kick start mechanism. A 315 MHz Radio Frequency Module as wireless link which able to communicate between transmitter circuit and receiver circuit. We have also used Arduino microcontroller to control the entire components in the system. Only when the rider put on the helmet then only the motorcycle's engine will start.

I. INTRODUCTION

In India, there is one death occur for every 4 hours due to road accidents. The total number of road accidents increased by 2.5 percent from 4,89,400 in 2014 to 5,01,423 in 2015. The main reason behind these accidents is carelessness and fault of the driver and it has been revealed as the single most responsible factor for road accidents, killings, and injuries on all roads in the country over a long period. In India, 377 people die every day due to road accident which is four times more than the annual death toll from terrorism. Among these two wheelers account for one fourth of total road crash deaths. Predictably most of those who die on roads perish because of preventable causes: drunken drive, speeding and overloading. In recent times, helmets have been made compulsory. Traffic accidents in India increases every year. According to Section129 of Motor Vehicles Act, 1988 makes it compulsory for every single riding a two-wheeler to wear helmet following to the standards of the BIS (Bureau of Indian Standards). In India, drunken driver case is a criminal offence. As a drunken driver is a potential murderer, he cannot perform his tasks without risks and endangers road safety. 70 percent of road crashes in India are due to

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Thermal Barrier Coating for an Internal Combustion Engine with Various Coating Material and Analysis Using 3D Finite Element Software

Vadivel Subhash M*, Abishekh S T[1], Dev Anand C R[1], Gandhimathi Nathan A S[1], Thevar Arunsundar Arumugam[1]

*Assistant Professor, Department of Mechanical Engineering, Annai Velankanni College of Engineering, Kanyakumari, Tamil Nadu, India.

[1]UG Scholar, Department of Mechanical Engineering, Cape Institute of Technology, Levengipuram, Tirunelveli, Tamil Nadu India.

ABSTRACT

The aim of this project is to increase the thermal efficiency and reducing heat loss of the single cylinder CI Engine by introducing Thermal barrier coating (TBC) in inner cylinder of the combustion chamber. The TBC materials has low thermal conductivity and high thermal stability, hence they possess low heat transfer through the wall of the combustion chamber there by heat loss is reduced and thermal efficiency in increased. This design project will be executing in CAD/CAE software. Firstly, the engine is designed by using Creo Parametric 2.0 software. Secondly, a designed engine is analysed with and without TBC material in inner cylinder of the combustion chamber by using 3D finite element software (ANSYS). A comparison study is made by parameters such as temperature distribution and heat loss. Then finally, the results obtained from all thermal simulations are compared with each other.

Keywords- thermal analysis; thermal barrier coating

I. INTRODUCTION

Internal combustion engines are the integral part of every automotive, we come across in our day-to-day life. The reliability of IC Engines, especially diesel based; make them the most widely used prime mover in automobiles. However, they are having very poor thermal efficiency. IC engines are constantly being modified in order to meet the rising demand for more efficient generation of power. The increasing pollution levels caused due to vehicular emissions also stress the need for intense research. It has been observed that there is an undesirable heat loss of more than 15% in an IC Engine through its combustion chamber walls and piston and about 19-22 Percent of fuel energy is rejected to coolant fluid this heat loss can be avoided by making use of TBC materials. Ceramics have a higher thermal durability than metals. Therefore, it is usually not necessary to cool them as fast as metals. Low thermal conductivity ceramics can be used to control temperature distribution and heat flow in a structure [3] [9].

Thermal barrier coatings (TBC) provide the potential for higher thermal efficiency of the engine,

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Security for EHR Based on ECC with Reconstruction Method

Benil T[1], Berlin Shaheema S[2], Jasper J[3]

[1]Department of Computer Science and Engineering, Ponjesly College of Engineering, Nagercoil, Tamil Nadu, India

[2]Department of Computer Science and Engineering, Annai Vailankanni College of Engineering, Nagercoil, Tamil Nadu, India

[3]Department of Electrical and Electronics Engineering, Ponjesly College of Engineering, Nagercoil, Tamil Nadu, India

ABSTRACT

Electronic Health Record plays vital role in hospitals and healthcare organizations. security is one of the main issues in EHR . Electronic Health Record allows only the licensed people can access the records. EHR ensure high-quality care. EHR contain treatment histories of patients. Using basic algorithms like symmetric algorithms, public key cryptography, RSA algorithm the Electronic health care can be secured, but there may be a few drawbacks to obtain integrity and confidentiality .The proposed ECC (Elliptical Curve Cryptography) will provide high security in EHR and obtain confidentiality and integrity. The doctors diagnoses, treatment plans, radiology images, and laboratory a test results. Treatments and guidance from doctors to patients mostly through e-mails, also many parties store and run computation while keeping the sensitive health data private.so cipher attack may cause heavy damage from the patients side therefore data may be secure. In order to address this issue this paper presents a patient healthcare data management system using reconstruction outsourcing mechanism to attain privacy in HC.

Keywords - Electronic Health Record, Symmetric key, ECC, HealthCare.

I. INTRODUCTION

Cryptography has been in use for centuries now, and the earliest ciphers were either used transposition or substitution, and messages were encoded and decoded by hand. However, these schemes satisfied only the basic requirement of confidentiality. In more recent times, with the invention of processing machines, more robust algorithms were required, as the simple ciphers were easy to decode using these machines, and moreover they did not have any of the afore mentioned properties. Secure data communication became a necessity in the 20t h century and a lot of research was done in this field by government agencies, during and following the world-wars. The most famous machine of this time.

An electronic health record (EHR) is a digital version of a records maintenance systems in hospitals and healthcare organizations. EHRs allows only the

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Multi-tier authentication of user access in cloud storage – A survey

S. Shiny ✉; J. Jasper; R. Megiba Jasmine; S. Berlin Shabeema

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Perceptual Based Color Image Segmentation And Object detection Through A BBO Algorithm Modified With Evolutionary Strategy.

S.Berlin Shaheema[*] Dr.J.Jasper[**]

[*](Assistant Professor ,Computer Science and Engineering,
Annai Vailankanni College of Engineering, Kanyakumari,India[1]
bshaheema@gmail.com)
[**](Associate Professor, Electrical and Electronics Engineering,
St. Thomas Institute for Science and Technology,
Trivandrum, India
mailtojasper@gmail.com)

Abstract -Color image segmentation is one of the challenging problems in image analysis and pattern recognition. It can be treated as a process of dividing a color image into regions with some coherent internal properties and each region is homogeneous. This paper addresses a perceptual based color image segmentation approach using a Biogeography based optimization (BBO) algorithm combined with Evolutionary Strategy (ES), which exploits the structurally challenging objects based on color, texture, edge information and saliency map in the CIE L*a*b color space. The color and texture of each segment does not typically exhibit uniform geometric characteristics in the segmentation of natural scenes. The proposed approach combines knowledge of human perception based on Gestalt law with an understanding of signal characteristics in order to segment natural scenes into perceptually uniform regions. The objects are grouped together without depending on a priori knowledge of the structurally challenging objects. The experimental results show that the proposed method outperformed the current state-of-the-art image segmentation approaches and achieved accurate segmentation quality on natural scene in terms of both qualitative and quantitative assessment.

Keywords – **Water Cycle Optimization (BBO), Evolutionary Strategy (ES), Gestalt law, Image Segmentation, CIE L*a*b**

I INTRODUCTION

Color image segmentation is an area of great importance in the field of image processing as it is a fundamental task for many applications of computer vision such as image analysis and pattern recognition. Color image segmentation is defined as the process of splitting or separating an image into meaningful object that exhibit similar features with respect to criterion such as color, texture, gradient [1],[2]. Color images carry much more information than gray ones; hence extracting object from color images is a difficult and challenging task [3]. Color image segmentation has been studied for decades and recently received much attention in image retrieval, video surveillance and object classification [4]. Image segmentation algorithms are generally based on one of two basic properties of the intensity values of the image pixels: discontinuity and similarity. In discontinuity, the methodology is to partition an

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POTTALKULAM
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KANYAKUMARI DIST.

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Solar Powered Smart Assistance for Irrigation System

Divya Jothi P[1], Jayakumar P, Ansho PM[2]
[1]UG Student, Department of EEE, Annai Vailankanni College of Engineering, Kanyakumari District, Tamil Nadu, India
[2]Assistant professor, Department of EEE, Annai Vailankanni College of Engineering, Kanyakumari District, Tamil Nadu, India

ABSTRACT

Irrigation is an important component of the agricultural system. It is generally reliant on rain, but since the development of the pressured irrigation system, the reliance on rain has lessened day by day. The farmers manually operate the pressured irrigation system. Because a manually controlled device necessitates additional people for supervision, it reduces field efficiency. This irrigation can result in overwatering when plants demand more water during their peak periods, as well as under watering when plants require more water. Water scarcity causes poor crop growth, late blooming, and decreased yields, all of which are serious concerns. Furthermore, excessive irrigation in the root zones causes root zone ill health and vegetation, resulting in additional costs for the farmer, as well as time and water waste. Also, a continuous supply of more than enough water might enhance the salinity of the land. In rural places, however, electrical supply is a big challenge. Farmers do not have a consistent source of electricity for agricultural activities. As a result, this research proposes a novel strategy for solar-powered smart irrigation systems in agricultural management that use a soil moisture sensor. Based on the detected data, the system automatically decides on the appropriate irrigation action and tells the user. The system also concentrated on the usage of solar energy by the sensors during communication. The report addressed the system's functioning mechanism and component specifics.

KEYWORDS: Smart irrigation, solar power, solar pump, moisture sensor, energy crisis, photovoltaic panel.

I. INTRODUCTION

Solar energy is the world's most plentiful source of energy. Solar power is not only a solution of today's energy issue, but it is also a green energy source. Photovoltaic generation is a cost-effective way to harness solar energy. Solar panels (a collection of photovoltaic cells) are now widely used to power street lights, water heaters, and other household appliances. Solar panels are becoming more affordable, which stimulates their use in a variety of industries. Irrigation systems for farming are one of the applications of this technology. In India's current energy crisis, a solar-powered irrigation system might be a viable option for farmers. This is a green method of energy generation that, after an initial investment, produces free energy. In this paper, we propose an

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Analysis of Agriculture Data Using Data Mining Techniques: Application of Big Data

Jino P[1], Anna Babisha T[1], Latha Malathi P[1], Arthi[2]
[1]Department of Artificial Intelligence and Data Science, Annai Vailankanni College of Engineering, Kanyakumari, Tamil Nadu, India
[2]Assistant Profoser, Department of Artificial Intelligence and Data Science, Annai Vailankanni College of Engineering, Kanyakumari, Tamil Nadu, India

ABSTRACT

Abstract In agriculture sector where farmers and agribusinesses have to make innumerable decisions every day and intricate complexities involves the various factors infuencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary approach for accomplishing practical and efective solutions for this problem. Agriculture has been an obvious target for big data. Environmental conditions, variability in soil, input levels, combinations and commodity prices have made it all the more relevant for farmers to use information and get help to make critical farming decisions. This paper focuses on the analysis of the agriculture data and finding optimal parameters to maximize the crop production using data mining techniques like PAM, CLARA, DBSCAN and Multiple Linear Regression. Mining the large amount of existing crop, soil and climatic data, and analysing new, non-experimental data optimizes the production and makes agriculture more resilient to climatic change.

Keywords: Big Data, PAM, CLARA and DBSCAN

I. INTRODUCTION

Background

Today, India ranks second worldwide in the farm output. Agriculture is demographically the broadest economic sector and plays a signifcant role in the overall socio-economic fabric of India. Agriculture is a unique business crop production which is dependent on many climate and economy factors. Some of the factors on which agriculture is dependent are soil, climate, cultivation, irrigation, fertilizers, temperature, rainfall, harvesting, pesticide weeds and other factors. Historical crop yield information is also important for supply chain operation of companies engaged in industries. These industries use agricultural products as raw material, livestock, food, animal feed, chemical, poultry, fertilizer, pesticides, seed and paper. An accurate estimate of

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A Review on Big Data Analytics and Deep Learning for Smart City Development

V. G. Anisha Gnana Vincy[1], M. Germin Nisha[2]
[1]Assistant Professor, Department of Computer Science and Engineering, Annai Vailankanni College of Engineering, AVK Nagar, Kanyakumari, India
[2]Associate Professor, Department of Electrical and Electronics Engineering, St.Xavier's Catholic College of Engineering, Chunkankadai, India

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ABSTRACT

The concept of smart cities came into reality because of the advancement in Computer and Communication Technologies. Internet of things (IoT) play a vital role in smart city development in which multiple IoT sensors are deployed across different locations for data collection about mobility of people, garbage, traffic etc. Deep Learning models has been applied on the data collected through IoT sensors in a smart city. This article reviews the use of data analytics and deep learning in the development of smart city. At the end, different research challenges are identified.

Keywords : Internet of Things, Deep Learning, Smart city, Big data analytics.

I. INTRODUCTION

A smart city is sustainable, prosperous, livable and a city that puts its people first. The smartness of a city depends on smart transportation smart crime detection prevention providing safety to citizens etc. The Smart City[1] always aims to provide smart services to the citizens through IoT and Data Analytics .The concept of data analytics and deep learning made Smart City into reality .Deep learning[2] is a machine learning technique which can be used effectively to gain insights from data understand the patterns from the data and classify/predict the data. Smart City uses the concept of IoT which uses sensors and connected devices to collect and analyse data. The collected data is used to manage resources and improve the quality of life of citizens. Smart City Development focus on improving the public transportation, manage traffic, reduce crimes, optimise water and power supply, smart healthcare, smart education and more.

IoT connects billions of devices such as smart sensors, lights and meters that can communicate and interact with each other over the internet and they can be remotely monitored and controlled .Data collected through IoT sensors[3] help to manage traffic, control pollution, make better use of resources and keep people safe and clean. Smart cities can process data from IoT devices and sensors to recognize patterns.

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A STUDY ON BACTERIAL CONCRETE WITH SUGARCANE FIBERS FLEXURAL BEHAVIOR

MS. P. KALA[1] & DR. R. ANGELINE PRABHAVATHY[2]

[1]Research Scholar, Department of Civil Engineering, Hindustan Institute of Technology and Science, Chennai, India

[2]Professor, Department of Civil Engineering, Hindustan Institute of Technology and Science, Chennai, India

ABSTRACT

This work estimates the flexural behavior of conventional concrete (CC), bacterial concrete (BC), and bacterial concrete incorporated with sugarcane fibers (SBC) and spotlights the role of sugarcane fibers in the bacterial concrete. The bacteria used in this analysis was Bacillus subtilies in liquid form to an optimized value of 1% with a concentration of 10^5. The sugarcane fibers with the grain size passing through a 4.75mm sieve in replacement of fine aggregates with an optimized value of 0.1% were used. The beams which were cast using conventional, bacterial, and with sugarcane fibers concrete are total 36 numbers for 28, 56, 84, and 112 days respectively. In those beams, different stirrups spacing is adopted as 130mm, 150mm, and 200mm. The concrete grade used for preparing concrete specimens was M25 and the beams were tested as per IS code 516 – 1999. The load at first crack, cracking behavior, cracking pattern, the pattern of deflections, and load at failure were observed and the values are tabulated. It is observed that the flexural behavior of bacterial concrete incorporated with sugarcane fibers was slightly improved compared to bacterial concrete and conventional concrete.

KEYWORDS: *Stirrups, Bacillus Subtilis, Sugarcane fibers, Crack pattern, Deflections*

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1. INTRODUCTION

The beams are loading transferable members from slabs to columns which in turn are transferred to foundations. Crack formation in beams decides the longevity of the other structural members. It is necessary to check the load-deflection characteristics of beams. These beams are categorized into three types. In a beam, the actual neutral axis is less than the critical neutral axis, then those beams are under reinforced beams and steel fails at first. When the actual neutral axis coincides with the critical neutral axis, then those beams are balanced sections and strain in steel and strain in concrete reaches maximum simultaneously. When the maximum strain in the concrete reaches first then those sections are over reinforced sections. The over reinforced sections are not provided to avoid brittle failure [1]. Flexural members are slender members that deform primarily by bending moments caused by concentrated couples or transverse forces. Flexural characterization is the most performed mechanical test on bio-composites after the tensile test. The flexural behavior of beams can be evaluated by conducting many tests [2]. The concrete with various types of fibers can improve the ductility, reduction in crack formation, and toughness.

Therefore, this study plans to compare the flexural behavior of CC, BC, and SBC beams that have almost the same compressive strength. The stirrups spacing's was kept as 130mm, 150mm, and 200mm spacing. The comparison of beams was done in terms of first crack load, maximum load, crack width, maximum deflection,

Behaviour of RC Beams with Opening in the Flexural Zone at Different Locations strengthened using Steel Plates

*Branesh Robert J[1] Angeline Prabhavathy R[2] Joanna P.S[3]
[1] Research Scholar, Hindustan Institute of Technology and Science, Chennai.
[2,3]Professor, Hindustan Institute of Technology and Science, Chennai.

Abstract: Service pipes and ducts used for water supply, wastewater system and computer networks are necessary for multi-storied RC buildings. The utility pipes placed under the floor beams increase the height of the headroom and the opening placed inside the floor beam reduce the beam's strength and causes cracks around the opening. In this case, strengthening the circular openings should be done to improve the beam behaviour by using steel plates in the flexural region. In this study, totally seven beams were cast; one control beam, three beams with unstrengthened circular openings of 150mm diameter in the flexural zone at the top (compression zone), centre and bottom (tension zone) and three beams with circular openings strengthened with steel plate around the opening. Two-point loading was used for testing the beams. The effect of using openings in beams with and without steel plates at different locations along the depth of the beam is investigated. In the beam with opening provided in the compression zone of the beam, the ultimate load decreased by 22% compared to the control beam and sudden failure occurred as the concrete in the compression zone was reduced due to the opening. The ultimate load decreased by 8.7% when the opening was provided in the tension zone of the beam at the midspan. Strengthening the opening with steel plate decreased the ultimate load capacity and the failure mode was shear failure with cracks in the shear zone instead of flexural failure mode. RC beam with circular opening provided in the tension zone is preferred to the beam with opening provided in the compression zone, because reduction in ultimate load capacity is only marginal compared to the control beam.

Keywords: Circular openings; Flexural zone; Strengthening; Steel plate; Ultimate load.

I. INTRODUCTION

In high rise framed structures, service ducts are necessary for various purposes. If the ducts are placed under the bottom of the beam covered by a false ceiling, the floor height increases resulting in the increase of the overall height of the building. The service ducts provided through transverse openings in RC beams reduce the floor height of the building. Due to the provision of openings in beams, the stiffness decreases, which reduces the load carrying capacity and causes excessive deflection under the service load.

Steel plates were used to strengthen openings large and small of various shapes such as square, rectangular and circular in T-beam flange to replace the concrete removed from the flange to form the openings [1]. Size of the opening and the method of strengthening affect the strength of RC beam with opening [2]. Steel plates were also found to be much more effective in reinforcing bars with gaps than CFRP sheets. With steel plates not only the absolute shear strength of the beam was restored but the failure mode was also shifted from the shear to the flexure mode [3]. When multiple openings are provided instead of a single opening, the plastic failure mechanism length increased. [4].

The CFRP layer wrapping used with two layers and three layers, strengthened the shear behaviour of the RC deep beams with openings. [5]. Specifically, RC rectangular beams with circle openings having diameter less than 44% of beam depth had little effect on the peak load size, but circle openings of diameter greater than 44% decreased the peak load by a minimum value of 34.39%[6]. When Aramid fibres are used as reinforcement to strengthen openings of RC beams, the concrete structures can carry heavy loads [7]. When circular openings are located in region of maximum shear of RC beams, it can lead to early collapse of the beam and the shear strength can be predicted using an analytical equation and compared with FE model [8]. Due to the strengthening of multiple openings in the shear span subjected to static load and impact load in RC beams, the strength capacity increased from 27% to 92% varying with the type of opening [9]. Two or three layers of CFRP sheets were essential to restore the original strength for deep beams with opening [10].

The most dangerous position in which to open up to the ultimate strength in the beams was near the support and the easiest spot to open the beams was in the center of the beam (flexure zone). The effect on the load carrying potential for opening at L/2 distance was very limited and thus the central part of the beam should be opened in the beam [11]. The distribution of shear stress in the centre of the upper and lower chords of the opening was null in the area of bending. The highest shear stress occurs in beams with openings at the high shear and high flexure-shearing area on the right lower edge of the corner and on the left upper edge of the corner [12]. In comparison with the equivalent rectangular form, it is demonstrated that the shape of the web opening and the location along the perforated beam length can also influence the structural behaviour of perforated beams in a significant way. [13].

It was found that studies were not conducted in RC beams with circular openings at different locations in the flexural zone strengthened with steel plates and hence such beams were investigated to study their behaviour with respect to the ultimate load capacity, load-deflection behaviour and the pattern of failure

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AVIT

AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY

EXPERIMENTAL STUDY ON FIBRE REINFORCED ECO-FRIENDLY SELF COMPACTING CONCRETE

Selvarani *[1], Angeline Prabhavathy [2]

[1]Department of Civil Engineering, DMI College of Engineering, Chennai, India

[2]Department of Civil Engineering, Hindustan University , Chennai, India

selvarani.srm@gmail.com[1],rangeline@hindustanuniv.ac.in[2]

Abstract

Self-compacting Concrete (SCC) is a concrete that flows under its own weight and does not require any external vibration for compaction. Due to the many advantages of this concrete, it is suitable for situations where congested reinforcement is used. In this experimental study, self-compacting concrete was developed for M30 grade of concrete using 25% of GGBS (Ground-Granulated Blast-furnace Slag) by weight of cement as partial replacement of cement and an optimum content of Polypropylene fibres at 1.00 Kg per cubic meter of concrete was also added to increase the strength of concrete. Waste Foundry Sand and Pond ash were used as partial replacement of fine aggregate (river sand) at 0%,10%,20%, and 30% by weight. The Optimum content of Pond ash was arrived at 30% replacement. Pond ash above 30% has not satisfied the EFNARC Specification and decreased the hardened concrete properties of SCC. Viscosity Modifying Agent and modified polycarboxylates based Superplasticizer are the chemicals used in the self-compacting concrete. The Fresh concrete fulfilled the EFNARC Specification. Cube specimens of size 150 x 150 x 150 mm, cylindrical specimens of size 150 x 300mm and prism specimens of size 100 x 100 x 400mm were prepared and their compressive strength, split tensile strength, flexural strength at 7 and 28 days and the durability properties were evaluated. The Polypropylene fibres also increased the strength of concrete. Mix VIII, fibre reinforced self compacting concrete obtained with 30% Pond ash and 20% foundry sand used as replacement for river sand and 25% of GGBS as a replacement of cement and 1.00 kg/m³ fibres has the maximum compressive strength and split tensile strength and a marginal decrease in flexural strength by 3% when compared to the conventional self compacting concrete at 28 days.The compressive strength of Mix VIII (PA-30%+WFS-20%) was maximum after additional 28 days of acid attack . Mix VIII with PA-30%+ WFS-20% had the least percentage loss in weight (1.80%) when exposed to sulphate attack for 28 days. SCC with 30% Pond ash and 20% foundry sand used as replacement for river sand exhibited good durability performance in terms of water absorption, acid attack and sulphate attack. It can be concluded that the self-compacting concrete formed by partially replacing the natural fine aggregates with foundry sand and pond ash is found to be economical, durable and environment-friendly and can be effectively used in the construction .

Key Words: *SCC (Self Compacting Concrete), FRSCC(Fiber Reinforced Self Compacting Concrete) PA (pond ash), NS (Natural sand), - polypropylene fibres, foundry sand*

* E-mail address of the corresponding author: selvarani.srm@gmail.com

Department of Civil Engineering

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KARAI VALLIAMMAI COLLEGE OF ENGINEERING
POTTALKULAM
AZHAGAPPAPURAM - 627 401
KANYAKUMARI Dist.

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Water Quality Monitoring System

R.Robert1, V.Kavidha2, M.Akalya*2, L.Liju2, A Nanthini2, R.V.Rabisha2
[1]Assistant Professor, Department of Electronics and Communication Engineering, AnnaiVailankanni College of Engineering, Tamil Nadu, India
[2]B.E, Third Year Students, Department of Electronics and Communication Engineering, AnnaiVailankanni College of Engineering, Tamil Nadu, India

ABSTRACT

Water quality monitoring in real time faces challenges because of global warminglimitedwaterresources,growingpopulation,etc.Hencethereisneedofdeveloping in better methodologies to monitor the water quality paramerters inreal time. Water pollution is one of the biggest fears for the green globalization.In order to ensure the safe supply of the drinking water the quality need to bemonitor in real time. This paper unfurls the design, implementation and controlof theprogrammedmonitoring system. Therootsof our projectlieon themethodology of IoT. In this paper we present and development of a low costsystemforrealtimemonitoringofthewaterqualitynIoT.Thesystemconsistofseveral sensor is usedto measuring physical and chemical parameters of theWater. The parameter such astemperature, PH, turbidity, flow sensor of the watercan be measured. The measured values from the sensors can be processed by thecore controller. The Arduino model can be used as a core controller. Finally, thesensor data can be viewed on internet using WI-FI system. For best result, theprinciple operation of the automatic gate control arrangement is subjected to dryrunning under various possible circumstances, with proteus as the platform forworking.

I. INTRODUCTION

WATER QUALITY MONITORING:-

The process of controlling various process machines and device is a fastgrowingphenomenonandapplicationareasrevolvearoundfieldssuchasindustry, customer service, maintain business, security biology, medical andsocial sciences. This paper showcases the implementation of a simple controlsystem. To do so we use a miniature dam model for testing in simulation withenhanced features for automation via a p interface. Thus, we [illegible] importantparameters such the threshold or cut-off water level for gate openings, flow rateandm[illegible]alorautomaticmodeselection.Waterbeinganimportantbasicrequirementfor living,needs to be conserved [illegible] preserved. Therefore,itsdistributionandusageisofutmostconsideration.Aspopulationincreasesday[illegible]theneed requirement ofwaterresourcehasbeenadded on our issue.

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Iot Based Smart Notice Board

Y. Sravana kumar[1], D. Hima Varshini[2], D. Tilothama[3], D.Jagadeesh[4], I. Jithendra[5]

[1]Asst Professor,Departmentof ECE, NS RAJU INSTITUTEOF TECHNOLOGY, SONTYAM, VISAKHAPATNAM, A.P, INDIA

[2,3,4,5]U.G Scholars, Department of ECE, N.S RAJU INSTITUTE OF TECHNOLOGY, SONTYAM, VISAKHAPTNAM, A.P, INDIA

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ABSTRACT: This project gives the best solution to replace the present paper-based notice board system with advanced electronic notice board. Wireless electronic notice boards have been designed, which completely eliminates paperwork and reduces the manual work and time. Building a IoT based projects gives the fast transformation of data and the user can access the data from anywhere in the world. In this project, we have developed a IoT based smart notice board. The main objective of this project is developing an automatic, self-enabled and highly reliable electronic notice board. A display connected with the cloud will continuously waiting for the message from the user, if the user uploads the data through the server, it will automatically upload to the LED. By using Wi-Fi moduleESP8266, the user can upload the message to the LED by accessing through the website connected to server. The user can write the data from anywhere in theworld to the LED. This will reduce the time to update the data as well as it will efficiently transfers the data to the end user.

Keywords: Arduino Uno, LED, Wi-Fi module, AT89S52 Microcontroller, SMPS for LED board

I.INTRODUCTION

The main purpose is to design this electronic notice board system is to interface it with user's mobile phones for displaying the latest information. In other words, the user sends the information from remote areas and this information is received through Wi-Fi module on the Arduino board at receiving end. This system is designed withAT89S52Microcontroller, which is interfaced with Arduino Uno and level shifter through serial cable. LED matrix is also used in this system for displaying the information or data. The Wi-Fi module is wireless component, which contain connection with server. We are using server and it has URL link that can be used by the authorized person and that person can write or re-write the information which want to display. This system is designed with AT89S52 microcontroller, which is interfaced with Wi-Fi module and level shifter through serial cable. LED Matrix is also used in this system for displaying the information or data.

The heart of this system is micro controller, this will receive data from Wi-fi modem using UART (universal transmitter and receiver), update this message on LED board through same UART only. This system also alerts the buzzer when new message is received. In this we are using Atmel AT89S52 controller, it is 8bit controller which has inbuilt 8k 8 bytes flash memory,256 bytes RAM and 32 I/O pins and UART. The advantages of this controller are low cost, availability of tools and resources are more.

Wi-Fi technology is a long-range wireless communications technology. It has beendeveloped rapidly in recent years. In this we are using Wi-Fi module and its operating voltageis 12v and 1 amp, data format is UART with 9600 baud rate. The advantages of Wi-Fi aremore secured and can sendmessagesfrom anywhere.Electronic noticeboards are userfriendly and echo friendly, they are replacing present paper usage notice boards. We can useeitherLCD orLED boards.LEDboardsare moreattractive.

II.LITERATURE SURVEY

Yash Tekkamaki [1] described "Large Screen Wireless Notice Display System" with an aim to increase the usability of electronic notice board, deals with wireless reception and display of message using Raspberry Pi. High resolution is supported. This paper presents a way to incorporate messages from [illegible] others

Wutan Huatan Jisuan Jishu

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Identification of structure activity relation of a synthetic drug 2,6-pyridine dicarbonitrile using experimental and theoretical investigation

G.Golding Sheeba[1,2], D.Usha[2] M.Amalanathan[3*], M.Sony Michael Mary[4]

[1]*Research Scholar, Reg.No. 17223282132004, Manonmaniam Sundaranar University, Abishekapatti,Tirunelveli-627 012*

[2]*Department of Physics & Research Centre, Women's Christian College, Nagercoil-629001,*

[3]*Department of Physics & Research Centre, Nanjil Catholic College of Arts and Science, Kaliyakkavilai-629153*

[4]*Department of Physics, Nesamony Memorial Christian College , Marthandam- 629165.*

Abstract

Pyridine and its derivatives have wide applications because of their activity such as it exhibit biologically active antibacterial, antiviral, antifungal and antitumor properties. In the present investigation, 2,6-pyridine dicarbonitrile was investigated in terms of structural, vibrational spectroscopic and theoretical analysis. All the theoretical calculations were done in B3LYP/6-311++G(d,p) level . The NBO analysis has been carried out to understand the probable charge transfer interaction present in the molecule. Additionally, the HOMO and the LUMO energies are calculated using B3LYP/6-31G(d,p) to determine the intra molecular charge transfers (ICT) within the molecule and the kinetic stabilities for each phase. The molecular electrostatic potential surface (MESP) has been plotted and estimate the reactive sites of electrophilic and nucleophilic attacks of the molecule. The potential energy distribution (PED) has been calculated using VEDA4 program and vibrational assignments of the experimental spectra (IR & Raman) have been elucidated using the calculated vibrational spectra.

Keywords: Molecular structure, FT-IR; FT-Raman; HOMO-LUMO, DFT; MESP

1 Introduction:

Pyridine is a basic heterocyclic organic compound with the chemical formula C5H5N. It is structurally related to benzene, with one methine group (=CH−) replaced by a nitrogen atom. Most of the Pyridine derivatives are biologically and pharmacologically and important molecules. So the Pyridine derivatives are y are widely used in the synthesis of various biologically and pharmacologically active molecules. These are not only become the become the subject of great interest due to their diverse biological and medical activities but also its other activities. Nowadays, pyridine derivatives have found various areas of applications for various reasons. Some of the pyridine derivatives represent an important group of organic compounds that are used as reagents in the analytical chemistry [2]. The others, some of pyridine derivatives view anesthetic properties and are used as medicine for some brain diseases. Additionally, they are known to exhibit biologically active antibacterial [3], antiviral [4], antifungal [5] and antitumor [6-8] properties. These are widely used as agricultural chemical agents such as herbicides, insecticides and fungicides. Pyridine and its derivatives are important chemical compounds with numerous applications in the various medicinal and biological fields. They are widely used in various biologically and pharmacologically active molecules. Nowadays, pyridine derivatives have found various areas of application for various reasons. The pyridine derivatives represent an

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Design and Fabrication of Hybrid Power Generator

Sunil J[1], Prabhu J[2], Glaxton Shamuvel G[3], Aravinth Raj A[3], Kings K[3], Abinash Antony[3]
[1]Associate Professor, Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Azhagappapuram, Kanyakumari, Tamil Nadu, India
[2]Assistant Professor, Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Azhagappapuram, Kanyakumari, Tamil Nadu, India
[3]UG Students, Assistant Professor, Department of Mechanical Engineering, Annai Vailankanni College of Engineering, Azhagappapuram, Kanyakumari, Tamil Nadu, India

ABSTRACT

Nowadays, mostly electricity generation is based on Thermal Power Stations. Thermal Power Stations are consuming more fuel and their availability is decreasing drastically. Due to combustion of fuel, the Exhaust gases from the Thermal Power Plant causes the Ozone as well as pollutes the environment. To overcome the insufficiency of fuel and environmental pollution due to the exhaust emission it is necessary for us to the use the Renewable Energy Sources for a better future. Generally the constructing the Solar or Wind Power Plants requires huge area. This necessitates us to build a Hybrid System using Wind and Solar Energy. We are depending on power from Renewable and Non- Renewable energy sources but mostly on non renewable energy sources. But as far as there is a steep increase in population and leak in availability of fuel it is not safe to depend on Non-Renewable energy resources. Hence, our Hybrid Power Generation System will be one of the solutions for this worldwide energy resource crisis.

Keywords: Thermal Power Stations; Environmental pollution, Solar Energy; Hybrid Power Generation

I. INTRODUCTION

Wind energy is one of the most cleanly and reliable source of renewable energy. Bladeless Wind Turbine uses a radically new approach to capturing wind energy. Our device captures the energy of Vorticity, an aerodynamic effect that hasplagued structural engineers and architects for ages (vortex shedding effect). As the wind bypasses a fixed structure, its flow changes and generates a cyclical pattern of vortices. Once these forces are strong enough, the fixed structure starts oscillating, may enter into resonance with the lateral forces of the wind, and even collapse. There is a classic academic example of the Tacoma Narrows Bridge, which collapsed three months after its inauguration because of the Vortex shedding effect as well as effects of flattering and galloping. Instead of avoiding these aerodynamic instabilities our technology maximizes the resulting oscillation and captures that energy. Naturally, the design of such device is completely different from a

Low Velocity Impact, Fatigue and Visco-elastic Behaviour of Carbon/E-glass Intra-ply fibre-Reinforced Nano-silica Toughened Epoxy Composite

A. Johnny Varghese & B. Anand Ronald

Silicon

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Design and Implementation of Autonomous Car using Raspberry Pi

Alsia Judit S[1], Varsha S. P[1], Supriya S[1]
[1]Department of Artificial Intelligence and Data Science, Annai Vailankanni College of Engineering, Kanyakumari, Tamil Nadu, India

ABSTRACT

The project aims to build a monocular vision autonomous car prototype using Raspberry Pi as a processing chip. An HD camera along with an ultrasonic sensor is used to provide necessary data from the real world to the car. The car is capable of reaching the given destination safely and intelligently thus avoiding the risk of human errors. Many existing algorithms like lane detection, obstacle detection are combined together to provide the necessary control to the car.

Keywords: Raspberry Pi, Sensor, Lane Detection

I. INTRODUCTION

Rushing around, trying to get errands done, thinking about the things to be bought from the nearest grocery store has become a part of our daily schedule. Driver error is one of the most common cause of traffic accidents, and with cell phones, incar entertainment systems, more traffic and more complicated road systems, it isn't likely to go away.

With the number of accidents increasing day by day, it has become important to take over the human errors and help the mankind. All of this could come to an end with self-driving cars which just need to know the destination and then let the passengers continue with their work. This will avoid not only accidents but also bring a self-relief for minor day to day driving activities for small items.

II. HARDWARE DESIGN

List of Hardware

A pre-built four wheel drive (4WD) chassis is used as a base on which following hardware components are fit [9]:

- Raspberry Pi (rev B) for GPU and CPU computations
- Wi-Fi 802.11n dongle to connect to it remotely
- Motor driver IC L293D which can control two motors
- 8 AAA batteries to provide power
- Jumper wires to connect individual components

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Identification and Analysis of Anticancer and Antimicrobial Activity of 1-(p-toluenesulfonyl)imidazole by Theoretical and Experimental Analyses

G. Golding Sheeba[1*], D. Usha[1], M. Amalanathan[2*], and M. Sony Michael Mary[3]

[1]*Department of Physics and Research Centre, Women's Christian College, Nagercoil-629001, Tamil Nadu, India.*

[2]*Department of Physics and Research Centre, Nanjil Catholic College of Arts and Science, Kaliyakkavilai-629153, Tamil Nadu, India.*

[3]*Department of Physics, Nesamony Memorial Christian College, Marthandam- 629165, Tamil Nadu, India.*

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Abstract

Anti-Cancer Agents in Medicinal Chemistry refer to chemotherapeutic agents in cancer. Effective docking of the drug molecule with different proteins also enhances its bioactive nature. These agents also have antibacterial and antifungal activities. In the present work the complete molecular structural analysis and vibrational wave numbers of the fundamental modes of the optimized geometry has been determined using DFT calculations. The Molecular docking analysis shows that the selected ligand 1-(p-toluenesulfonyl) imidazole is dock with cancer protein with small bond distant and it can be a better entrant for anticancer drug. The protein 2BZS has a binding energy of -5.8 Kcal/mol. The compound exhibited similar binding affinity with the protein 3D8W with a binding energy of -5.85 Kcal/mol. The protein 4K23 exhibited a binding affinity of -5.18 Kcal/ mol. The ligands make an interaction with the 2BZS protein at a position HIS11, ASN18 and PHE17 with a bond distance 1.88, 2.09 and 3.09Å respectively. The activity of 1-(p-toluenesulfonyl)imidazole against the selected PDB are significant with a binding energy which indicates that 1-(p-toluenesulfonyl)imidazole may exhibit significant anti-cancer activity against the variety tubercular breed by targeting the PDB (4GSR). *In vitro* anti-bacterial studies suggest that the title compound is less anti-bacterial against *E.coli* and has significant anti-mycobacterial activity against *Mycobacterium smegmatis*. It can therefore be concluded from the present study that 1-(p-toluenesulfonyl)imidazole is a good anti-bacterial and anti-mycobacterial agent.

Keywords: 1-(p-toluenesulfonyl)imidazole, molecular docking, anti-cancer drugs, antibacaterial.

Introduction

Imidazole derivative is an aromatic heterocyclic compound and is used for many applications in the biological and medical fields (Ding, 2005). The imidazole is an important synthetic

[1]Research Scholar, Reg. No. 17223282132004, Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India.
*Corresponding author; Email address: nathan.amalphysics@gmail.com

EFFICIENT COMMUNICATION IN UNDERWATER ACOUSTIC SENSOR NETWORKS USING RELAY NODES

Anon.k.Jenifer.
Assistant Professor in Computer Science and Engineering
Rajas international institute of technology for women, nagercoil, tamilnadu

J.JancJenolin
PG Student in Computer Science and Engineering
Rajas international institute of technology for women, nagercoil, tamilnadu

Abstract- An underwater acoustic sensor network with one mobile surface node to collect data from multiple underwater nodes. the issues of relay node placement and the flow allocation (RNP-FA) have been considered as a joint problem and is formulated into an integer nonlinear programming problem which is NP-hard in general. To solve the problem efficiently, this paper proposes a novel heuristic scheme for UASNs which works based on a 3 dimensional (3D) architecture. The proposed scheme consists of three algorithms, named as Alternative Flow and Relay-node Adjustment (AFRA) as a whole. Extensive simulation experiments demonstrate that the proposed scheme offers a simple yet attractive solution to the problem.

Keywords *wireless sensor networks, Underwater Sensor Networks, TCP&HTTP, IP&FTP*

I.INTRODUCTION:

As an extension of wireless sensor networks WSNs in underwater environment. In underwater acoustic sensor networks UASNs have been developed for many potential applications, including offshore resource exploration, environmental monitoring and disaster prevention, etc. Prolonging the network lifetime is a crucial issue for the UASNs to deliver their full potential and to enable various fundamental applications. The objective of this work is to jointly determine the RNs placements and the flow allocation in multiple routes in order to improve network performance in terms of the lifetime of the entire network. In WSNs many researchers have proposed to deploy RNs with the function to forward sensor data toward the BS over multiple hops.

The network lifetime is directly determined by the battery supply and the power consumption of the underwater sensor nodes. However, since it is more difficult to replace the battery or to recharge the sensor nodes in underwater scenarios than its terrestrial counterpart reducing the energy consumption has become the major way to improve the network lifetime. The receiving power consumption of a node is mainly correlated with the number of data bits it receives. As a result, if the power consumption can be reduced the lifetime of the network can be prolonged. In order to achieve it, the way is to shorten the distance between nodes and reduce the information transmitted between them.