6.1.2 The effective leadership is reflected in various institutional practices such as decentralization and participative management.

Supporting document for a Case Study showing of practicing decentralization and participative management in the institution to organize institutional level event "Annual Techno Fest".

CHAITANYA BHARATHI
INSTITUTE OF TECHNOLOGY (A)

Dt.11.06.2022

ACADEMIC COUNCIL MEMBERS

I. Composition :

i.	The Principal (Chairman)	**Prof. P. Ravinder Reddy**
ii.	All the Heads of Department in the college.	**Head, Department :** Biotechnology **Head, Department :** Chemical Engg. **Head, Department :** Civil Engg. **Head, Department :** Computer Science & Engg. (CSE) **Head, Department :** Electrical & Electronics Engg. (EEE) **Head, Department :** Electronics & Comm. Engg. (ECE) **Head, Department :** Information Technology (IT) **Head, Department :** Mechanical Engg. **Head, Department :** MCA **Head, Department :** MBA **Head, Department :** Mathematics **Head, Department :** Physics **Head, Department :** Chemistry **Head, Department :** English
iii.	Four Teachers of the College representing different categories of teaching staff by rotation on the basis of seniority of service in the college.	1. Prof. G. Chandra Mohan Reddy, Professor, Mech. Engg. 2. Prof. M. Swamy Das, Jt. Director-Academics (Informatics) 3. Dr. A. Supraja Reddy, Assoc. Professor, ECE 4. Dr. N. Vasantha Gowri, Asst. Prof., EEE
iv.	Not less than four experts from outside the college representing such areas as Industry, Commerce, Law, Education, Medicine, Engineering etc., to be nominated by the **Governing Body**.	1. Dr Y. Sreenivasa Rao, Out Standing Scientist Director - Naval Science & Technological Laboratory, Vizag. 2. Prof N. Venkata Reddy, Dept. of Mechanical Engg. IIT, Hyderabad. 3. Sri Kuncham Jagadeesh, Vice-President, Capgemeni, Hyderabad. 4. Sri B. Jaipal Reddy, MD, Apollo Computing Laboratories(P) Ltd., Hyd.
v.	Three nominees of the **University**.	1. Prof. N. Suresh Kumar, Dean, Faculty of Engineering, OU 2. Prof. P.V. Sudha, Dean, Faculty of Informatics, OU 3. Prof. Kavitha Waghray, Dean, Faculty of Technology, OU
vi.	**Member from CII** (Ref: AICTE letter dated 04/10/2018)	Mr. Vagish Dixit, Convenor, Education & Skills Panel, CII Telangana CEO, ALPLA
vii.	Faculty Member nominated by the **Principal** (Member Secretary)	Prof. K. Krishnaveni, Director-Academics

Chaitanya Bharathi Institute of Technology (A)
Chaitanya Bharathi (PO), Kokapet (V), Gandipet (M),
Ranga Reddy District, Hyderabad - 500 075, Telangana, India
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principal@cbit.ac.in www.cbit.ac.in

II. Term :

The term of the nominated Members shall be **three** years.

III. Meetings :

The Academic Council shall meet **at least twice a Year**

IV. Functions of the Academic Council :

Without prejudice to the generality of the functions mentioned, the Academic Council shall have powers to :

a) Scrutinize and approve the proposals with or without modifications of the Board of Studies with regard to the Courses of study, Academic Regulations, Curricula, Syllabi and Modifications thereof, instructional and evaluation arrangements, Methods, Procedures, relevant thereto etc., provided that where the Academic Council differs on any proposal, it will have the right to return the matter for reconsideration to the Board of Studies concerned or reject it, after giving reasons to do so.

b) Make Regulations regarding the admission of Students to different Programs of Study in the College.

c) Make Regulations for Sports, Extra-Curricular activities and proper maintenance and functioning of the play grounds and Hostels.

d) Recommend to the Governing Body proposals for Institution of new Programs of Study.

e) Recommend to the Governing Body, Institution of Scholarships, Studentships, Fellowships, Prizes and Medals, and to frame Regulations for the award of the same.

f) Advise the Governing Body on suggestions pertaining to Academic affairs made by it.

g) Perform such other functions as may be assigned by the Governing Body.

CHAITANYA BHARATHI CBIT HYDERABAD INSTITUTE OF TECHNOLOGY (A)

PRINCIPAL

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Kokapet (Village), Gandipet, Hyderabad, Telangana-500075. www.cbit.ac.in

COMMITTED TO RESEARCH, INNOVATION AND EDUCATION 43 years

No.CBIT/152/Admn./2022 Dt.20-06-2022

Dear esteemed member of the Academic Council,

Sub:- CBIT- Academic Council Meeting - Agenda - Reg.

This is to inform you that the 11th meeting (hybrid mode) of the Academic Council is planned to conduct on 25th June, 2022 from 10:30 AM onwards, to discuss the following Agenda.

1. To confirm the minutes of tenth(10th) Academic Council meeting held on 03-06-2021
2. To approve the minutes of Common BoS meeting held on 21-05-2022, for 'item no : 1.
3. To approve the minutes of common of BoS meeting held on 08-06-2022, for 'item nos.1,2,4,5 and 6 of the respective meeting.
4. To approve respective department " BoS meeting minutes " for :
   (i) Modifications in the Scheme of I and II Semesters of all B.E / B.Tech Programs
   (ii) Syllabus for V to VIII Semesters of all the B.E/B.Tech Programs
5. To approve Almanac for
   (i) VII to VIII semesters of B.E/B.Tech Programs for the Academic year 2022-23
   (ii) V and VI semesters of B.E/B.Tech Programs for the Academic year 2022-23
   (iii) III and IV semesters of B.E/B.Tech Programs for the Academic year 2022-23
   (iv) III and IV semesters of MCA Program for the Academic year 2022-23
   (v) III and IV semesters of MBA Program for the Academic year 2022-23
   (vi) III and IV semesters of M.E/M.Tech Programs for the Academic year 2022-23
   (vii) I and II Semesters of all B.E/B.Tech, M.E/M.Tech, MCA and MBA based on the guidelines of UGC, AICTE (delay in admissions due to COVID-19 Pandemic)
6. Any other item with the permission of the Chair

PRINCIPAL &
Chairman-Academic Council

No. 403 /CBIT-AEC/2022

Date: 14-10-2022

ALMANAC 2022-23

B.E/ B.TECH III & IV SEMESTERS

III SEMESTER		
1	Commencement of class work	26.10.2022
2	Class Test - I	19.12.2022 to 21.12.2022
3	Sudhee & Shruthi- 2023(Techno Sports and Cultural Fest)	01-02-2023 to 04-02-2023
4	Last Date of Instruction	11.02.02023
5	Class Test – II	13.02.2023 to 15.02.2023
6	Preparation and practical Examinations	16.02.2023 to 01.03.2023
7	Commencement of Semester End Examinations	02.03.2023

IV SEMESTER		
1	Commencement of class work	27.03.2023
2	Class Test - I	15.05.2023 to 17.05.2023
3	Last Date of Instruction	08.07.2023
4	Class Test – II	10.07.2023 to 12.07.2023
5	Preparation and practical Examinations	13.07.2023 to 26.07.2023
6	Commencement of Semester End Examinations	27.07.2023
7	Commencement of V Semester for the Academic Year 2023-2024 (tentative)	04.09.2023

PRINCIPAL

CC:

All Directors, Jt. Directors, HoDs, CoE, Librarian, Physical Director

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Kokapet(Village), Gandipet, Hyderabad, Telangana-500075. www.cbit.ac.in

COMMITTED TO RESEARCH, INNOVATION AND EDUCATION 44 years

No. CBIT/001/Admn./2023

Dt. 02.01.2023

CIRCULAR

This is to inform all the Staff and Students that the annual Technical Fest - SUDHEE will be conducted on 31st January & 1st February, 2023 and the annual Sports and Cultural Day - Shruthi, 2023 will be held from 2nd to 4th February, 2023 respectively. The below mentioned are the Core Committees for organising the Annual Techno, Sports & Cultural Fest-2023 (SUDHEE & SHRUTHI).

SUDHEE-2023 :

Chief Advisor	:	**Prof. P. Ravinder Reddy, Principal, CBIT**
Chairperson	:	**Prof. K. Radhika, Head, Dept. of IT**
Co-Chairperson	:	**Prof. P. Prabhakar Reddy, Dept. of Mech. Engg.**
Convener	:	**Dr. T. Sridevi, Assoc. Prof., Dept. of CSE**
Co-Convener	:	**Dr. P. Madhuri, Asst. Prof., Dept. of Chem. Engg.**

SHRUTHI-2023 :

Chief Advisor	:	**Prof. P. Ravinder Reddy, Principal, CBIT**
Chairperson	:	**Prof. P.V.R. Ravindra Reddy, Head, Dept. of Mech. Engg.**
Co-Chairperson	:	**Prof. D. Krishna Reddy, Head, Dept. of ECE**
Convener	:	**Prof. B. Sreenivasa Reddy, Head, Dept. of Physics**
Co-Convener	:	**Dr. M. Trupthi, Asst. Prof., Dept. of IT**

All the Advisors, Directors, Joint Directors, Heads of the Departments, In-charges of Sections, Librarian, Asst. PD are advised to keep ready the soft copies of achievements of both Staff & Students and all the events conducted from Shruthi, 2022 till date for the Academic Year 2022-23 so as to submit the same to the undersigned **on or before 20.01.2023**.

PRINCIPAL

To
All the Advisors, Directors, Joint Directors, Heads of the Departments, In-charges of Sections, Librarian, CoE, Asst. PD, Head-HR, PRO for information and with an advice to arrange for circulation among the Staff and Students under their control.

C.C. to the Chairmen, Co-Chairmen & Conveners & Co-conveners of Core Committees of Sudhee & Shruthi – 2023, for information.

No.CBIT/009/MoM/2022 Dt.23.02.2022

Minutes of the Meeting with the Directors, Joint Directors, Heads of the Departments / In-charges of Sections held on 23rd February, 2022 at 12:30 PM in the Conference Hall.

==========

Members Present :

1. Prof. P. Ravinder Reddy, Principal
2. Prof. N. V. Koteswara Rao, Director-IQAC
3. Prof. Suresh Pabboju, Director-AEC & CoE
4. Prof. K. Krishnaveni, Director-Academics
5. Prof. P. Sreenivas Sarma, Director-Student Affairs& Progression
6. Dr. N. L. N. Reddy, Director-CDC
7. Prof. M. Swamy Das, Joint Director-Academics (Informatics)
8. Prof. D. Krishna Reddy, Head, Dept. of ECE
9. Prof. K. Jagannadha Rao, Head, Dept. of Civil Engg.
10. Prof. G. Suresh Babu, Head, Dept. of EEE
11. Prof. K. Radhika, Head, Dept. of IT
12. Prof. P. V. R. Ravindra Reddy, Head, Dept. of Mech. Engg.
13. Dr. Y. Rajasri, I/c-Head, Biotechnology
14. Dr. P.V. Naga Prapurna, I/c-Head, Chemical Engg.
15. Prof. K. Laxmi, Head, Dept. of Chemistry
16. Prof. B. Sreenivas Reddy, Head, Dept. of Physics
17. Prof. M. Ganeshwar Rao, Dept. of Mathematics
18. Dr. B. Indira, Head, Dept. of MCA
19. Dr. E. Jalaja, I/c-Head, SMS
20. Prof. P. Venkata Prasad, Controller of Examinations
21. Dr. C.Srikanth Reddy, Librarian
22. Dr. R. Rajeswari, Asst. PD
23. Sri V.Balaji Kesava Rao, I/c-Staff Transport
24. Mr. Pandurangam, Purchase Section
25. Mrs. Vani, Maintenance Section

Prof. P. Ravinder Reddy, Principal chaired the Session and conducted the Proceedings.

Item No. 1	:	**Conduct of Sudhee & Shruthi-2022**
Minutes	:	Principal informed all Directors, Joint Directors, Heads of the Departments, In-charges of Sections that the Annual Techno, Sports & Cultural Fest - Sudhee & Shruthi-2022 will be conducted through offline mode on 23rd & 24th and 25th & 26th of March, 2022, respectively. In this connection, the following members were nominated as Chairmen and Co-Chairmen for both the events. 1. Prof. D. Krishna Reddy, Head, ECE - Chairman for Sudhee-2022 2. Prof. K. Radhika, Head, IT - Co-Chairperson for Sudhee-2022

		1. Prof. K. Jagannadha Rao, Head, CED - Chairman for Shruthi-2022 2. Prof. P.V.R. Ravindra Reddy, Head, Mech. Engg. - Co-Chairman for Shruthi-2022. Principal advised the Chairmen and Co-Chairmen Sudhee & Shruthi - 2022 to co-opt members for the positions of Convenor, Co-Convenor and formulate various Committees for both Sudhee & Shruthi-2022 on the way that there will be no overlapping of members, except for some common committees. Principal advised the Chairmen and Co-Chairmen of Sudhee & Shruthi - 2022 to immediately convene meetings with the Core Committee members to discuss the budget for the events. A separate meeting will be conducted on 25.02.2022 to discuss and finalise the budget with the Chairmen, Co-Chairmen, Convenors and Co-Convenors of various Committees of Sudhee & Shruthi-2022, so that the proposed budget will be put before the Students Activities Advisory Committee for approval. e-Publicity of the events shall only be permitted and not to go outside colleges for publicity which is to be strictly avoided. Principal advised all to identify the Chief Guests, Guests of Honor for both the events. Principal advised Director-Student Affairs & Progression that all the practice sessions should be held in M-Block Seminar Halls. No student member will be entertained to meet the undersigned with regard to any requests for Sudhee / Shruthi events. Only faculty co-ordinators / representatives should represent those requests of various Clubs and Committees.
Item No. 2	:	**Any other item with the permission of the Chair**
Minutes	:	1. Principal advised all Heads of the Departments that a procedure for issue of Letter of Recommendations should be followed by the student. If any student requests for LoR, he has to meet the concerned Head of the Department and then the Placement Office. The information shall be recorded at the Placement office as well as in the Department, so that the data for Higher Studies shall be maintained properly. 2. Principal suggested Heads of the Departments to identify the unplaced students of present batch and previous batches also to facilitate them with proper training for getting placements. The unplaced students data should be submitted to the Director-CDC, for necessary action. 3. The Director-AEC&COE requested all Heads of the Departments to submit the attendance of UG & PG students by this evening so as to finalise the detention list in the meeting scheduled on 24.02.2022.

4. The Director-AEC&COE requested all Heads of the Departments to submit the data related to the students who have not attended for the II Mid examinations due to Covid, so as to enable him to conduct the same.

5. The Director-AEC&COE informed that the Class Test -I for the ME / M. Tech. will be conducted on 2nd, 3rd and 4th March instead of 28th February, 2nd and 3rd March, as notified earlier.

6. The Director-Academics requested Principal to suggest on the extension of MATLAB training facility to the Research Scholars (Ph.D students) and informed that the MATLAB training shall be provided to the staff / students who possess e-mail id of cbit.ac.in or cbit.org.in only. Principal advised that the training facility shall be extended by the concerned Faculty Guide to their research scholars.

7. Principal further directed all Heads of the Departments to take steps to clear the fee dues by concerned students. He further informed that the hall tickets will not be issued to those students who didn't clear their fee dues. He further exclaimed on how those students who did not pay the fee are being permitted by the concerned Head of the Department, to attend the classes and added that such cases shall be thoroughly checked and brought to his notice.

8. Principal informed that the Probation Policy was finalised and will be circulated to all. Principal advised all Directors, Joint Directors, Heads of the Departments, In-charges of Sections to work towards improving performance on Teaching-Learning, Research publications, Publication of Patents and Consultancy activities.

9. Director-CDC requested all Heads of the Departments to update off campus placements data immediately for NIRF purpose in the google form, which has already been shared.

10. The Director-IQAC requested all Heads of the Departments to see that the digital Course material should be uploaded on the cloud without fail.

11. The Director-IQAC informed that the Photography Club members shall visit all Departments to take geotagged photographs as required by the NAAC.

That there being no other item, the meeting was concluded with thanks to the Chair.

Prof. P. Ravinder Reddy
PRINCIPAL

Chaitanya Bharathi Institute of Technology Society

Date: 12-03-2022

Note Submitted to the President:

The Institute is hosting Sudhee (Technical Fest) & Shruthi (Annual Day) on 23-03-2022 to 26-03-2022. A meeting was held with respect to finalization of budget proposals & Themes of Sudhee & Shruthi -2022 was held by the Student Activities Advisory Committee & chairman & Co- Chairman Sudhee & Shruthi-2022 on 03-03-2022. The Proposed budget of Rs.23,82,000/- for Sudhee & Rs.50,00,000/- for Shruthi -2022 was agreed by the members of Student Activities Advisory Committee.

Approval may be accorded for a Budget of Rs.23,82,000/- for Sudhee & Rs.50,00,000/- for Shruthi -2022.

Submitted for approval.

Supdt. Principal Member-CBIT Authorized Signatory President

VIRUPAKSHA
Organics Limited

Proceedings of
SUDHEE-2022
(Innate Ignite Innovation)
23 -24th March , 2022

Editors

Dr. T. Sridevi
Dr. T. Murali Krishna
Dr. A. Supraja Reddy
Dr. T. Sudhakar Babu

Chaitanya Bharathi Institute of Technology (A)
Gandipet, Hyderabad-500075, Telangana State.

PROCEEDINGS OF SUDHEE-2022

(INNATE IGNITE INNOVATION)

23rd - 24th March, 2022

Editors

Dr.T.Sridevi Associate Professor Department of CSE

Dr.T.Murali Krishna Associate Professor Department of EEE

Dr.A.Supraja Reddy Associate Professor Department of ECE

Dr.T.Sudhakar Babu Associate Professor Department of EEE

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Telangana State.

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MESSAGES

MESSAGE BY THE HONORABLE PRESIDENT

I am delighted to note that CBIT is celebrating its Annual National Technical Fest SUDHEE-2022 during 23-24 March, 2022 in an offline mode in the campus.

The theme of SUDHEE-2022, "Ignite Innate Innovations" is apt and need of the hour enabling young, energetic & enthusiastic minds to ponder and propitiate the lexicon of technological subtle insights and emerge with innovative solutions for numerous problems and challenges faced by the society today.

As part of these grand celebrations, all the departments of the Institute will be hosting wide variety technical events like key note speaker sessions in the core engineering domain, technical paper presentations, poster presentations, technical quizzes and other relevant competitions. All these events enable and guides the young minds and future Nation builders with nurturing and striving for the innovative solution sand orienting insightful views, thoughts and deeds leading to enthusiastic participation in all the events of this technical fest including Hackathons, Robovanza, startups etc., culminating in successful contributions by trained young and budding professionals and entrepreneurial mind sets with unending zeal and innovative endeavors in tune with "Swayam Tejaswin Bhava" the motto of our Institution.

I wish and congratulate the Principal, Staff, Students and all stake holders of the Institute all the very best and for the grand success of SUDHEE-2022.

PRESIDENT

MESSAGE BY PRINCIPAL

I am happy to note that Chaitanya Bharathi Institute of Technology is organizing SUDHEE-2022 with the spirit of zeal, zest and gusto on 23rd - 24th March, 2022.

In this context, it is organizing an event with a theme of innate ignite innovation, which symbolically represent natural or in born or natural philosophy (innate) that student should have in order to excel his/her knowledge in the domain of their field. The term ignite is to catch fire or cause to catch fire, which, ignite new in them. Innovation in critical to the continuing success of any organization. It is a new method, idea or product, while technology innovations designs to save energy.

I appeal the students of CBIT to inculcate the qualities of innate, ignite innovation so as to become true engineer and work for society.

I wish the organization of SUDHEE-2022 go be grand success of the event.

Prof. P. Ravinder Reddy
PRINCIPAL

MESSAGE FROM DIRECTOR IQAC

It gives me a great pleasure to be a part of SUDHEE (annual Technical Fest)held during 23 and 24 March 2022.SUDHEE provides a platform for students of our institute and other institutions to discuss on latest trends and innovations in Engineering and Technology and present their work/projects/research findings. The SUDHEE Organizing committees rigorously publicized the event and invited research papers from the academic institutions all over the nation. Therehave been significantcontributions from a good number of UG and PG students in all disciplines.All the accepted and presented papers will be published in the proceedings of SUDHEE 2022. All these efforts undertaken by the Organizing and Technical Committee of SUDHEE has led to an excellent proceedingsfor the participants to appreciate and expand their knowledge. Several keynote addresses and invited talks organized during SUDHEEhelps the students to connect the links between academic research and the industry needs. I wish the event a grand success with all the contributions from the participants and efforts by the SUDHEE committees. I Congratulate the Chairman, Conveners, Heads of the Departments, Faculty, Staff and Students of CBIT on the occasion of SUDHEE 2022.

Prof. N.V. Koteswara Rao
DIRECTOR IQAC

MESSAGE BY DIRECTOR, R&D

It gives me immense pleasure to partake in the annual Technical Fest SUDHEE Celebrations on 23 and 24 March 2022. Over the last 43 years, the Institute has become an excellent education institute. Now the institutes developing research ecosystem by organizing research events like Research Day, International Conferences and technical events like SUDHEE exclusively for students. The New educations policy and the regulatorybodies such as AICTE are encouraging organizing this type of technical fests to motivate the students to be innovative in research and product development. We need to accelerate the innovative research in order to keep pace with the dynamism of to-day's fierce global competition. We must effectively connect the links between academic research outcome and the industry to be more productive and help societal needs. I wish the event will give an opportunity for the participants to share their ideas but also exposed to the latest developments in various fields by renowned invited speakers from both academics and industry. I am sure in the near future, with all of our contributions towards publications, Patents, Products, Processes, and Systems CBIT will make a mark, in the 'Make in India' Program actively and aggressively promoted by the Government of India. I Congratulate Chairman of SUDHEE technical fest, Conveners, Heads of the Departments, Faculty, Staff and Students of CBIT for their sincere commitment in upholding the banner of the Institute in such high esteem. I send my greetings to the organizing committees of this technical fest as well as to the participants and wish the event a grand success.

Prof.A.D.Sarma
DIRECTOR, R & D

MESSAGE BY DIRECTOR, I&I

Innovation and Incubation Ecosystem has proven to be an excellent instrument for promoting knowledge-based, technology-driven businesses. Higher educational Institution are best suited for both an 'engine' for innovation and a 'catalyst' for sustainability development, the integration of both the 'innovation engine' and 'sustainability catalyst' roles is best reflected in higher education's engagement in innovation ecosystems-. The HEI's or the Universities are not merely an Entrepreneurial Institution but are also Institutional Entrepreneur in the innovation ecosystem. India has been ranked 46th by the World Intellectual Property Organization in the Global Innovation Index 2021 rankings and India has been on a rising trajectory. Innovation has been at the forefront of our battle against the unprecedented crisis created by the pandemic, and will be pivotal in driving the country's resilience and self-reliance, as enshrined in our Honourable Prime Ministers' clarion call on *AtmaNirbhar Bharat.*

CBIT has established the Atal Community Innovation Centre (ACIC) at our Campus. The ACIC will provide requisite infrastructure for innovation in the un-served / underserved regions or having potential to build innovation ecosystems in various parts of the state, thus, nurturing entrepreneurs from the community to help them address various societal challenges. The objective of the ACIC program is to offer unique and incentivized solutions, which will encourage students, researchers or any individual/group of individuals to ideate and design novel innovative solutions for the communities in and around the ACIC.

CBIT has also established the MSME Incubation center. The main aim of the incubation centre goes hand in hand with MSME and ACIC objectives. The main goal is to nurture ideas from professionals / students/ local community and foster such entrepreneurial ideas in a supportive environment before they become attractive for venture capital. The Incubation center aims to promote and support untapped creativity of individual innovators and to assist them to become technology based entrepreneurs. Incubation Centre, CBIT will provide necessary infrastructure for prototype development, further IPR filing and Commercialisation. Some of the important areas for CBIT's Incubation Centre will be Agritech and Food Technology, Health Tech products, Life sciences and Well Being products and services, Water, Sanitation & Solid waste management, Environment and pollution control technology, Artificial Intelligence, Robotics and Automation, Application of Drone Technology, Electric Mobility, and many more areas. The Innovation Ecosystem at CBIT is going to encourage the innovative workforce of innovation to ignite the ability to conceive, to create, to innovate, and implement solutions to benefit the society.

I want to take this opportunity to extend my best wishes to the CBIT's Team for hosting SUDHEE during 23-24th March, 22 with the theme as Ignite, Innate and Innovation which is will be well addressed by the CBIT's Innovation Ecosystem.

Prof. U.K. Choudhury
DIRECTOR, I & I

MESSAGE BY HOD, DEPARTMENT OF BIOTECHNOLOGY

With its vision to excel in education, research, and entrepreneurship in various fields of Biotechnology for contribution to the evolving needs of the society, department of Biotechnology is continuously striving to achieve these goals by providing an excellent educational experience to the undergraduate students of Biotechnology through quality teaching and advanced curriculum with roots into the fundamentals, that enables students to become leaders in their chosen field of Biotechnology. Also the faculties of the department are instilling the spirit of innovation and creativity in young minds through participation in International and National level conferences/hackathons combined with a deep awareness of ethical responsibilities to profession and society.The Department of Biotechnology has been continuously progressing since its inception in the year 2005. Department in fulfilling its vision of excelling in addressing the research needs of the society has been continuously engaged in conducting national and international conferences in frequent intervals to attract networking with other organizations. In this context, Department of Biotechnology has been organizing Neozion, a national level technical symposium which is being conducted as part of Sudhee as an annual event. This academic year 2022, the theme "Innate, Ignite Innovation" has been proposed to instill the creative thoughts which will ignite the innovation in young minds. Innovation has been emphasized by Indian government which will be one of the major factor to raise the India economy by 5 Trillion dollars in 2025. CBIT management has been putting continuous efforts in providing infrastructure facilities, IPR services, Mentoring facilities and Seed funding required for young minds to grow into successful startups with ACIC-CBIT with the support of AIM,NITI Aayog. The ideas shortlisted in this Neozion -2022 will be taken to ACIC-CBIT for further support in all kinds. I wish all the participants of the Sudhee -2022 a knowledgeable networking which will be a mutual benefit.

Dr. Rajasri Yadadalli
HOD, DEPARTMENT OF BIOTECHNOLOGY

MESSAGE BY HOD, CIVIL ENGINEERING DEPARTMENT

The Civil Engineering Department of CBIT has been serving the society, since its inception in 1979, through qualitative teaching-learning process, with the support of well qualified faculty, skilled technical staff and state-of-the-art infrastructure and laboratory facilities. Innovation plays an important role in engineering and it has the potential to add colossal value to practically everything and anything.

Civil engineers can work towards developing innovative green buildings employing innovative, sustainable, environmental-friendly, safe, and non-toxic materials and smart structural health monitor techniques. Civil engineers have to play a key role to meet the needs of society, through their innovations in materials, technologies and practices, without depleting natural resources and damaging the environment. Some potential areas of innovation include Green infrastructure, renewal energy, monitoring of infrastructure through digital monitoring technologies, and Green remediation.

Innovations in transport infrastructure in particularly the smart roads that use photosensitive paint for road markings, generating symbols on the road surface, and that allow energy to be generated through recharge batteries while driving a vehicle.

I am confident that the students of the department would contribute their might in displaying innovation and high level of professional competence in their respective domains to keep the flag of civil engineering department flying high.

I wish Sudhee-2022 a grand success.

Prof. K. Jagannadha Rao
HOD, CIVIL ENGINEEING DEPARTMENT

MESSAGE BY HOD, CHEMICAL ENGINEERING DEPARTMENT

I am extremely delighted that our Prestigious Institute CBIT has set the stage to host the Annual Students' Technical Symposium 'SUDHEE'during 23-24March 2022, to promote technical deliberations amongst students (representing academia and R & D) on several facets associated with "Innate Ignite Innovation" theme.Knowledge stems from extensive research undertaken by the multitude of experts in academia. It then becomes quintessential that research-based findings that contribute to extant knowledge must be shared. The Institute has set a benchmark in organizing this congregation of knowledge and presenting opportunities for ideas and skill sharing and in turn ignitethe possibilities of knowledge creation.

SUDHEE has been a successful platform to discuss the innovations and emerging trendsin the core and allied fields of engineering and also to enhance the knowledge of research developments among budding engineers.

The event, CHEMSPARK - 2K22 has a vision to motivate young engineers improve their scientific knowledge and themes for innovations and research options in the field and related disciplines. The technical symposium organizes oral and poster presentations, idea presentations, technical quiz and keynote speech on recent trends. It offers the participants all the required opportunities to share knowledge, experiences, exchange of ideas and also show case their work in front of eminent experts of their field.

I am confident that this fest will address and provide realistic solutions to variegated problems related to Society, Environment, Industry, Research and Innovation developments. Given the caliber of the participants and the values that are enshrined by the symposium, I am very assured that the two day event will be a resounding success and will draw appreciation and support from all associated with this noble endeavor.

Dr. P.V. Naga Prapurna
HOD, DEPARTMENT OF CHEMICAL ENGINEERING

MESSAGE BY HOD, COMPUTER SCIENCE & ENGINEERING

Sudhee'22 is national wide technical fest held in CBIT to enhance the skills and knowledge of students.The Department of Computer Science and Engineering proudly presents one of the most intriguing event Headstart'22 under Sudhee'22.Headstart is the hub of technological minds where different technical events such as Kodecrypt,Bugbeaters,Data Addicts and C Star will ignite the minds of the students.Headstartis a supersonic celebration of technology. Design Freaks,Tic Tech Toe,Fast and furious are some of the events which helps to explore the innate talentof the young minds.Technical paper presentation,poster presentation and project presentation are held to evaluate the innovative skills of the students.This evaluation will help students to achieve great heights in their career.We the department of Computer Science and Engineering aim to par excellence in different emerging technologies and illuminate the young minds.

On behalf of the department of Computer Science and Engineering,I extend my best wishes to the faculty and student coordinators,organizers and volunteers for the successful conduction of Headstart'22.Best ofLuck to all the participants.

Prof. Y. Ramadevi
HOD, COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

MESSAGE BY HOD, ELECTRONICS AND COMMUNICATION

The Department of Electronics and Communication Engineering was established in the year 1979 along with the inception of the institution. It offers an UG programme BE (ECE) and two PG programmes, One in ME (CE) and other in ME (ES&VLSID).All programs are accredited NBA. It has been continuously striving for excellence in engineering education and research, attracting meritorious students to seek admission. Department's Board of Studies has varied expertise to look after the academic activities. Courses are updated to keep pace with the current technological trends and advancements in existing and emerging technologies.The department has dedicated faculty (4Professors, 5 Associate Professors and 37Assistant Professors) 20 Faculty have Doctoral Degree. The faculty members are well experienced to guide the students to excel in today's competitive environment. 1JRF is working in sponsored research project from DST and 16 experienced and skilled non-teaching staff arewith the department. Faculty have more than 150 publications to their credit in last threeyears. The Department is recognised as "Research Centre" by Osmania University for pursuing doctoral studies. So far, 16 research scholars are awarded Ph.D and 44 research scholars are pursuing Ph.D under the supervision ofthefaculty. Many of our faculty members are resource persons for various courses organised in India and abroad, have received best paper awards at various international conferences and visited various abroad Universities.

The department has successfully executed 6 sponsored research projects to the tune of above 40 Lakhs from sponsoring agencies such as AICTE, DST etc. Also, 4 consultancy projects with total funding of 33 lakhs from RCI and GE are completed. Currently, three sponsored research projects are ongoing with total funding of nearly 70 Lakhs sponsored by DST and AICTE. Automatic Weather Station (AWS) is installed by National Atmospheric Research Laboratory (NARL), Department of Space (DoS), Gadanki, Tirupathi in our campus for monitoring the effect of urbanization on Hyderabad weather.The department has successfully organized above 40 technical events including workshops, Intensive courses, panel discussion, International Conference and National Conferences. Some of these are organized in collaboration with Osmania University and Jointly with Defense labs.

The Department has good infrastructural facilities, thirteen full-fledged academic laboratories. Inaddition, an exclusive Navigation and Communication Research Centre is established with the support of SAC, ISRO, Ahmedabad. The department provides access to high end softwares. Two (IRNSS-SPS-GPS and IRNSS-GPS-SBAS) receivers sponsored by SAC-ISRO under MoU are installed for field trials and data collection and three IRNSS-GPS-SBAS receivers sponsored by SAC-ISRO under NAVIC-GAGAN utilization program are also available along with RF Field Fox analyser to advanced conduct research. The department has 8 active MOU's with variousorganizations such as AMD,NIandJNTU K. Published a Indian Patent (201641000080 A, INDIA) entitled "System and Method for Palm Leaf Character Recognition Using 2D Haar Wavelet Transform and 3D Feature".

Students of the department are active members of IEEE, IETE, ISTE Student's chapters, Makers of India, Robotics Club, IIPC and EDC. These Chapters/Clubs/Cells are contributing towards professional activities for student holistic development.Some of our student projects have won certifications of appreciation/awards. All 85%UG students of this department secure campus placement and somepursue their higher studies in India/Abroad. Consistently securing good ranks/scores in various competitive examinations like GATE/GRE/CAT/ IELTS. 46 students got certified as "Amateur Station Operators" by Ministry of Communications, Govt. of India. An Alumni of 2019 batch Mr.Jeevan is appreciated by our Honorable Cheif Minister and IT Minister for his achievement as an Young Entrepreneur.

Prof. D.Krishna Reddy

HOD, ELECTRONICS AND COMMUNICATION ENGINEERING

MESSAGE BY HOD, MECHANICAL ENGINEERING DEPARTMENT

It is proud privilege to the Department of Mechanical Engineering, CBIT to organize a Two Day National student Convention Mechanica during 23-24 March 2022, under the banner of Sudhee-2022 with the theme 'Innate, Ignite and Innovation'. To realize 'Atmanirbhar Bharath' the dream of Govt. of India, to make ourselves self-reliant, a lot of technological innovations have to happen. It is possible only by innate ignition of ideas in the young brains which possibly turn into inventions. Celebrating technical fests of all the branches together at our college will reinforce the multi domain nature of current day technologies. We hope the paper presentations and several events planned to be conducted during these two days, will impart the insight into the recent technologies such as Digital Manufacturing, Nanotechnology, 4-D printing, Internet of Things, Renewable energy, Drone technology, Robotics etc.

Our department has a distinguished record in both teaching and research. Faculty members have excellent academic credentials and are highly regarded. The college has been unstoppable in its progress as it has been actively involved in various activities that have brought to light the hidden talents of the college students and staff.

A warm Greetings to all the participants from the Department of Mechanical Engineering, CBIT and we wish you a happy and knowledgeable stay in CBIT during these two eventful days.

Wishing you All the very Best!

Prof. P.V.R. Ravindra Reddy
HOD, MECHANICAL ENGINEERING DEPARTMENT

MESSAGE BY HOD, SCHOOL OF MANAGEMENT STUDIES

Since inception in 1996, the School of Management Studies has been imparting quality management education to students through experienced and expert faculty members. The school offers various specializations like Marketing; Finance; Human Resource Management; Business Analytics; Logistics and Supply chain Management.

YUKTHI, a part of SUDHEE 2022which is A National level Annual students' technical fest of Chaitanya Bharathi Institute of Technology (CBIT), isone of the most prestigious fests organized in CBIT-SMS.

The idea behind the theme is to unveil the innovative spirit by igniting the young minds.In an attempt to bring out the innate qualities of the potential leaders, this year's theme focuses on IGNITE INNATE INNOVATIONS.

The event provides a platform for students to showcase their unique talents essential in the holistic development of the students, providing a break from the academic routine. This year YUKTHI is being conducted on 23rd and 24th of March at CBIT School of Management Studies (SMS). Under YUKTHI-2022 various technical events are being organised. For YUKTHI 2022 events related to Business Analytics; Logistics and Supply chain Management are also added to the pre-existing HR; Marketing; Finance; Young Manager; Paper and Poster presentation; Business quiz events.

Dr. Jalaja Enamala
HOD, SCHOOL OF MANAGEMENT STUDIES

MESSAGE BY HOD, IINFORMATION TECHNOLOGY DEPARTMENT

In today's world, Technology has become a driving factor in all aspects of societal progress. Technological innovation has transformed the human societies.

The ability to innovate is one of the most important assets of an individual/organization wishing to remain relevant in the marketplace in the midst of the socioeconomic transformations that we have been experiencing in this century.

According to a report of McKinsey, 84% of professionals believe that the future success depends on constant innovation. In order to be competitive in the world, innovation is a must for economic growth and to solve critical problems we face every day, especially in the developing countries.

Prime Minister Shri Narendra Modi has stated that a self-reliant India would be absolutely essential in the Post-COVID 19.Undoubtedly, innovation, economic growth and social development are intertwined. The Indian startup and innovation landscape has over the past few years, seen young inventors blossom. Their keen observations combined with a deep sense of empathy and a flare for action has enabled them to make long strides towards creating an impact.

The Annual Technical Fest SUDHEE with the theme"Ignite Innate Innovations" fosters an enthusiasm in our young children towards innovative Ideas and to nurture their creativity through organizing and participating in a wide variety of technical events including paper presentations, Project Expo, coding and many more. CBIT-SIH is a new addition to the SUDHEE-2022 edition that enable students to work on hardware or software-related challenges and to build their learning, planning and networking abilities

Icongratulate and thank all the organizers, students,faculty, industry experts for their exemplary contribution andeffort in bringing out SUDHEE-2022.

Prof. K. Radhika
HEAD, INFORMATION TECHNOLOGY

MESSAGE BY HOD DEPT OF ELECTRICAL AND ELECTRONICS

With the advent of NEP-2020, India embanked on its Industrial development which lead to the due importance of Engineering and Professional Education. In order to cater to the needs of same, the Dept. of Electrical and Electronics Engineering, CBIT is striving hard to materialize this event ELECTRET which is an integral part of SUDHEE-2022, a National Level Technical Symposium.

This event is designed to be very fascinating, fetching and insightful with great learning experience.I wish this Technical Symposiumis going to be a splendid event, both in terms of Intellectual quality and social gratification.

My best wishes to all ardent Coordinators, Unruffled Organizers and the passionate Volunteers for their innate abilities to ignite the cheerful participants towards innovations.

No doubt, sharingtheknowledgeof Emerging Technologies in the arena of Electrical Engineeringis primeobjective of this rendezvous. Thiskey takeaway of the persistent Participants will certainly leave an indelible mark on the growth of the Sustainable Development of the Society in the years to come.

Prof. G. Suresh Babu
HOD, DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

MESSAGE BY HOD, DEPARTMENT OF MCA

The annual technical event SUDHEE - TECHEON 2022 is the mega event in which students from various colleges participate. Students are encouraged and guided for participating in various technical events organized by MCA students. TECHEON is the National level student technical symposium, where every student can present their innovative skills. This is an amazing opportunity to ignite every student's mind and also showcase their ideas on a unique and massive platform in the form of well integrated and intriguing presentation. It strives to explore the inquisitiveness and innate nature of young minds by giving their incredulous ideas a definitive direction. The purpose is to explore the innate and creative sparks of young technical brains. My best wishes to the organizers for successful conduction of the events and all the very best for all the participants

Dr B. Indira
HOD, DEPARTMENT OF MCA

MESSAGE BY CHAIRMAN, SUDHEE -2022

I am happy, honoured and privileged to be part of the prestigious and well known two day a National level technical fest SUDHEE -2022 of our Chaitanya Bharathi Institute of Technology, which is being organized during 23-24 March 2022.

This is one of the unique and prestigious event of the institute being organized and celebrated in a grand manner. The theme of the SUDHEE-2022 coined as "Ignite Innate Innovations" which is very much relevant and apt to the prevailing situations and circumstances in the society. The committee of Sudhee -2022 felt the need and necessity for the order of the day prevailing today in the society where in, its the primary responsibility of all intellectuals, especially young and budding engineers to come out with innovative views, attempts and outcomes to solve the dynamic and emerging societal problems and challenges.

As part of these celebrations, all the departments of the institute with an objective of inculcating the spirit of innovative technological endeavors, organizes various technical related events and competitions relevant to their own core engineering domain and with an appropriate title resembling and reflecting the theme of the event. The students of all departments of engineering from various colleges in the state and outside the state as well attend and participate actively in all these events of this technical fest and get benefit out of it. Apart from other technical events, all departments organizes a key note speaker session from a reputed industry for the benefit of its students and staff. The other popular and most sought after events like Hackathons and Robovanza are other unique featured events apart from department wise regular technical events such paper presentations and project expo etc..

I congratulate and wish all the very best and grand success of this mega technical event of the institute SUDHEE-2022.

Prof. D. Krishna Reddy
CHAIRMAN, SUDHEE-2022

FROM THE DESK OF EDITOR(S)

MESSAGE FROM EDITOR(S) DESK

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY, established in the Year 1979, esteemed as the Premier Engineering Institute in the States of Telangana and Andhra Pradesh, was promoted by a Group of Visionaries from varied Professions of Engineering, Medical, Legal and Management, with an Objective to facilitate the Best Engineering and Management Education to the Students and contribute towards meeting the need of Skilled and Technically conversant Engineers and Management Professionals, for the Country that embarked on an Economic Growth Plan. The Vision of the Institute is "To be the center of excellence in technical education and research", while the Mission of the Institute is "To address the emerging needs through quality technical education and advanced research". The Institute has been recognized as research center, approved by AICTE, accredited by NBA & NAAC. It has got NIRF Ranking as 124th, and it has got ISO certified (9001:2015).

C.B.I.T is conducting technical symposium by name SUDHEE-2022, with theme of Innate Ignite Innovation by means of which every student is advised to inculcate and inbribe these qualities of natural and highly performat, creativity and the knowledge management. The Editors of the book wishes the organizers of 2022 a grand success.

Dr T Sridevi
Dr. T. Murali Krishna
Dr.A.Supraja Reddy
Dr. Thanikanti Sudhakar Babu

COMMITTEES
OF
SUDHEE - 2022

Chaitanya Bharathi Institute of Technology
SUDHEE - 2022

Sudhee Theme : Ignite Innate Innovations

Prof. P. Ravinder Reddy, Principal - Chief Advisor

Advisory Committee

1.	Prof. N.V. Koteswara Rao	Director, IQAC
2.	Prof. P. Suresh	Director, AEC and CoT
3.	Prof. K. Krishnaveni	Director, Academics
4.	Prof. P. Sreenivas Sarma	Director, Student Affacirs and Progression
5.	Prof. A.D. Sarma	Director, R & D
6.	Prof. Umakanth Chowdary	Director, Incubaion and Innovation
7.	Dr. N.L.N. Reddy	Director, CDC
8.	Prof. M. Sway Das	Joint Director, Academics (Informatics)

Core Committee - Sudhee 2022 (23rd - 24th March 2022)

Chairman	:	Prof. D. Krishna Reddy, Head, ECE Dept.
Co-Chairman	:	Prof. K. Radhika, Head, IT Dept.
Convenor	:	Prof. P. Prabhakar Reddy, Mech. Dept.
Co-convenor	:	Dr. V. Aruna, Asst. Professor, Bio-Tech. Dept

Technical Committee - Sudhee 2022 (23rd - 24th March 2022)

Chairman	:	Prof. M.V.S. Murali Krishna, MED Dept.
Co-Chairman	:	Dr. T. Sridevi, CSE Dept.
Convenor	:	Dr. T. Murali Krishna, EEE. Dept.
Co-convenor	:	Dr. A. Supraja Reddy, Co-Convenor, ECE Dept.
Co-convenor	:	Dr. T. Sudhakar Babu, Co-Convenor, EEE Dept.

Members

1.	Smt. N. Lalitha Kumari	CED
2.	Sri Vishwanath Gopisetty	CED
3.	Sri N. Santosh Kumar	EEE
4.	Dr. N. Venkataphanendra Babu	EEE
5.	Sri Mohd. Ziauddin Jahangir	ECE
6.	Smmt. J. Mounika	ECE
7.	Sri P. Kiran Kumar	MED
8.	Sri V. Jaipal Reddy	MED
9.	Smt. Kavita Agarwal	CSE
10.	Mrs. D. Nagajyothi	CSE
11	Dr. Pragathi Pridharshinee	IT
12.	Sri K. Rajesh Kannan	IT
13.	Sri I. Balakrishna	Chemical Engg
14.	Dr. K. Prasad Babu	Chemical Engg
15.	Dr. C. Obula Reddy	Biotech
16.	Dr. Bishwambar Mishra	Biotech
17.	Sri CNVBR Sri Gowrinath	MCA
18.	Sri P. Ramesh	MCA
19.	Dr. Narender Miryala	MBA
20.	Dr. Prauthi Mandakini	MBA
21.	Smt. I. Srujana	CSE
22.	Smt. E. Ramalakshmi	IT
23.	Dr. B. Veera Jyothi	IT
24.	Dr. Ch. Indira Priyadarshini	MED
25.	Dr. P. Madhuri	Chemical Engg.
26.	Smt. N. Dhanalakshmi	ECE
27.	Sri P. Chandra Sekhar	ECE
28.	Sri E. Chandra Sekhar	ECE
29.	Sri G. Malikarjuna Rao	ECE
30.	Smt. P. Anjani Devi	MED
31.	Smt. B. Naga Jyothi	CSE
32.	Mr. E. Yadagiri	ECE
33.	Mrs. M. Naga Jyothi	CSE
34.	Smt. B. Kavitha	IT
35.	Smt. T.S. Praveena	MCA
36.	Sri K. Ravi Kiran Reddy	AEC
37.	Smt. K. Srilatha	CSE
38.	Mrs. D. Madhavi Latha	Biotech
39.	Mr. G. Surender	ECE
40.	Mr. K Ramulu	Maintenance
41.	Mr. B. Lakshmaiah	Maintenance
42.	Mr. A. Rajini	Maintenance
43	Mr. V. Sivarama Krishna	EEE
44.	Mr. K. Lakshmanna	R & D

SUDHEE- 2022
23rd - 24th March 2022

SUDHEE THEME: IGNITE INNATE INNOVATIONS

DAY WISE SCHEDULE

Day 1, Wednesday, March 23rd 2022		
Time	**Activity**	**Venue**
09:10 AM to 09.50 AM	Registrations	Respective Departments
10.00 AM to 11.00 AM	Inaugural Function	Assembly Hall (First Floor, Canteen Block)
11.00 AM to 11.30 AM	High Tea	Respective Departments
11.30 AM to 12.45 PM	Keynote Addresses	Respective Department Seminar Halls
12.45 PM to 01.30 PM	Lunch	Near K – Block and M – Block
01.30 PM to 03.00 PM	**Technical Session – I** **(Track I)** (Paper presentation/ Poster presentation/ Technical events/ Project Expo etc.)	Respective Departments
03.00 PM to 04.30 PM	**Technical Session – II** **(Track II)** (Paper presentation/ Poster presentation/ Technical events/ Project Expo etc.)	Respective Departments

Day 2, Thursday, March 24th 2022		
Time	**Activity**	**Venue**
09.45 AM to 11.15 AM	**Technical Session – III** **(Track III)** (Paper presentation/ Poster presentation/ Technical events/ Project Expo etc.)	Respective Departments
11.15 AM to 12.45 PM	**Technical Session – IV** **(Track IV)** (Paper presentation/ Poster presentation/ Technical events/ Project Expo etc.)	Respective Departments
12.45 PM to 01.30 PM	Lunch	Near K – Block and M – Block
02.00 PM to 03.15 PM	Valedictory Function	Respective Departments
03.15 PM to 04.00 PM	Tea	Respective Departments

Chaitanya Bharathi Institute of Technology(A)
Sudhee-2022 (Innate Ignite Innovation)

Theme of Key Note Speakers; (23/03/2022) (11.30 AM-12.45PM)

S. No	Department	Name of the Keynote Speaker	Designation of the Keynote Speaker	Theme of the Keynote Speaker
1	Biotechnology	Dr.E.Prasad	Process R &D specialist, Reddy Labs, Hyderabad	Ignition of young minds with innovative ideas in fermentation technology research
2	Chemical Engg	Mr. V.Pavan Kumar	Principal Engineer at Cognizant Technology Solutions, Hyderabad	Creativity, innovation and entrepreneurship in process industries in the era of digitalization
3	Civil Engineering	Mr. C.Anjeneya Prasad	Managing Director Metey Consultancy Hyderabad	Innovations in Civil Engineering (Precast Applications)
4	CS &E	Prof. Vikram Pudi	Data Sciences and Analytics Centre IITH	Reflections on data sciences
5	E& EE	Mr.S.K.Pandey	AGM, BHEL, RC Puram,Hyd	Innovations in Electrical Machines
6	E&CE	Mr.Sahadeva Sakha Dasa	Regional President The Akshaya Patra Foundation Hyderabad	Discover your career path
7	Information Technology	Mr. M.S.Subramanian	Head, Delivery Excellence, TCS	Essential of transformation from student to professional
8	Mechanical. Engg	Dr. J.John Rozario Jegaraj	Scientist-F Dy. Technical Director DRDL Kanchanbagh Hyderabad	Disruptive Technologies in Defense and aerospace applications
9	MBA	Mr.Khan Mohammed	Principal Consultant NIRD	Rural Innovation
10	MCA	Mr. J.Amarnath	CEO, Quanint Hyderabad	How to initiate your startup journey

VISION
OF
IGNITED MINDS

Dr. Kiran Kumar Amireddy, Ph.D. (IIT Madras), Assistant Professor, Mechanical Engineering Department

Prior to joining CBIT, Hyderabad Kiran Kumar Amireddy worked as a Research Engineer at Saint-Gobain India Private limited (R&D)where he developed several NDE test methods to inspect the quality of Ceramic and Abrasive materials (Pan India). He also worked on several consultancy projects like, Multipoint Temperature sensor, Portable Rheology and Temperature sensor and Acoustic performance improvement of composites in collaboration with IIT Madras. During his PhD work at IIT Madras, he developed a Super Resolution Ultrasonic Imaging system (SUI), which can give an ultrasonic image quality comparable to that of X-ray imaging system. He employed Holey metamaterials as a lens to focus the scattered ultrasonic waves to get an improved resolution, with which he experimentally demonstrated a subwavelength ultrasonic imaging of a feature size 1/36th of the operating wavelength. Which is the highest resolution achieved globally in the field of ultrasonic regime. For his contribution in the field of Ultrasonic metamaterials, he received several prestigious awards like, Gandian Young Technological Innovation award from President of India, Best PhD thesis from Ultrasonic society of India, European Young Scientist award and many more. HisResearch interests are Ultrasonics and acoustics, Structural health monitoring, Micro and nano imaging, Metamaterials, NDT&E, Materials characterization and wave propagation, Nonlinear Ultrasonics and Composite materials.

Dr. AshutoshSahu, Ph.D.(IITKharagpur), Assistant Professor, Mechanical Engineering Department

Dr. Ashutosh Sahu, worked in the field of Al-based bulk metallic glass nano composites. He synthesized Al-based amorphous nano composites via powder metallurgy route. His research interests include, but are not limited to, powder metallurgy, foundry and metal forming. According to his opinion, several research initiatives in the field of amorphous nano composites can be carried out based on his research interests and the institute's infrastructure, which is required to develop advance materials with properties like high strength to weight ratio. He further emphasized that multiple research efforts can be carried out to develop emerging materials with superior mechanical properties compared to the conventional metals and alloys. He further added that the application of one's core knowledge to the requirements of society or a community is where research begins. He opined that the most important condition for conducting research is to have solid fundamental knowledge and to keep a close eye on the latest and the advanced technology.

Dr. Y. S. Kannan, Ph.D.(IIT-Hyderabad), Assistant Professor, Mechanical Engineering Department

Dr. Y.S.Kannan, worked in the field of experimental fluid dynamics. He employed cavitation bubble dynamics at a liquid free-surface to try to build a needle-free drug delivery system. In this case, the liquid jet itself serves as a drug delivery needle. His research interests include, but are not limited to, thermal energy storage systems, experimental fluid dynamics, and renewable energy sources. According to his opinion, several research initiatives in the field of alternative fuels can be carried out based on his research interests and the institute's infrastructure, which is a pressing necessity as depletion of fossil fuels, ever increase of pollution levels with fossil fuels and increase of economic burden on developing counties like India. He further emphasized that multiple research efforts can be carried out to improve the thermal efficiency of various devices on thermal energy storage systems. He further added that the application of one's core knowledge to the requirements of society or a community is where research begins. He opined that the most important condition for conducting research is to have solid fundamental knowledge and to keep a close eye on the latest and the advanced technology

Dr. RanjitJ. Singh, Assistant Professor, Mechanical Engineering Department, Post-Doctoral Fellow (University of California Los Angeles, USA) Post-Doctoral Fellow (IIT Kanpur) Post-Doctoral Fellow (IIT Bombay) Ph.D. (Visvesvaraya National Institute of Technology Nagpur),

Dr. Ranjit J. Singh worked in the field of solver development and CFD analysis. He had developed several in-house solvers for CFD analysis in an incompressible single/multiphase flow.His research interests include, but are not limited to, Magnetohydrodynamics flow, Heat and Mass transfer, Porous media flow, Multiphase flow, Solidification/Melting analysis in casting. According to his assessment, several numerical analysis has been performed to understand the fluid flow and heat transfer along with mass transfer performance in various flow domain with different flow physics. He further emphasized that multiple research efforts can be carried out in the above-mentioned areato expose the possibility of interdisciplinary researchand its outcomes.He emphasized on active learning and implementation of the various flow physics so that students can get up-to-date knowledge of basic physics with implementation using commercial and open-source software for computational analysis of flow. In the present scenario, the industries need technocrats who have already learned hands-on skills in CFD/CAE modeling tools. He focused on having fundamental concept and being up-to-datewith modern technology is the most significant requirement for undertaking research.

Dr. M. Anil Kumar, Ph.D.(NIT-Karnataka), Assistant Professor, School of Management Studies

Dr. M. Anil Kumar, worked in the field of legal insider trading in India. He examined the insider trading behavior in the Indian stock market by using the four-factor asset pricing model that adjusts for size, book to market and momentum factors and event study methodology. The findings of the study substantially exceed the previously documented degree of predictability of insider trading.

As a faculty my goal is to pursue additional research, training, or teaching in order to have better skills to pursue a career in research, academia, or any other fields. I would like to carry out research and further increase expertise in financial econometrics, Time Series econometrics and Complex data analysis. As an Assistant Professor i would like to contribute to the scholarly mission of the host institution; with relevant publications in peer-reviewed academic journals and conferences.

Dr. Rupesh Mishra, Ph.D.(UJI-I, Spain), M.Tech(IIIT-H), Assistant Professor, Computer Science & Engineering Department

Dr. Rupesh Mishra, worked in the area ofData Science, NLP and Machine Learning. He worked upon ranking system of disaster affected tourist places based upon twitter datasets. He has developed a toolkit which is useful for ranking system for disaster's tourism places. His research interests include, but are not limited to tourism industries datasets;also he is planning toexperiment upon Agriculture and Bio-informatics datasets using ML. According to his opinion, several research initiatives in the field of Tourism industry based upon different facilities should be provided to the tourism places. He further added that, the application of one's core knowledge to the requirements of society or a community is where research begins. He opined that the most important condition for conducting research is to have tourism Industry using Machine Learning approach and to keep a close eye on the latest and the advanced technology of AI. In the future, He want to develop/Implement AI based IOT device in which the plant related diseases can be identified, and the medicine/water/other required material should be automatically released from time to time from the AI connected machines. He is also interested to work upon medical related datasets, through which the disease can be predicted,and complete suggestions may be given to the patients.

Dr.Dharmalingam K, Ph.D. (IIT Guwahati)
Assistant Professor, Department of Biotechnology

Dr.Dharmalingam K, works in the field of hydrogel technology. According to his point of view,researchers have been turned their attention from synthetic polymers to natural polymers due to increase in pollution and decrease in fossil fuel problems. Therefore, researchersincorporate biocompatible and biodegradable polymers for developing any novel materials, which come in contact with human body. In this regard, cellulose and their derivatives find their potential applications in various fields. During his doctoral tenure, he developed a series of cellulose-based hydrogel film for loading hydrophilic positively charged drugs and nanomaterials. In a nutshell, he fabricated various functionalized hydrogel films, which were antibacterial, antioxidant and biocompatible with high degree of swelling in PBS buffer and good mechanical strength. He has a deep understanding and experience in bio-nanocomposites, nanomaterials, hydrogels, food packaging films, microwave-synthesis reaction and hydrophobic drug solubility. Currently, he does research at CBIT in the following projects: (a) development of hydrogel films for their potential applications in treating atopic dermatitis, (b) fabrication of low-cost biodegradable hydrogel-based facile mask sheet and (c) synthesis and characterization of hydrogels for dye and heavy metal removals. He strongly believes that a multidisciplinary knowledge is required to extend hydrogel applications into various fields.

DEPARTMENTAL PROCEEDINGS

NATURAL ELEMENT METHOD FOR 2D LINEAR ELASTICITY

Syed Mohammed Shah*

* M.E (CIVIL) (Structural Engineering), III Semester, March 2022, Roll No.1601-20-741-018. E-mail: pgs20018_civil.syed@cbit.org.in, Chaitanya Bharathi Institute of Technology, Hyderabad - 500075

The application of the Natural Element Method (NEM) to boundary value problems in two-dimensional small displacement elastostatics will be studied. In Natural Element Method, the discrete model of the domain consists of a set of scattered distinct nodes and a polygonal description of the boundary. The trial and test functions are constructed using natural neighbor interpolants. These interpolants are based on the Voronoi tessellation and Delaunay Triangulation of the set of nodes. The interpolation is smooth everywhere, except at the nodes where they are C0. In one-dimension, NEM is identical to linear elements in FEM. The NEM interpolation is strictly linear between adjacent nodes on the boundary of the convex hull, which facilitates imposition of essential boundary conditions. This distinguishes NEM from other meshless numerical methods. A standard displacement-based Galerkin procedure will be used to obtain the discrete system of linear equations. Computational efficiency of NEM will be compared with that of conventional Finite Element Method.

Key words: Natural Neighbor interpolant; Voronoi tessellation; Delaunay triangulation; 2D elastostatics; Galerkin approach.

NON-LINEAR ANALYSIS OF INDUSTRIAL STRUCTURE USING BRACINGS AND DAMPERS UNDER WIND AND SEISMIC LOADS

ArshiyaAnjum*

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The structural system of the building has to support the lateral loads due to earthquake and wind in addition to gravity loads. A lateral load develops high stresses and produces sway causing vibration and drift. If the industrial steel structures are not designed to resist the lateral loads, then they may be collapse resulting into the loss of life or its content. Therefore it's important for the structure to have not only sufficient strength against gravity loads but also the adequate stiffness to resist lateral forces.

The purpose of this study is to propose a simple, innovative and effective LLRSS or structural technology and methodology for seismic control that can be used in both old and new industrial steel structures. Despite its growing popularity, analytical studies of braced industrial steel structures and detailed requirements for controlling seismic response in India are limited. In addition, due to the large element size, industrial steel structures carry high deadweights and internships are susceptible to seismic loss. Therefore, it has been proposed as LLRSS to study the response of steel buildings / frames with different types of steel brace configurations and dampers to control lateral vibration displacement and floor drift. The structural response parameters selected for the study are duration, natural frequency, and roof displacement. The research paper deals with parametric studies of non-linear pushover analysis (NLPOA) responses of 3D industrial steel structures reinforced with dampers of different structural configurations and different mass ratios using software (Sap2000).

Keywords: bracings, dampers, horizontal load, lateral displacement, response spectrum analysis, storey drift.

COMPARATIVE ANALYSIS OF AN EXTRADOSED BRIDGE USING ANSYS AND GTSTRUDL

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The application of the Natural Element Method (NEM) to boundary value problems in two-dimensional small displacement elastostatics will be studied. In Natural Element Method, the discrete model of the domain consists of a set of scattered distinct nodes and a polygonal description of the boundary. The trial and test functions are constructed using natural neighbor interpolants. These interpolants are based on the Voronoi tessellation and Delaunay Triangulation of the set of nodes. The interpolation is smooth everywhere, except at the nodes where they are C0. In one-dimension, NEM is identical to linear elements in FEM. The NEM interpolation is strictly linear between adjacent nodes on the boundary of the convex hull, which facilitates imposition of essential boundary conditions. This distinguishes NEM from other meshless numerical methods. A standard displacement-based Galerkin procedure will be used to obtain the discrete system of linear equations. Computational efficiency of NEM will be compared with that of conventional Finite Element Method.

Key words: Natural Neighbor interpolant; Voronoi tessellation; Delaunay triangulation; 2D elastostatics; Galerkin approach.

EFFECT OF BLAST LOADS ON A SUSPENSION BRIDGE USING SAP2000

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In India bridges are of special importance. The analysis of these bridges should be carried out for different loading conditions. Bridges are normally designed for dead load, live load, Blast Loads and other occasional loads (like wind load and earthquake load). American Association of State Highways and Transportation Officials (AASHTO) have specified for the ship impact, seismic vulnerability and also against vehicular collisions. In India we will follow the Code IS: 4991-1968 (Criteria for blast resistant design of structures for explosions above ground). But there are no definite structural design criteria for the bridges under typical blast loadings. This research is done to provide a basic guideline for using the blast load analysis on the suspension bridge. Further research may be carried out in this field to develop some standards for the bridge resistance against explosions. Also, the AASHTO loading was applied to study the effect of live load on the bridge. For carrying out the impact of blast loading, the bridge was modeled in parallel using SAP2000 Software. The whole modeling of the suspension part of the bay bridge was done on the SAP2000 for carrying out the non-linear analysis of the blast loads. The behaviors of each element under the effect of the blasts were studied from the output generated by the SAP2000. The output of the software presents results including moments, axial loads and displacements Moreover, moments and axial load at each node and at any point within the element, can be easily obtained from the software output.

Key words: Bridges, loading conditions, SAP2000.

IMPLEMENTATION OF BIRD MONITORING SYSTEM

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Many people like to keep pets like dogs, cats, birds, rabbits and fish aquarium etc. Taking care of birds is somewhat difficult because they need continuous attention and care. It is more difficult to the owner to leave them home for few hours or days and to keep an eye on them. To overcome this problem the proposed bird monitoring system would support greatly. This system is developed using LPC2148 microcontroller which collects the data from all sensors (Rain, IR, ultrasonic) interfaced and display sensor values on LCD, the amount of food that is fed to them. When a bird lands on the feeder it is detected by an Ultrasonic sensor, the microcontroller collects the information like rain drops detection & amount of food left in the container. The data collected is sent as an SMS through GSM to the owner.

EXPERIMENTAL INVESTIGATIONS ON THE INFLUENCE OF EFFECTIVE DEPTH ON STRAIN SENSING OF SMART CONCRETE RCC BEAM

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Health monitoring can be made possible for a reinforced concrete (RC) beam embedded with micro carbon fibres of certain length and diameter. For evaluating the effect of smart concrete (carbon fiber based concrete) in strain, crack/damage sensing and to study the effect of carbon fibers under flexural loading, RC beams of variable dimensions (effective depths) are partially cast with smart concrete (containing carbon fibres and zinc powder in suitable proportions) are tested. Smart concrete is placed only in mid span for a fixed length of 350mm and to a depth of 55.5mm at top and bottom surface of the beam irrespective of the depth of the beam. The effective depth of the beam is a variable parameter in this study and three effective depths, i.e. 150mm, 200mm and 250mm are considered in this work. The fractional change in the electrical resistance of RC beam is found to correlate with compressive strain in concrete and tensile strain in steel up to a good extent. An empirical relation is used to correlate fractional change in electrical resistance and strain in concrete/steel. Further, the experimental ultimate strength values are compared with those of theoretical prediction using IS456-2000, ACI 318-11 and CSA A23.3- 04 codes to study the effect of carbon fibre on different strength parameters. A self-sensing cement composite, partially made of smart concrete, can be employed for effective health monitoring of structures.

Key words: Smart concrete, Carbon fibres, zinc powder, effective depth, Health monitoring.

A STUDY ON STRENGTH PROPERTIES OF RUBBER POWDER CONCRETE

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This paper presents a review on rubberized concrete mixes and their properties such as strength, ductility, sound and water absorption, in addition to acid and sulphate resistance. Moreover, it discusses a review about using rubberized concrete in structural elements and its effect on ultimate compressive strength and tensile strength and ductility. Rubberized concrete mixes exhibit lower strength than ordinary concrete mixes. On the other hand, rubberized concrete has higher ductility and energy dissipation behaviour. Rubberized concrete with its lightweight showed a high resistance to freeze-thaw and sulphate and acid attacks in comparison with ordinary concrete. The most common structural member is Rubberized Concrete Filled Steel Tubes (RUCFST). In addition to the aforementioned merits of rubberized concrete, the confining effect of the steel tube recoups the reduction in concrete compressive strength caused by rubber inclusion. Limited researches concerned in strengthening and repairing of deficient Concrete Filled Steel Tubes (CFST) with different types of Fibre Reinforced Polymers (FRP). There is noticeable effect of using these FRP materials on RUCFST sections, ultimate strength and ductility.

FAKE PROFILE DETECTION ON SOCIAL MEDIA WEBSITES USING ANN

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In this project, Artificial Neural Networks is used to identify whether the given account details are from genuine or fake users. ANN algorithm will be trained with all previous users fake and genuine account data and then whenever we gave new test data then that ANN train model will be applied on new test data to identify whether given new account details are from genuine or fake users. Online social networks such as Facebook or Twitter contains users details and some malicious users will hack social network database to steal or breach users information. To can protect users data, by using ANN Algorithm.

RESPONSE OF RCC BUILDING AND STEEL BUILDING TO BLAST LOADINGS

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The impact of the blast load on the structure due to the increase of terrorist activities is a serious issue causing failure of the buildings and loss of life. Depending upon the location of blast within or nearby buildings the structure undergoes ravaging failure due to explosion. In the present study the RCC building and the Steel building is subjects to 200, 400 and 600kg charge weight of the blast load with a standoff distance of 20, 40 and 60m. The time history analysis is carried out using ETABS software. The response of the structure is determined by storey drift, column forces and storey displacement. Depending on the sources of blast load and the charge weight of the explosive, response of the building and safe standoff distance is found. To make the system more resistible for the blast load, various structural systems like shear wall, steel bracings and dampers are implemented. Keywords: -Blast load; Standoff distance; Charge weight; ETABS software.

E-COMMERCE

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In this age of the internet, e-commerce is growing by leaps and bounds keeping the growth of brick and mortar businesses in the dust. In many cases, brick and mortar businesses are turning to online or e-commerce partnerships. People in developed countries and a growing number of people in the developing world now use ecommerce websites every day to make daily purchases. However the growth of e-commerce in the underdeveloped world is not so great and there is so much to wish for. It presents various aspects of ecommerce website development and a complete solution to the challenges involved in developing one. Contains an editing process, which begins with determining the application case, domain model and pattern for web application architecture. The whole development process is primarily divided into two parts: end-to-end development and backend development. Database design is also discussed with emphasis on its communication and relationships. This irrational approach to building an e-commerce website can be easily replicated and followed in developing e-commerce websites in developing and developing countries where computer resources are rare and expensive due to their socio-economic status. e-commerce platform plays an important role in some areas; its activities are part of e-business operations. The aim is to build and develop a reliable e-commerce theory-based website, to improve well-designed and functional web pages. To start selling a website online, you need to use the latest technology to achieve this goal. As a first step, we need to set up an easy-to-use e-commerce online store. Then improve customer experience, and finally use direct online marketing between business to buyer through electronic payment methods. All of these strategies should be based on a well-targeted electronic commerce strategy using current technology to ensure the best profit for the company.

DEEP LEARNING BASED HUMAN ACTION RECOGNITION

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Understanding human actions by inspecting video sequences has become an essential research topic. Human Action Recognition (HAR) technology enables the computer to achieve this level of understanding. HAR has a high significance in a wide range of applications. Fields like video surveillance, virtual reality, intelligent human-computer interface and identity recognition have benefited from HAR.

The aim of this project is to develop a model for human actions such as running, jogging, walking, clapping, handwaving and boxing. A series of videos is given for the layout, where an individual executes an event in each video. The action performed on that particular video will be the label of a video. This relationship must be learned by the model, and the label of an input (video) which he never saw can then be predicted. Technically, despite descriptions of these acts, the model would need to learn to distinguish between various human behaviors. There may be many content identification programs which can work on following jobs like Active object tracking for identifying an item such as a vehicle or a human from a CCTV picture and learning the patterns in the movement of humans when we are able to create a pattern that will guide us (humans) to perform a variety of activities.

BUS PASS USING QR CODE BY MACHINE LEARNING ALGORITHM

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As implemented in the various Mero Rail Services cross globe, it is possible to improvise the transport Services. This will benefit both transport service provider and travellers. There is no such advances mechanism to verify the monthly passes provided by the transport service providers, Ticket Checkers need to manually check the Monthly pass of hundreds of travellers, they need to carry the bus pass in hand while travelling, it becomes difficult to keep it intact, hence we can give another option of providing QR code to the same bus pass. Travellers can keep a scanned copy of the pass digitally with them. Ticket Checker will scan the QR Code in the ticketing machine, this will help them verify the card, its validity and also weather same person is travelling using the card or not.

If this technology is implemented will not only help in ease of access to the travellers but also help in improvising the existing infrastructure of the Bus Pass. If this data is collected it can be used to identify the most crowded hours and routes in the city. In initial days of implementing this technology it may seem difficult but at the end of day this will give boost to the transport department for monthly bus pass by improvising the technology and infrastructure.

SMART WASTE MANAGEMENT SYSTEM

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The Smart Waste Management System is a technology that allows you to deal with challenges to improve waste disposal. It will allow each recycled container to report its filling level. Improved functionality of such a system will allow you to predict the expected downtime of the recycled container, the time when the filling level of the container will reach a critical value. Filling level forecasts will allow you to avoid unwanted traffic without violating the requirement for overfilling. However, the level of completion level will determine the effectiveness of the Smart Waste Management system. There are a few technical challenges to achieving high quality predictions. Our analysis of Smart Waste Management's operating system has revealed that one of the challenges is the accuracy of the accurate detection of a container that is emptied using sensors placed on the container.

PREDICTION OF CROP AND FERTILIZER SUITABILITY BASED ON THE NUTRIENTS OF SOIL

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Crop cultivation prediction is an integral part of agriculture and is primarily based on factors such as soil, environmental features like rainfall and temperature, and the quantum of fertilizer used, particularly nitrogen and phosphorus. These factors, however, vary from region to region: consequently, farmers are unable to cultivate similar crops in every region. This is where machine learning (ML) techniques step in to help find the most suitable crops for a particular region, thus assisting farmers a great deal in crop prediction. The selection of key features for a particular region keeps the crop prediction process constantly upgraded. This work proposes a novel FS approach called modified recursive feature elimination (MRFE) to select appropriate features from a data set for crop prediction. The proposed MRFE technique selects and ranks salient features using a ranking method. The experimental results show that the MRFE method selects the most accurate features, while the bagging technique helps accurately predict a suitable crop. The performance of proposed MRFE technique is evaluated by various metrics such as accuracy (ACC), precision, recall, specificity, F1 score, area under the curve, mean absolute error, and log loss. From the performance analysis, it is justified that the MRFE technique performs well with 95% ACC than other FS methods.

ENHANCEMENT OF HEAT TRANSFER IN A CORRUGATED HEAT EXCHANGER WITH NON- NEWTONIAN FLUIDS

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Corrugated plate heat exchangers results in better heat transfer rates and heat recovery compared to a flat plate heat exchangers. These types of heat exchangers find applications in pharmaceutical, brewery, dairy and food industries. The corrugated plate heat exchangers can be either horizontal or vertical type. The main geometrical parameter that contributes to high heat transfer is either the chevron or corrugation angle. Based on this parameter the heat exchangers are known as chevron type corrugated PHE and wavy type corrugated PHE. In the present studies wavy corrugated PHEs are considered because of their larger heat transfer surface area and increase turbulence levels compared to flat PHEs. The variables in the study are spacing between plates, corrugation angles, size of the corrugated plate, material of the construction and properties of the test fluids. Chemical industry and Mechanical industry are the major users of energy. In the past, efficient utilization of energy has not received much attention, mainly due to the high profit margin enjoyed by the chemical manufacturers. The steep escalation of energy costs in recent years has forced chemical industry to reverse these trends and minimize the wastage of energy. Recovery of heat from process fluids through heat exchangers is receiving increasing attention by the designers of modern chemical plants. Several types of heat exchangers are now available for wide variety of applications involving high heat transfer performance. Plate Heat Exchangers (PHEs) belong to this category. These are capable of recovering heat efficiency at low temperature differentials (as low as 10C) mainly because of high turbulence in such units even at low velocities. Corrugated plate heat exchangers results in better heat transfer rates and heat recovery compared to a flat plate heat exchangers. These types of heat exchangers find applications in pharmaceutical, brewery, dairy and food industries. The corrugated plate heat exchangers can be either horizontal or vertical type. The main geometrical parameter that contributes to high heat transfer is either the chevron or corrugation angle. Based on this parameter the heat exchangers are known as chevron type corrugated PHE and wavy type corrugated PHE. In the present studies wavy corrugated PHEs are considered because of their larger heat transfer surface area and increase turbulence levels compared to flat PHEs. Fluids are classified as Newtonian fluid (water, glycerin, mineral oil etc,.) and non-Newtonian fluids (thick oils, biodiesel). Experiments are conducted with test fluids of biodiesel and water in corrugated heat exchanger.

INDIAN STOCK PRICE CRISIS POINT PREDICTION USING TECHNICAL INDICATOR BOLLINGER BANDS

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A stock market crash is a drop in stock prices more than 10% across the major indices. Stock crisis prediction is a difficult task due to more volatility in the stock market. Stock price sell offs are due to various reasons such as company earnings, geopolitical tension, financial crisis, and pandemic situations. Crisis prediction is a challenging task for researchers and investors. We proposed a stock crisis prediction model based on the Hybrid Feature Selection

(HFS) technique. o First, we proposed the HFS algorithm to removes the irrelevant financial parameters features of stock. o The second is the Naive Bayes method is considered to classify the strong fundamental stock.

The third is we have used the Relative Strength Index (RSI) method to find a bubble in stock price. o The fourth is we have used moving average statistics to identify the crisis point in stock prices. o The fifth is stock crisis prediction based on Extreme Gradient Boosting (XGBoost) and Deep Neural Network (DNN) regression method. The performance of the model is evaluated based on Mean Squared Error (MSE), Mean Absolute Error (MAE), and Root Mean Square Error (RMSE). HFS based XGBoost method was performed better than HFS based DNN method for predicting the stock crisis. The experiments considered the Indian datasets to carry out the task. In the future, the researchers can explore other technical indicators to predict the crisis point. There is more scope to improve and fine-tune the XGBoost method with a different optimizer. I will be using NIFTY 50 data to predict the stock crisis point by using Bollinger Bands indicator or optimizing the XGBoost method with various optimization.

QUANTUM COMPUTING - A COMPREHENSIVE STUDY FOR COMPUTER SCIENTISTS

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Quantum theory is one of the most successful theories that has presented a new line of scientific thought, predicted entirely inconceivable situations and influenced several domains of modern technologies. Quantum Computing merges two great scientific revolutions of the 20th century: Computer Science and Quantum Physics. Quantum physics is the theoretical basis of the transistor, the laser, and other technologies which enabled the computing revolution. But on the algorithmic level today's computing machinery still operates on "classical" Boolean logic which very much obeys Moore's law, hence due to the advancements in technology, the power of processors has increased exponentially and the size of the transistors have shrunken down to the size of atoms, which is its theoretical limit. Quantum Computers promise to provide the solution to that problem and claim that certain computational tasks might be executed exponentially faster on a Quantum Processor than on a classical processor. Quantum Computing is the design of hardware and software that replaces Boolean logic with quantum law at the algorithmic level. A fundamental challenge is to build a high-fidelity processor replacing traditional semiconductors with superconductors capable of running quantum algorithms in an exponentially large computational space.

BLOCKCHAIN REVOLUTION-THE TECHNOLOGY BEHIND BITCOIN AND OTHER CRYPTOCURRENCIES IN THIS CHANGING WORLD

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Blockchain Technology is one of the leading technology in the industry of computer science. Blockchain is going to bring the revolution that the internet had brought us in 1990's. Blockchain is a decentralized, distributed, public ledger system. So the birth of blockchain technology date spark in 2009 and the timing was impeccable while the world was facing one of the toughest economic crises a group or person under the pseudonym of Satoshi Nakamoto introduced to the public bitcoin a digital currency not owned by the government but in essence very much like fiat currency or some of you will call cash so in sense it could be spent anonymously it could be hard to track and it is easily trusted now the underlying tech that powered bitcoin was block chain so any transaction that was made using bitcoin as currency was registered on a list called and this Ledger was then distributed to all the members that had agreed to participate in the network. A blockchain is a public ledger to which everyone has access to but without a central authority having control. It is an enabling technology for individuals and companies to collaborate with trust and transparency

PLANT LEAF DISEASE DETECTION AND CLASSIFICATION USING DEEP LEARNING

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The agricultural field plays an important role in the Gross Domestic Product (GDP) of any country. Plants are very important as they are a supply source to a human being. In Most developing countries farmers use manual methods for farming. Sometimes late identifications of diseases in plants cause economic losses to the farmer which affects the economy of the state and the country at a large scale. There are some challenges in disease identification and classification are uneven background during image acquisition, segmentation, and classification of images. Once diseases are identified as per the symptoms, and their characteristics, control mechanisms can be applied. This survey presents detailed discussions on plant diseases, disease detection, and their classification using traditional methods, machine learning, and deep learning. The survey revealed that the adoption of traditional methods, machine learning techniques are still inefficient. While deep learning methods delivered superior results for disease identification and classification, compared to traditional methods.

INTRODUCTION TO EDGE COMPUTING

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The proliferation of Internet of Things (IoT) and the success of rich cloud services have pushed the horizon of a new computing paradigm, Edge Computing, which calls for processing the data at the edge of the network. Edge Computing has the potential to address the concerns of response time requirement, battery life constraint, bandwidth cost saving as well as data safety and privacy. In this presentation I emphasis on Edge Computing, Introduction and overview of basic aspects and refresh to Cloud Computing, essentially pertaining to the places it could not effectuate where Edge Computing has pioneered. It describes the main fields in which Edge Computing is used now-a-days and the paramount nature of Edge Computing and it's implementation in Real-world, following with case studies, ranging from cloud offloading to smart home and city, as well as collaborative edge to materialize the concept of Edge Computing. Finally, I present several challenges and opportunities in the field of Edge Computing, and hope this presentation will gain attention from the community and inspire more research in this direction.

AUGMENTED REALITY AND VIRTUAL REALITY EXPLAINED: THEIR DIFFERENCES, SIMILARITIES AND APPLICATIONS

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This paper presents an overview of basic aspects of Augmented Reality (AR) and Virtual Reality(VR) . It describes the main fields in which Augmented Reality and Virtual Reality is applied nowadays and important of AR and VR devices. Some difference and similarities of Augmented Reality and Virtual Reality will be discussed and this paper will provide an overview of them. Augmented reality (AR) is a live direct or indirect view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data. Virtual reality's goal of the hardware is to create virtual environment without the boundaries we usually associate with TV or computer screens. So whichever way you look, the screen mounted to your face follows you. Both technologies have multiple uses towards the things we do on our daily basis. In this we'll look at the mechanisms of Augmented reality and Virtual reality, While carefully laying down the Pro(s) and Con(s) of these technologies.

COMPARISON STUDY OF PARTIAL REPLACEMENT OF WASTE RUBBER IN CONCRETE

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Concrete is an outstanding structural substantial, and is regarded as beneficial for the modern civilization as well as human society. This paper represent the study on strength, properties and behaviour of waste rubber. Generally nowadays large quantity of rubber wastes are generated by the industries, vehicles etc...and they are not properly disposed. Hence, the manipulation of waste rubber in concrete has been considered technically probable and this concrete is being regarded light weight concrete. Waste rubber is produced in large sum as a waste and does not have beneficial disposal. In the present study, we have intended to study the use of waste rubber by measurement of 5%, 10%, 15%, and 20%, in the concrete with replacement cement and fine aggregate. And, to decide the finding characteristics strength of concrete encompassing waste rubber. Out of certain outcomes, we inferred that there is a reduction in mechanical properties of the concrete. Besides grounded on the outcomes of certain tests, concrete containing waste rubber particles as combinations is still not acclaimed for structural usages due to the low compressive strength. The study parameters from various papers are compressive strength, splitting strength, and flexural strength. This study gives experimentations on normal strength concrete and replaced waste rubber powder in concrete. Results shows that 5% waste rubber is the best mix to achieve the suitable compressive strength and this type of concrete mix is good for water absorption.

COMPARISON OF MACHINE LEARNING ALGORITHMS FOR PREDICTING CRIME HOTSPOTS

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Crime prediction is of great significance to the formulation of policing strategies and the implementation of crime prevention and control. Machine learning is the current mainstream prediction method. How ever, few studies have systematically compared different machine learning methods for crime prediction. In the base paper it has taken the historical data of public property crime from 2015 to 2018 from a section of a large coastal city in the southeast of China as research data to assess the predictive power between several machine learning algorithms. Results based on the historical crime data alone suggest that the LSTM model outperformed KNN, random forest, support vector machine, naïve Bayes and convolutional neural networks. The built environment data of points of interests(POIs) and urban road network density are input into LSTM model covariates. It is found that the model with built environment covariates has better prediction effect compared with the original model that is based on historical crime data alone. Therefore, future crime prediction should take advantage of both historical crime data and covariates associated with criminological theories.

UVM BASED VERIFICATION OF DMAC WITH ADVANCED LINKED LIST FEATURES.

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Today's SoCs are composed of a wide variety of modules, such as microprocessor cores, memories, peripherals, and customized blocks directly related to the targeted application. To effectively perform simulation-based design verification of peripheral cores embedded in a SoC, it is necessary to stimulate the devices in a broad range of behavior possibilities, checking the produced results. Different strategies for generating suitable stimuli have been proposed by the research community to functionally verify the modules embedded in a SoC and interconnections. Computers that have DMA channels can transfer data to and from devices much smaller CPU load than computers without a DMA channel. However, design verification of deeply embedded peripherals, e.g., DMA controllers, is really a challenging task, since their controllability is typically reduced. The objective of this work is to verify Direct Memory Access (DMA) controller which schedule the task of peripherals such that they can perform at their own. The UVM verification platform built with system Verilog language, which realizes the functional verification of Direct Memory Access, and achieves verification of correctness of DUT functions and coverage statistics. It can greatly improve the verification efficiency and the reusability of the verification platform, and meet the needs of IC verification.

MACHINE LEARNING FOR CLINICAL OUTCOME PREDICTION

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Clinical decision-making in healthcare is already being influenced by predictions or recommendations made by data-driven machines. Numerous machine learning applications have appeared in the latest clinical literature, especially for outcome prediction models, with outcomes ranging from mortality and cardiac arrest to acute kidney injury and arrhythmia. In this review article, we summarize the state of- the-art in related works covering data processing, inference, and model evaluation, in the context of outcome prediction models developed using data extracted from electronic health records. Various types of data can be used to develop outcome prediction models, such as imaging, speech, or claims data.Here, we focus on data extracted from electronic health records (EHR),which are being increasingly deployed in hospitals worldwide.EHRs are used in hospitals to store longitudinal information of patients collected in a care delivery setting.We also discuss limitations of prominent modeling assumptions and highlight opportunities for future research. The main Objective of this paper is to analyze previous clinical medical data possibilities of current people and aids to increase the health care records.

HARDWARE IMPLEMENTATION AND VLSI REALISATION OF ECC CRYPTOSYSTEM FOR SECURITY

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Security plays a crucial role in the transmission and reception of data. Security is about protecting data by preventing unauthorized access to systems websites and databases and applying the Elliptical Curve Cryptography method for encryption and decryption ion the data. The encryption and decryption procession is performed at the transmitter and receiver sides of both ends so that information remains ultimately desired during the transmission. This work shows the significance of a hardware implementation of chip area, delay, and power. We are implementing the ECC algorithm using the Xilinx Vivado suite, the practical solution to utilize the internet of things (IoT) for better security.

MECHANICAL AND FRACTURE PARAMETERS OF HYBRID FIBER REINFORCED HIGH VOLUME FLYASH CONCRETE

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Fly ash is generally an industrial waste obtained from burning coal. Fly ash substitution to cement is a well-recognized approach to reduce CO2 emissions. observed significant improvement in strength and durability with the substitution of high volume fly ash in ordinary Portland cement (OPC). Concrete in general and fly ash concrete in particular with 50% or more high volume replacements can experience brittle behavior. Fiber reinforcement is commonly used to provide toughness and ductility to brittle cementitious matrices. Reinforcement of concrete with a single type of fiber may improve the desired properties to a limited level. A composite can be termed as hybrid, if two or more types of fibers are rationally combined to produce a composite that derives benefits from each of the individual fibers and exhibits a synergetic response. This study aims to characterize and quantify the mechanical and fracture properties of hybrid fiber reinforced concrete.

Keywords: hybrid fiber composite, flyash, fracture parameters.

UVM BASED VERIFICATION OF I3C

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In today's generation handheld devices like Mobile SOC's are an amalgamation of many components like GPU, camera, sensor, display etc. on one single chip. In order to integrate these components protocols are needed. One such protocol in the emerging trend is I3C protocol. I3C is abbreviated as Improved Inter Integrated Circuit developed by Mobile Industry Processor Interface (MIPI) alliance. Most probably used for the interconnection of sensors in Mobile SOC's. The bus protocol is backward compatible with I2C devices. The aim is to reduce the number of physical pins used in sensor system integration, and supports low-power, high-speed digital communication typically associated with UART and SPI interfaces, so that I3C becomes a single interface combining all the capabilities of the legacy interfaces. The project includes detailed study of I3C bus protocol and developing verification environment for the protocol. The test bench environment is written and verified using system Verilog and UVM. Tools used for verification are Icarus Verilog and GTK wave. The Universal Verification Methodology (UVM) is base class library built using System Verilog which provides the fundamental blocks needed to quickly develop reusable and well-constructed verification components and test environments.

DESIGN AND VERIFICATION OF SERIAL PERIPHERAL INTERFACE (SPI) PROTOCOL

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There are many communication protocols available both for short distance and long-distance communication. Universal Serial Bus (USB), Serial Advance Technology Attachment (SATA), ETHERNET are used for long distance communication. Serial Peripheral Interface (SPI), Inter Integrated Circuits -I^2C Protocols are used for short distance communications. SPI has high transmission speed compared to other protocols, and it is simple to use.SPI (Serial Peripheral Interface), is a synchronous protocol that allows serial communication between a master and a slave device and it was introduced by the company Motorola. SPI is most commonly used protocol for both intra-chip and inter-chip, and is used at low or medium speed of data-stream transfer. This project introduces about the SPI Interface Protocol with Single Master and Single Slave configuration. The SPI design will be verified and implemented by using System Verilog to show their coverage code and their functional correctness, the entire RTL will be written using Verilog for Synthesis and then the Verification architecture will be written using System Verilog.

DEEP LEARNING-BASED WORKERS SAFETY HELMET WEARING DETECTION ON CONSTRUCTION SITES USING MULTI-SCALE FEATURES

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Wearing safety helmets can effectively protect worker's safety on construction sites. However, workers often take off the helmets because of weak security-conscious and discomfort, then hidden dangers will be brought by this behavior. Workers without safety helmets will suffer more injuries in accidents such as falling human body and vertical falling matter. Hence, detecting safety helmet wearing is a vital step of construction sites safety management and a safety helmet detector with high speed and accuracy is urgently needed. However, traditional manual monitor is labour intensive and methods of installing sensors on safety helmet are difficult to popularize. Therefore, this paper proposes a deep learning-based method to detect safety helmet wearing at a satisfactory accuracy with high detection speed. Our method chooses YOLO v5 as the baseline, then the fourth detection scale is added to predict more bounding boxes for small objects and the attention mechanism is adopted in the backbone of the network to construct more informative features for following concatenation operations. In order to overcome the defects caused by insufficient data, targeted data augmentation and transfer learning are used. Improvements caused by every modification are discussed in this paper. Finally, our model achieves 92.2% mean average precision, up 6.3% compared to the original algorithm, and it only takes 3.0 MS to detect an image at 640×640. These results demonstrate the robustness and feasibility of our model. Meanwhile, the size of our trained model is only 16.3 m, which means the model is easy to be deployed. At last, after obtaining a satisfactory model, a graphical user interface (GUI) is designed to make our algorithm more user-friendly

SELF-CURING CONCRETE

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Curing of concrete is maintaining satisfactory moisture content in concrete during its early stages in order to develop the desired properties. However, good curing is not always practical and often neglected in many case. Several investigators asked the question whether there will be self-curing concrete. Therefore, the need to develop self-curing agents attracted several researchers. The aim of this investigation is to study the strength and durability properties of concrete using water-soluble polyethylene glycol as self- curing agent is to reduce the water evaporation from concrete, and hence the increase the water retention capacity of concrete compared to the conventionally cured concrete. The use of self-curing admixtures is very important from the point of view that saving of water is a necessity every day. In this study, compressive strength and split tensile strength of concrete containing self-curing agent is investigated and compared with those of conventionally cured concrete. It is found through this experiment al study that concrete cast with polyethene glycol as self- curing agent is stronger than that obtained by sprinkler curing as well as by immersion curing.

Keywords: Polyethene glycol, self-curing agent, compressive strength, split tensile strength.

HYDROGEN - THE FUTURE DEMAND

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Hydrogen the key element of periodic table and future. Hydrogen can be considered as a great replacement for fossil fuel, coal. It can be used as an energy source and also as fuel cells. There are various ways of producing hydrogen but the only problem is to produce hydrogen in such a way that it requires less energy consumption. Being a chemical engineer, we want to work on the production of hydrogen in anoptimized way. The main idea of our presentation is about the production of hydrogen in an eco-friendly way i.e. green hydrogen and also giving slight background information about how hydrogen can used as energy source and fuel cell.

Keywords: Hydrogen, production, optimization, fuel cell, energy source..

CREDIT CARD FRAUD DETECTION USING ADABOOST AND MAJORITY VOTING

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Credit card fraud is a serious problem in financial services. Huge money is lost due to credit card fraud every year. There is a lack of research studies on analyzing real-world credit card data owing to confidentiality issues. In this paper, machine learning algorithms are used to detect credit card fraud. Standard models are first used. Then, hybrid methods which use AdaBoost and majority voting methods are applied. To evaluate the model efficiency, a publicly available credit card data set is used. Then, a real-world credit card data set from a financial institution is analyzed. In addition, noise is added to the data samples to further assess the robustness of the algorithms. The experimental results positively indicate that the majority voting method achieves good accuracy rates in detecting fraud cases in credit cards.

A MACHINE LEARNING METHODOLOGY FOR DIAGNOSING CHRONIC KIDNEY DISEASE

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Chronic kidney disease (CKD) is a global health problem with high morbidity and mortality rate, and it induces other diseases. Since there are no obvious symptoms during the early stages of CKD, patients often fail to notice the disease. Early detection of CKD enables patients to receive timely treatment to ameliorate the progression

of this disease. Machine learning models can effectively aid clinicians achieve this goal due to their fast and accurate recognition performance. In this study, we propose a machine learning methodology for diagnosing CKD. The CKD data set was obtained from the University of California Irvine (UCI) machine learning repository, which has a large number of missing values. KNN imputation was used to fill in the missing values, which selects several complete samples with the most similar measurements to process the missing data for each incomplete sample. Missing values are usually seen in real-life medical situations because patients may miss some measurements for various reasons. After effectively filling out the incomplete data set, six machine learning algorithms (logistic regression, random forest, support vector machine, k-nearest neighbour, naive Bayes classifier and feed forward neural network) were used to establish models. Among these machine learning models, random forest achieved the best performance with 99.75% diagnosis accuracy. By analysing the misjudgements generated by the established models, we proposed an integrated model that combines logistic regression and random forest by using perceptron, which could achieve an average accuracy of 99.83% after ten times of simulation. Hence, we speculated that this methodology could be applicable to more complicated clinical data for disease diagnosis.

COMPARITIVE ASSESSMENT ON THE NUTRITIONAL COMPOSITION OF PLANT BASED MILK AND DIARY

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Concerns about environmental impact and sustainability, animal welfare, and personal health issues have fuelled consumer demand for dairy alternatives. In the recent years, there has been an expansion of milk alternative beverages originating from plant-based sources including soy, oat, hemp, coconut, rice, and nuts, referred to as milk. This review is focused on comparing nutrient composition of milk and plant-based milk alternatives, as well as discussing considerations relevant to consumption of plant-based milk alternatives. Using the studies reported by various researchers across the globe, the present work gives comparative assessment of the plant-based milk and the derived beverages with the conventional animal-based bovine milk, in terms of the macro-nutrient composition, calcium content, protein content and the level of vitamins and minerals. Researchers stated that plant-based milk alternatives often present inferior nutritional substitutes of bovine milk. On average, the plant-based beverages generally scored well in terms of not containing high levels of sodium, saturated fat, or calories. Over half of the beverages were fortified with calcium to levels equal to or greater than that of dairy milk. The protein content varied from 0 to 10 g/ serving. Levels of vitamin D and B12 fortification were quite low. Consumers should be informed of the nutritional profile and potential health benefits of plant-based dairy alternatives as the nutritional content can vary greatly between the different types of beverages.

Keywords: calcium; fortification; nutrient composition; plant-based milks; plant-based non-dairy beverages; protein; sugar; vitamin B12; vitamin D.

DESIGN AND VERIFICATION OF DDR SDRAM MEMORY CONTROLLER USING SYSTEM VERILOG FOR HIGHER COVERAGE

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In present electronic systems, DDR SDRAM (Double Data Rate Synchronous Dynamic Random-Access Memory) is a next level advanced version of regular SDRAM, and it was developed with advanced key features such as effective use of memory bandwidth and its capability to transact data on both edges of clock cycles. DDR SDRAM is widely used in computer applications like laptops, DSP processing systems and networking. Cost and speed are the two important factors in designing memories like DDR SDRAM which will meet the standards in the field of DSP applications. Because of its high speed, burst access and pipeline feature DDR SDRAM becomes more popular.

The main basic operations of DDR SDRAM controller are very much common to that of SDR SDRAM controller and they differ only in their circuit design. The DDR SDRAM controller makes many low-level tasks invisible to the user like refresh, initialization and timings. DDR SDRAM also designed with objective of using proper commands like Read/Write accesses, proper active and pre-charge command etc. In this proposed work DDR SDRAM controller will be designed using Verilog HDL and Verification is carried out using System Verilog. Functional coverage of 100% is achieved by applying randomized test cases.

AN ANDROID MALWARE DETECTION SYSTEM

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In recent years, Smartphone's and tablets have been integrated into every aspect of people's lives. The advanced mobile technologies have made tremendous growth in mobile devices. The mobile device has many functions, such as browsing the Internet, making payments, taking a photo and sharing it. Mobile device is only a small part of the Internet of Things (IoT) device. According to Ericsson report 2019, with mobile systems acting as a backbone for both the mobile phone and Internet of Things (IoT). The number of mobile subscriptions grew at 2 percent year-on-year and currently totals around 7.9 billion and 80 percent of traffic will be generated by mobile networks.

Though various mobile APPs make our life more convenient, it also brings enormous burden to the mobile and IoT security protection. According to the G DATA report in 2017, security experts discovered about 750,000 new Android malware during the first quarter of 2017. It is shown that a large number of mobile APPs carried out malicious code and spread to execute various cybercrimes on mobile devices. Android become the most targeted system by mobile malware not only because of its large market share and open source ecosystem of development, but also because Android operating system allows users to download APPs from third-party markets, and these APPs may include malicious or suspicious applications which seduce users to open its permissions to the APP if they want to use it. Malware is becoming more obscure and harder to eliminate. Consequently, how to protect Android devices from malicious APPs is of vital importance.

Because of the characteristic of openness and flexibility, Android has become the most popular mobile platform. However, it has also become the most targeted system by mobile malware. It is necessary for the users to have a fast

and reliable detection method. In this project, a two-layer method is proposed to detect malware in Android APPs. The first layer is permission, intent and component information based static malware detection model. It combines the static features with fully connected neural network to detect the malware and test its effectiveness through experiment, and the outcome of the 1st layer will be the input to the second layer with a method CACNN which cascades CNN and AutoEncoder, is used to detect malware through network traffic features of APPs

MY BUS - SMART BUS TRANSPORTATION SYSTEM FOR PANDEMIC SITUATION

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IN MY BUS the passengers can book the ticket through Android Application in advance by analyzing the availability of the seats in the bus. o The passengers can book the available seats in the bus through Android App after checking the seat availability and cash payment process. After booking the seat, the message will be sent to

registered mobile number and an online ticket will be generated and it will be stored in Application itself. The passengers can also check the location of the bus using the Android App. In order to monitor the health of the passengers entering into the bus, IR temperature sensor is used which is used to monitor the temperature of the travelers. If the temperature of the travelers exceeds threshold limit, Raspberry-Pi alerts the bus in charge using an alarm. By introducing this sensor, safety of the passengers is ensured. An SMS will be sent to the passenger exactly 10 minutes before the passenger pick-up point to remind about the current location of the bus. In this project, we are proposing QR reader for bus ticket. Users can scan QR reader.

SYNTHESIS AND CHARACTERIZATION OF BIO- LUBRICANTS FROM VEGITABLE OILS

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In response to the increasing environmental pollution concern and depleting petroleum resverves,bio-based lubricants have received a great deal of interest as a substitute for mineral oil based lubricants. Biolubricants have a number of advantages over mineral lubricants ,including the high biodegradability,lowtoxicity,excellent lubrication performance,and minimal impact on human health/environment.This paper reviewed the most recent advancements in the synthesis of biolubricants from vegitable oils through chemical modification methods such as esterification,transesterification,estolide formation and epoxidation of vegitableoils.From the application point of view vegitable oils have viscosity indices,thermalstability,high flash and fire points and low coefficient of friction.
Keywords: Biolubricants, biodegradability, toxicity,modification,esterification, estolide, epoxidation

LOGIC SYNTHESIS USING FRONT END DESIGN FLOW AND IMPROVE CORRELATION WITH PLACEMENT AND ROUTE

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High performance circuit design is becoming increasingly important in VLSI design. The most important problem faced in the design of these circuits is to meet a certain performance level. The growing complexity of devices to be designed and manufactured and the need to reduce the time to-market, stress the importance of sound design methodologies. In this framework formal synthesis has the advantage of increasing the quality of the design.

In this project, A given RTL block is synthesized and is checked for logic equivalence at various stages with main intention being to maintain proper correlation between synthesis and Placement and Route stages with good QOR(Quality of results).

COMPARING THE RANCIDITY AND SATURATED FAT LEVELS BETWEEN THE COLD-PRESSED AND REFINED GROUNDNUT AND SESAME OILS

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Health is the most precious treasure in one's life. To have good health, we need to eat healthy food. Most of the foods that we eat are dependent on oil/fat. Edible oils are a good source of essential fatty acids for our body and provide energy, regulate our body temperature, etc. These are extracted naturally by pressing it, without the use of any heat or chemicals, and are called cold-pressed oils or by use of heat and chemicals, which need to be refined, hence these oils are called refined oils. These oils are used for cooking purposes like baking, frying, or food preservations. During the storage of oil/fat, they become rancid due to the formation of peroxide at the double bonds, by the atmospheric oxygen, and by hydrolysis of microorganisms, which results in the liberation of free fatty acids. It is an indication of the age and quality of the oil/fat. But now the question is which oils are good for health either cold-pressed or refined oils. It can be determined by the acid value or also known as neutralization number.

The Acid value is the amount of potassium hydroxide (KOH) in milligrams required to neutralize the free fatty acids, present in one gram of oil/fat. If a particular oil is having a lower acid value that indicates that its age is low and is having high quality, which is good for our health. It can be determined by titrating the oil/fat in an alcoholic medium against standard potassium hydroxide solution and by using the phenolphthalein as a pH indicator. It was observed that the acid value for the cold-pressed oils is lower than that of the refined oils which means that these are good oils and are having less rancidity.

Keywords: Cold-pressed oils, refined oils,free fatty acids,acid value,rancid.

DESIGN AND ANALYSIS OF FREQUENCY RECONFIGURABLE ANTENNA FOR COGNITIVE RADIO APPLICATIONS

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Nowadays, ultra-wide band antennas gain a lot of attention as it is an alternative to a number of narrow band antennas for a variety of applications. Whereas reconfigurable antennas allow themselves to reconfigure in terms of frequency, polarization, or pattern to perform a multitude of functions. This project attempts to design an ultra-wide band rectangular patch antenna for sensing the spectrum. The same design has also been used as a frequency reconfigurable antenna for narrow band coverage within the ultra-wide band. The frequency reconfiguration could be realized using the various switching configurations of a few parasitic elements associated with the antenna. This antenna structure provides an operable range of frequencies from 3.14 to 10.6 GHz that makes the antenna suitable for ultra-wide band and cognitive radio front end applications. The tool used for simulating the design is Ansoft High Frequency Structure Simulator (HFSS) software.

ANTIMICROBIAL PROPERTY OF COW URINE

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Cow is treated as mother (Gowmatha) in Indian tradition and her urine is an elixir for numerous diseases. Many Ayurveda scriptures describe the beneficial effects of cow's urine. Cow urine as such has been most widely consumed animal urine owing to its immense therapeutic nature. Cow urine is also known to aid in maintaining homeostasis, purification of toxins in our body, immunity boosting, restoring of renal functions, relieving pain during cancer treatment. Cow urine finds its use in treatment of eczema, migraine, diabetes, blood pressure, gynaecological problems, asthma, psoriasis, thyroid, heart attack, blockage in arteries, fits, AIDS, piles, reactive arthritis, ulcer, acidity, and constipation. Cow urine exhibits antibacterial, antifungal and antioxidant properties. In this study certain procedures have been performed to study the antibacterial efficacy of cow urine against selected species of bacteria using optical density measurement of bacterial growth and agar well diffusion assay. Decrease of optical density values indicating reduction in number of bacterial biomass and observance of inhibition zones by agar well diffusion assay showcases the antibacterial activity of cow urine. The cell structure of the bacteria, before and after treatment of bacterial culture with cow urine, was also studied. This helps in understanding the site of the cell that is affected due to cow urine. The results were plotted in the tables and graphically represented.

Keywords: cow urine, antimicrobial activity, diffusion, bacterial growth, inhibition zone, optical density.

MICROALGAL-BASED BIOREFINERY FOR THE TREATMENT OF TEXTILE DYEING EFFLUENTS: A REVIEW

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The progressive growth in population has led to rapid expansion of industries, textile industry being one of the most predominant ones. The production of pigments and dyes in this industry can be highly toxic harming both the environment and the water which they are usually discharged into. Due to the inclusion of these numerous recalcitrant dyes, textile wastewaters are one of the most significant causes of pollution in the environment. Since the concentration of these dyes varies, the physico-chemical treatment may not always provide the most optimum results and the byproducts formed may often generate hazardous effects on the ecosystem. However, the creation of microalgal biorefinery system can possibly help combat this challenge. In such a system, the dyes in the effluent are remediated by biodegradation or biosorption during microalgae culture where the decolorization of the dye takes place either by adsorption on the microbial biomass or biodegradation by the cells. As a result, treating textile effluents with microalgae decreases the color and nutrient load, reducing the multiple negative environmental effects produced by its release into the natural environment. Furthermore, as compared to traditional treatment methods, using microalgae for textile effluent bioremediation has the added benefit of producing valuable biomass that may be converted into a wide variety of value added products such as biofuels.

PERFORMANCE ANALYSIS OF REED SOLOMON CODED MIMO NOMA SYSTEM

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MIMO-NOMA combines Multiple-Input Multiple-Output (MIMO) and Non-Orthogonal Multiple Access (NOMA), which can address heterogeneous challenges, such as massive connectivity, low latency, and high reliability. In this paper, a practical coded MIMO-NOMA system with capacity-approaching performance as well as low implementation complexity is proposed. Specifically, the employed receiver consists of a multi-user Reed Solomon coding (RS coding) detector and a bank of single-user message-passing decoders, An asymptotic extrinsic information transfer analysis is proposed to estimate the performance of the iterative receiver, where practical channel codes that match with the Reed Solomon coded detector in the iterative decoding perspective are constructed. As a result, the proposed coded MIMO-NOMA system achieves asymptotic performances from the theoretical capacity. Simulation results validate the reliability and robustness of the proposed system in practical settings, including various system loads, iteration numbers, code lengths and channel conditions.

Keywords: MIMO-NOMA, Reed Solomon coding, Spectral efficiency, Coding Gain

BIOMATERIAL APPLICATIONS OF POLYVINYL ALCHOLS

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Polyvinyl alcohols are synthetic, hydrophilic polymers. They are non-toxic, colorless, odorless, and biodegradable. Polyvinyl alcohols are synthesized by hydrolysis of poly vinyl acetates. Poly vinyl alcohol grade and molecular weight depend on the degree of hydrolysis. By crosslinking the linear polymers, nearly fully hydrolyzed forms produce poly vinyl alcohol hydrogels with tunable properties that result in formation of sol and gel species. Materials with a low polymer content are soft as fluids move freely through the matrix, whereas materials with a higher polymer content are much stiffer and stronger. Poly vinyl alcohol polymer degrades under aerobic conditions found in composts or anaerobic conditions in landfills. The degradability of the polymer depends on the presence of hydroxyl groups. The polymer is often blended with other natural and synthetic polymers in order to achieve blends having better hydrophilic and mechanical properties needed for wide variety of applications. The thermoplastic polymer is safe for living tissues, as it is nontoxic and benign. Due to these reasons, the polymer is used in biological applications like cartilage replacements, contact lenses, surgical threads or sutures, eye drops, films, oil resistant compounds, adhesives, and nanocomposites for drug delivery.

Keywords: Vinyl acetates, Polyvinyl alcohols, hydrophilic, vinyl acetates, biodegradable, biomaterial applications.

EXTRACTION AND ANALYSIS OF LIMONENE ACID FROM ORANGE PEELS

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Oranges are some of the most commonly utilized fruits in the world due to its pleasant taste and nutritional values. Because of the huge consumption of orange juice throughout the world, a large amount of wet solid waste is produced. This waste mainly includes orange peels. Citrus oil is an essential oil present within the rind of wall of a citrus fruit. In the present investigation orange peels is used for the extraction of citrus oil. After extraction of juice, the orange peels are treated as waste and lead to environmental pollution due to improper disposal can be used for the extraction of citrus oil. Collection of orange peels from orange fruits, The peels are weighed and take 200gm to the round bottom flask, And take 400 ml of distilled water and add to the round bottomed flask, And the mixture is distilled by steam distillation for the recovery of limonene ,Collect the 50% of condensate in a beaker, And a thin layer is formed in the surface of a condensate ,It is separated by using separating funnel, Physical and chemical properties of an acid is tested these steps include in the extraction of limonene acid

Keywords: limonene acid, distillation, citrus oil, extraction

CLUSTERED REGULARLY INTERSPACED SHORT PALINDROMIC REPEATS IN GENOME EDITING AND BEYOND

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Clustered Regularly Interspaced Short Palindromic Repeats popularly called as CRISPR Technology, used to edit genes. CRISPR simply finds a specific bit of DNA inside a cell and alter that piece of DNA. CRISPR has also adapted to do other things, such as turning genes ON or OFF without altering their sequence. Before the unveiling of CRISPR in 2012, the gene editing ways used to edit genes took years and cost hundreds of thousands of dollars. CRISPR has made it cheap and easy. CRIPSR is already widely used for scientific research, many of the plants and animals in our farms, gardens or homes may have been altered with CRISPR. Even some people are eating CRISPRed food. CRISPR technology has potential to transform medicine, enabling us to not only treat but also prevent many diseases. We can even use CRISPR to change the genomes of our children. An attempt to do this in China has convicted as pre-mature and unethical, but some people think it could benefit children in the future. CRISPR is used for other purposes like fingerprinting cells and directing evolution and creating gene drives. Cas9 protein plays a key role in CRIPSR technology found in bacteria, where they help defend against viruses. This protein can be easily programmed to find and bind to almost any desired target sequence, simply by giving it a piece of RNA to guide it in its search.

Keywords: Clustered Regularly Interspaced Short Palindromic Repeats, CRISPR, DNA, RNA, genome editing, Cas9 protein

LIGNIN EXTRACTION FROM COCONUT COIR

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Coconut coir is a natural fiber which is a bio waste and it is used in several industries for different purposes. It is a raw material for almost all chemical industries. Coir has a very good amount of lignin present in it which can be profitably extracted. Recently lignin has been the object of a renewed interest because of the need to use raw materials from the renewable resources. One such resource is coconut coir for lignin extraction. For this process of lignin extraction alkali treatment of the raw material is done and then lignin is isolated with an acidic medium. The delignification process is carried out using NaOH of 25% concentration for digestion of the coir for about 2 hours of time at a temperature of 80-90^{o}C. lignin isolation is followed by using H2SO4 solution of 20% concentration followed by dilution, filtration and drying of the filtrate. At the end we obtain lignin in its power form. Keywords: Alkali Delignification, Coconut Coir, Lignin, Lignin Analysis.

A REVIEW ON RECENT RESEARCH IN APPLICATIONS OF CARBOXYMETHYL CELLULOSE

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Carboxymethyl cellulose (CMC) is an ether derivative of cellulose, which is a non-toxic, hydrophilic, and film-forming polysaccharide. In recent years, CMC has been paid much attention by researchers around the globe. CMC is broadly employed in various industries like construction, detergent, ceramic, food, pharmaceutical, textile, paper, leather, cosmetic, and paint industries due to its hydrophilicity, gelation, bio-adhesion, and pH-sensitivity properties. CMC acts as a stabilizer, thickener, and suspending agent in ice creams, shampoo, lotions, creams, oil paints, soaps, detergents, and dairy products. Since CMC cannot be digested in the human body and is FDA approved polymer, it is used as excipients in tablets to release the drug in a controlled manner. With the presence of two functional groups like carboxyl and hydroxyl in CMC, the water binding ability of CMC is greater than 100 g of water per g of CMC. This makes CMC a potential material in various industries. In the last two decades, hydrogels based on CMC materials have been found wide applications in the medicine, cosmetic, food, and pharmaceutical industries. This review summarizes the recent research on CMC and its applications. Also, this review covers the present challenges in CMC and future applications of CMC-based materials.

Keywords: Carboxymethyl cellulose, Polymer, Thickener, Medicine, Hydrogel

A REVIEW ON HYALURONIC ACID FOR TREATMENT OFOSTEOARTHRITIS

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The polysaccharide hyaluronic acid (HA) is found in the extracellular matrix of vertebrate epithelial, neural, and connective tissues. HA has become an important component of major pharmaceutical, biomedical, and cosmetic products with high commercial value worldwide due to its high moisture retention, biocompatibility, and viscoelasticity properties. Lubrication plays a major role in the proper operation of devices and tissues with moving surfaces such as articulating joints, ocular surfaces, and the lungs. Failure in lubrication causes increased friction and system degeneration. Osteoarthritis, a type of arthritis, is one such prevalent skeletal system degeneration. It occurs due to wear down of flexible tissue at the ends of bones. Millions of people have been affected by this disorder. Conventional treatment of osteoarthritis is being injected with corticosteroid or cortisone hormone injections. They are injected directly into a single joint and can reduce inflammation and pain. However, while the effect may last for several months, repeated injections increases cartilage loss. On the other hand, tissue surfaces treated with the HA-binding system exhibit higher lubricity values and are capable of retaining HA in the articular joint and binding to ocular tissue surfaces. In this review, a summary of recent research on HA and its applications in osteology is presented. It also covers the current challenges in HA treatment of osteoarthritis and its future applications on various other tissue-lubricating dysfunctions. Keywords: Hyaluronic Acid, Osteoarthritis, Lubrication, Corticosteroid injections.

EFFECTIVE MANAGEMENT OF CONSTRUCTION SUPPLY CHAIN

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Supply chain management (SCM) is a concept that has flourished in production, originating from Just-In-Time (JIT) logistics. Today, supply chain management represents an autonomous managerial concept, although still largely dominated by logistics. All issues are viewed and resolved in a supply chain perspective, as the model is highly interdependent. Construction supply chains are highly plagued with excessive waste production and logistical problems caused by myopic control. The construction supply chain plays a major role in the construction market competition. Construction supply chain management assists enterprises attempting to improve competitiveness, increase profits and have more control over the different factors and variables within the project. This paper discusses the construction supply chain characteristics, challenges and problems supply chains encounter and the benefits of an integrated supply chain in the construction sector. The practical solutions offered, however, have to be developed in the construction mechanism itself, taking into account the specific characteristics and local conditions of construction supply chains.

EFFECT OF MEDICAL MUSHROOM EXTRACTS FROM VARIOUS GROWTH STAGES AS AN ANTI-NEURO INFLAMMATORY PROPERTY USING ANIMAL MODELS

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Alzheimer's disease (AD) is a neurodegenerative disorder that causes the brain cells to die and is a significant cause of dementia demonstrated by severe and progressive cognitive impairment. It has been affecting more than 25 million people around the world and is considered as 5th most leading cause of death in people aged more than 65 years. Deposition of amyloid- beta plaques on brain cell receptors causes synaptic neuronal death and leads to formation of neurofibrillary tangles, whose deposition leads to neuroinflammation which is a main symptom in AD. Non-steroidal anti- inflammatory drugs have been used in AD patients, which left with adverse outcomes and mixed results. Medical mushrooms are gaining considerable importance in health care, due to their ability to prevent diseases with their bioactive components. *Hericiumerinaceus (HE)* commonly known as lion's mane mushroom is an edible mushroom and used as a culinary mushroom in AD. *Hericiumerinaceus* has anti-neuroinflammatory properties which can be used to reduce symptoms of diseases like Parkinson disease, Alzheimer's disease. The mushroom as well as the fermented mycelia have been reported to produce several classes of bioactive molecules, including polysaccharides, proteins, lectins, phenols, and terpenoids. All of the investigated compounds were present in the *H. erinaceusmycelium* in higher quantity than in the mushroom's fruiting bodies. The aim of the studies was to determine the effect of mushroom cultivated on sawdust substrate and submerged liquid culture for mycelia on delaying/prevention from onset of AD. The extracted components are tested on mouse models. The mice are injected with lipopolysaccharides to cause inflammation in neurons and then injected with extracts of mushroom to test the anti-neuroinflammatory activities. The anti-neuroinflammatory activities can be diagnosed using ELISA, western blotting, PK/PD blood collections, biochemical analysis, chemokine analysis.

Keywords: HericiumErinaceus, Alzheimer's disease, Mice models, Anti-neuroinflammatory properties, ELISA, Biochemical analysis

PRODUCTION OF ETHANOL FROM DIFFERENT MILK DIARY WASTES BY FERMENTATION

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Fermentation process utilizes micro-biology in the production of chemical compounds. These processes yield simple structural chemicals. Fermentation processes are also used for production of complex organic chemicals such as medicinal, antibiotics and for chemicals of more complex structure, such as critic and lactic acids derive from low-cost carbohydrate sources. As fermentation leads to a yield of structural chemicals we developed an idea on production of alcohol from waste by fermentation with the help of urea and yeast which leaded to the production of grain alcohol. This contains around 6 % of sucrose concentration. It is adjusted to a pH of 4-5 to support yeast growth which furnishesinvertase-zymase catalytic enzymes. Nutrients such as urea are added when lacking in whey. This diluted mixture, called mash, is transferred into cans and kept for observation for cultivation of yeast. The temperature is kept around 20 to 30?C and over a period of 30 - 70 hours rising near the end to 35^0C.After 72 hours we can observe the release of Carbon Dioxide (CO2). The fermented mixture is transferred into around bottom flask and performs Simple Distillation for the recovery of product ethanol. Keywords: Ethanol, Fermentation, Concentration, Distillation, Recovery International Congress on Computational.

DETECTION OF CYBER ATTACKS IN MICROGRIDS FOR WIRELESS SENSOR NETWORKS

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An accurate secured framework is used to detect and stop data integrity attacks in wireless sensors networks in microgrids. To this end, an intelligent anomaly detection method based on prediction intervals is introduced to distinguish malicious attacks with different severities during a secured operation. The proposed anomaly detection method is constructed based on the lower and upper bound estimation (LUBE) method to provide optimal feasible prediction intervals over the smart meter readings at electric consumers. It also makes use of the combinatorial concept of prediction intervals to solve the instability issues arising from the neural networks. Due to the high complexity and oscillatory nature of the electric consumers data, a new modified optimization algorithm based on symbiotic organisms search (SOS) is developed to adjust the NN parameters. The high accuracy and satisfying performance of the proposed model are assessed on the practical data of a residential microgrid.

PREPARATION AND CHARACTERIZATION OF CITRIC ACID CROSSLINKED HYDROGEL FILMS CONTAINING CARBOXYMETHYL CELLULOSE AND SOY PROTEIN ISOLATE FOR POTENTIAL APPLICATION IN TREATMENT OF WOUND HEALING.

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A wound is an injury such as skin cut or skin burn, which occurs due to physical or thermal damage. To treat wounds, the most common treatments have been used such as ointments or bandages, but the problem with these treatments is that they lead to skin inflammation and pain and do not have all the required properties for healing the wounds fast. An effective wound dressing material should possess the exudate absorption capacity, antibacterial and antioxidant properties with good mechanical strength in the swollen state. Therefore, in this study, we developed hydrogel films using carboxymethyl cellulose (CMC), citric acid, soy protein isolate (SPI), and grapefruit seed extract (GFSE) liquid. The developed hydrogel films were not dissolved in water but swelled in phosphate buffer (pH 6.8) and citrate buffer (pH 3.0) due to citric acid crosslinking between CMC and SPI. Furthermore, the fabricated hydrogel films were antibacterial and released the polyphenolic components in a sustained manner for prolonged periods. The released polyphenolic components can significantly reduce the oxidative damage in the wound site and thus can accelerate the wound healing process. Based on our preliminary results that the fabricated films can be used for wound healing applications in near future.

Keywords: Wound healing, Hydrogel, carboxymethyl cellulose, Citric acid, Soy protein isolate

CAMPTOTHECIN: PAST, PRESENT AND FUTURE

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Camptothecin (CPT)- Topoisomerase I impediments are a new class of anticancer agents with a medium of action aimed at interposing DNA replication in cancer cells, the result of which is cell death. Utmost if not all Topoisomerase I impediments are derivatives of the plant extract camptothecin. Topoisomerase impediments block the ligation step of the cell cycle, which generates DNA single-and double-beachfront breaks, leading to apoptotic cell death. Research studies have allowed for the development of more potent CPT analogues topotecan and irinotecan. Fresh studies are demanded to understand the relationship between substituents and resistance, its clinical connection and the impact of combined gene polymorphism. One of the bottommost exploration approaches focuses on modifying the delivery mode to meliorate tumour cell uptake and reduce bane. They considerably inhibit the nuclear enzyme DNA topoisomerase, type I and retain antitumor exertion. They're potent topoisomerase impediments that intrude with the essential function of topoisomerase in DNA replication. Clinical interest in the CPTs is in large part rested on their unique mode of action these agents turn topoisomerase I (TOP-I), an enzyme that alleviates the torsional stress of supercoiled DNA, into an intracellular bane. preclinical and clinical exploration easily indicate that the combination of medicinal chemical and medicine delivery approaches has been largely important in perfecting the remedial indicator of CPT- rested curatives.

Keywords: Camptothecin, Topoisomerase, Polymorphism.

MANUFACTURING OF FLYING HOVERBOARD/HUMAN DRONE WITHFUEL CELL

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Hover Board is one that can float in air and move around by carrying upto 120 kgs in air (weight depends upon number of motors/propellers we use). Hover board is a levitating board used for personal transportation, Since it was first described in science-fiction, many attempts have been made to invent a functioning hoverboard but none have demonstrated. Hover Board used to fly with propellers which is connected to a motor then motor connected to electronic speed controller which having connection with Fuel Cell, every Propellers fallows same connections with Fuel cell. In ordered to fly a human, needed 8 Dc motors, Propellers, ESC, Fuel Cell, Transmitter, Receiver and mother board. It reduces time, pollution, minimize accidents, emergency service & Disaster Recovery and Zero Emission Device. Keywords: Flying Hover Board, Human Drone, Octa copter, self-levitating board.

ARTIFICIAL RBC USING NANOTECHNOLOGY

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Nanotechnology marks a drastically different approach in manufacturing. Instead of sealing materials down to create something, nanotechnology produces things by building then up piece by piece on a molecular level by providing broad scope. Now, In medical field we deal in detail about nanotechnologies potential in developing artificial red blood cells design of artificial RBC and their efficiency compared to normal RBC working of the developed artificial RBC their use in the medical field. The application is to provide metabolic support in the event of impaired circulation.. Machines could be produced, down to the size of viruses, which would work at incredible speeds. The original artificial red blood cells have evolved into oxygen carriers in the form of polyhemoglobin and conjugated hemoglobin. Clinical conditions requiring only oxygen carriers are responding well to these types of oxygen carriers without the need for a complete artificial red blood cell. For those conditions requiring more than just oxygen carriers, new generations of polyhemoglobin containing antioxidant enzymes are being developed. Though a complete artificial red blood cell comparable to red blood cell is still a dream, development in lipid membrane artificial red blood cells and biodegradable polymeric nano artificial red blood cells are steps towards this possibility. The many years of neglect on basic research in the area of blood substitutes have resulted in the lack of important basic knowledge needed for the rapid development of blood substitutes suitable for clinical use. This is further hampered by the mistaken conception that blood substitute is a single entity. We need to look at blood substitutes as consisting of progressively more complicated entities, e.g. oxygen carriers, oxygen carriers with antioxidant activity, and complete red blood cell substitutes. Each of these entities is not applicable to all clinical conditions, but is suitable for specific applications

Keywords: Artificial RBC, Nano technology, Controlled release of oxygen, diamonded pressure tank, nanobots.

CONUNDRUM OF MICROCHIMERISM: FEAR OR HOPE

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Small ratio of genetically distinct cells harboured in an individual without evident rejection is referred to as Microchimerism. Artificial methods of Microchimerism include iatrogenesis, transplantations and blood transfusion while normal pregnancy is the natural cause for Microchimerism. Long term consequences of both fetal and maternal microchimerism persists for decades offering insights for preeclampsia as well as has detrimental role in various autoimmune diseases and a potential function of fetal microchimerism might be in the surveillance for malignant cells, for it is now the current subject of interest as it is conjecture that these microchimeric cells are purposefully retained within mothers and their offspring to promote genetic fitness but its role in normal health remains undefined. Convergent evidence has been examined in cancer epidemiology and transplantation biology that suggests a new paradigm in which fetal microchimerism serves as an additional line of defence against the development of breast cancer in parous women. Studies of this phenomenon have provided a novel perspective on a diverse range of diseases. Fetal microchimeric cells are now increasingly being recognized and analysed for their healing, reparative, and perhaps regenerative roles.

Keywords: Microchimerism; iatrogenic; preeclampsia.

FACIAL EXPRESSION RECOGNITION USINGCNN/YOLO

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Now-a-days with the continued development of artificial intelligence facial emotion recognition has become more popular. The emotion recognition plays a major role in interaction technology. In interaction technology the verbal components only play a one third of communication and the non-verbal components plays a two third of communication. Facial emotion recognition (FER) method is used for detecting facial expressions. Facial expression plays a major role in expressing what a person feels and it expresses inner feeling and his or her mental situation or human perspective. The aim is to identify basic human emotions. The facial emotions such as happy, sad, angry, fear, surprised, neutral emotions are considered as basic emotions. Here along with convolution neural network (CNN) we propose a real time facial emotion recognition system based on You Look Only Once (YOLO) architecture. The Yolo architecture is a real time object detection system. Here it used for identify and detect faces in real time. These images are captured by using anchor boxes for accuracy. It provides significant, accurate object detection and extracts high-level features that help to achieve tremendous performance to classify the image and detecting emotion.

AN OVERVIEW OF SNPs AND METHODOLOGIES USED FOR THEIR DETECTION

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Knowledge about genetic and genomic diversity has grown at a near exponential rate in recent years because many genomes are being sequenced and there are related breakthroughs and economies of scale in sequencing and genotyping technology. Parallel to these advancements, gene discovery for monogenic and complicated disorders has accelerated, and bioinformatics databases and software for collecting and analyzing genetic data have grown in number, size, and scope. Most genetic studies and databases currently use single nucleotide polymorphisms (SNPs), the most common type of genetic variation. SNPs are genomic sequence polymorphisms caused by single nucleotide variation, such as single-base deletion, insertion, transition, and transversion. SNPs are categorized into three groups based on their location in the genome: gene coding SNPs (cSNPs), intergenic SNPs (iSNPs), and perigenic SNPs (pSNPs). cSNPs play an important role in the development of hereditary disorders. Based on whether they have modified the deduced amino acid sequence or not, cSNPs are further separated into synonymous and non-synonymous SNPs. Many new techniques are being explored to detect SNPs. These include first-generation sequencing, third-generation sequencing, next-generation sequencing, DNA microarray, etc. This paper deals with SNPs, their importance, and methodologies used for their detection.

Keywords: First-generation sequencing, Genetic variations, Next-generation sequencing, Single

ACTINOBACTERIA: - IT'S APPLICATIONS AND FUTURE PROSPECTS

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The large taxonomic group under domain Bacteria is Actinobacteria, which may be found around the world. They're common in soil, have extensively researched for many applications. This phylum can thrive in a variety of climatic settings. In recent years, this adaptable group of bacteria piqued scientific interest because it has opened up new possibilities for novel metabolites that could help solve some of the world's most pressing problems, such as novel drugs for drug-resistant human pathogens, affordable ways to maintain ecological balance in various habitats, and alternative agricultural practises. Actinobacteria create nearly 10,000 bioactive metabolites, contributing for 45 percent of all bioactive bioactive molecules identified. This population will always be compelling topic of inquiry for researchers, pharmaceutical companies, and several others because of its high biotechnological applications. They're proven to develop huge variety of chemically varied bioactive chemicals, including antibiotics, anticancer, and anti-infection agents, and therefore open new avenues for medication development. We hope to demonstrate the richness of actinobacteria and their diverse involvement in biotechnology applications in this review. They have key roles in organic matter cycling, preventing the spread of plant diseases in the rhizosphere, and digesting complex polymer combinations in dead plant, and fungal material, resulting in the creation of several extracellular enzymes that promote crop development.

Keywords: Novel drugs, Drug resistant, Bioactive chemicals, Antibiotics ,Rhizophore

GENERATION OF SPOOFED SIGNAL AND ITS DETECTION USING MACHINE LEARNING FOR GNSS APPLICATIONS

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With the enormous advancements in the development of cost-effective software Defined Radio technology, spoofing attacks on GNSS aided systems has become a major threat. Drone is one such system which will be more affected by hacking technologies such as meaconing, spoofing, and jamming. These technologies alter the trajectory of the drones without getting noticed by the user. It is possible to spoof Drones by transmitting spoofed GPS signal in a pre-defined way. Spoofing is relatively more dangerous than intentional jamming because the target receiver is unaware of the threat and so cannot warn user in advance that its position estimation is unreliable, which will provide spoofed location or navigation solutions that appear to be reliable. In this research, a simplistic spoofing attack algorithm to counterfeit a Global Positioning System (GPS) signal is developed. To achieve this, initially spoofed GPS I/Q data (IF data) is generated by using a GPS simulator and fed to the Software Defined Radio (SDR) device which converts the I/Q data to RF output. By varying the spoofed locations as well as the delays, several spoofed signals are generated. To detect such spoofing attacks, Machine Learning (ML) algorithm to distinguish between the legitimate GPS signal and the spoofed signal is under development. In the proposed model several sensors will be employed to detect signals, and ML algorithm provides light-weight architecture in Drones. This ML model is used to classify the spoofed and authentic signals received. In this method, couple of GPS signal characteristics are extracted as features. Based on the feature specifications, the proposed model detects whether the signal is counterfeit or a legitimate entity. Furthermore, many machine learning algorithms will be assessed to improve the accuracy of the detection of spoofed signal.

A BRIEF REVIEW OF THE PRODUCTION METHODS OF SORBITOL

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Sorbitol (C6H1406) is a white, hygroscopic, crystalline powder. It melts at 97°C and has excellent pH and heat stability in food processing. Applications of sorbitol are as a sweetener and as a humectant in Cough syrups.The current commercial production method is Hydrogenation via Rankey Nickel Catalyst, Sorbitol Production can also happen with the bacterium Zymomonasmobilis which is able to produce sorbitol and gluconic acid from fructose and glucose. There are various research opportunities for the production of sorbitol such as Genetic Engineering of strains of Z. mobilis, High density lignocellulosic biomass

Keywords: : Sorbitol, Biotechnology, Hydrogenation, Zymomonasmobilis, Rankey nickel catalyst

MULTILATERATION WITH MACHINE LEARNING FOR AIRCRAFT POSITIONING AND

TRAJECTORY PREDICTION

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Localization of aircraft is important to control air traffic safely and effectively. Automatic Dependent Surveillance Broadcast (ADS-B) is an advanced localization technique in which aircraft reports its location to Air Traffic Control (ATC). This brings several safety and security issues. To determine the location of the aircraft which do not have position reporting capabilities or fail to report their location or may report wrong locations, complementary localization methods that are independent of the aircraft are needed. The aim of this work is to localize aircraft (estimate the longitude, latitude, and altitude of an aircraft) based on Multilateration technique. Time Difference of Arrival(TDoA), a well-established technique for the geolocation of RF emitters is usually employed in Multilateration. Using three or more receivers, TDoA algorithm locates a signal source from the different arrival times at the receivers. As aircraft is monitored continuously, large data is generated and is used to train and test a Machine Learning algorithm such as K-Nearest Neighbor (KNN) to predict the aircraft location along its trajectory. This helps ATC to know where an aircraft will be at significant points along its trajectory. The Federal Aviation Administration (FAA) is transforming ATC systems capability from knowing where an aircraft is to one that will predict where an aircraft will be at significant points along its trajectory.

A SQUIRREL SEARCH ALGORITHM AIDED ARTIFICIAL NOISE PRECODING FOR PHYSICAL LAYER SECURITY

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Security is always a challenging expanse to conduct research. The main motive of this project is to boost up physical layer security with the help of optimization techniques. A nature inspired optimization technique "Squirrel Search Algorithm (SSA)" is implemented to add artificial noise (AN) that deviates the eavesdropper from original signal. The system model considered here is developed using both non-orthogonal multiple access (NOMA) and massive multi-input-multi-output (massive MIMO) which results in the improvement of Physical Layer Security (PLS). Large scale path loss and small-scale Rayleigh fading channels are taken in account. An amplify-and-forward (AF) relay is considered for increasing the channel coverage. The linear precoding technique "Maximum Ratio Transmission (MRT)" and artificial noise precoding are used to compare the results between system model without AN and with AN. Results show that the secrecy performance for system model with AN is improved for all values of signal-to-noise ratio (SNR). Simulations are carried out to verify the improvement of secrecy performance in terms of secrecy outage probability and strictly positive secrecy rate versus SNR.

DIABETIC RETINOPATHY DETECTION USING DEEP LEARNING

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Diabetic Retinopathy (DR) is a human eye illness that occurs in individuals who have diabetes which harms their retina and in the long run, may lead to visual deficiency. Till now DR is being screened manually by an ophthalmologist which is a very time-consuming procedure. The goal here is to scale their efforts through technology, to gain the ability to automatically screen images for disease and provide information on how severe the condition may be. We shall be achieving this by building a Convolutional neural network model that can automatically look at a patient's eye image and estimate the severity of blindness in the patient. This process of automation can reduce a lot of time thereby screening the process of treating diabetic retinopathy at a large scale. And henceforth this project focuses on the analysis of different DR stages, which is done with Deep Learning. Here we will be training a neural network model on an enormous dataset including around 3662 train images to automatically detect the DR stage. There are five DR stages, which are 0, 1, 2, 3, and 4. In this project patient's fundus eye images are used as the input parameters.

CONTRIBUTION OF GREEN HOUSE GASES IN ENVIRONMENTAL CHANGE"

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The pre-industrial Holocene, concentrations of existing gases were roughly constant, because the large natural sources and sinks roughly balanced. In the industrial era, human activities have added greenhouse gases to the atmosphere, mainly through the burning of fossil fuels and chemicals. Environmental change is a Global climate change is a very complex subject. One way in which humans have affected the climate is by increasing emissions of greenhouse gases. Greenhouse gases absorb infrared (long-wave, heat) radiation. This is the form of the sun's energy reflected off the earth's surface. Greenhouse gases then radiate heat energy back toward the earth. This heats the earth's atmosphere and ultimately contributes to increasingly warmer climates, a process known as global warming. Common greenhouse gases include carbon dioxide (CO2), chlorofluorocarbons (CFCs), hydrofluorocarbon (HFC),methane (CH4), nitrous oxide (N2O), and tropospheric ozone (O3),hydrofluorocarbons(HFC),sulfur hexafluoride(SH6), nitrogen trifluoride(NF3). The 2007 Fourth Assessment Report compiled by the IPCC (AR4) noted that "changes in atmospheric concentrations of greenhouse gases and aerosols, land cover and solar radiation alter the energy balance of the climate system", and concluded that "increases in anthropogenic greenhouse gas concentrations is very likely to have caused most of the increases in global average temperatures since the mid-20th century". In AR4, "most of" is defined as more than 50%

OBJECT DETECTION USING PYTHON OPEN CV

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New OBJECT DETECTION method. The previous acquisition function is redirecting the dividers to obtain. Instead, we include the acquisition framework as a retrospective problem in location-separated boxes and related class opportunities. A single neural network predicts binding boxes and class possibilities directly in full images in a single test. Compared to state-of-the-art visual systems, YOLO (Looks Only Once) makes many local performance errors but is less likely to predict false detection where it does not exist. Finally, YOLO learns typical representation. It surpasses all other diagnostic methods, including DPM (Deformable Parts Models) and RCNN, with a wide range of production from natural photography to artwork in both the Picasso Dataset and the People-Art Dataset.

LIGHT-FIDELITY TECHNOLOGY

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Li-Fi that is light fidelitBy is one of the future technologies in wireless communication sector. It is used in instead of wifi .which has high speed and work with network communication as wireless technology similar to Wi-Fi. As internet users almost double every year, there is an enormous load on radio spectrum that leads to congestion. To get better bandwidth, efficiency and speed, a new technology Li-Fi has evolved. It is used in home automation. The, data is transmitted through light whose intensity fast that can't be reached to capture human eye . Instead of using modems, Li-Fi uses LED bulbs with transceiver for working.Data transmission in Li-Fi is about 100 times faster than Wi-Fi .Li-Fi is ideal for high speed wireless data transmission in particular area. Li-Fi provides higher bandwidth, efficiency, availability and security than Wi-Fi and has already achieved high speed in the lab. We can implement this lifi system public internet access through street lamps to auto -piloted can communicate through their head ups. As the speed of light is higher thus the data transmission speed is so much faster that the existing system. In the future we can implement this technology for fast data access for the laptops, smart phones, and tablets and many electronic smart working device.

SATELLITE COMMUNICATION ADVANCEMENT, ISSUES, CHALLENGES AND APPLICATIONS

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Communication in the whole of the World is revolutionized with the advent of Satellites. Satellite Communication has served mankind in many ways e.g. to predict weather, storm warning, provide wide range of communication services in the field of relaying television programs, digital data for a multitudes of business services and most recent in telephony and mobile communication. It may not surprise world community, if satellite communication links may be used for voice and fax transmission to Aircraft on International routes in near future. GPS Navigation, Global telephony, Multimedia video and internet connectivity, Earth Imaging through Remote sensing satellites for resource monitoring, Telemedicine, Teleeducation services etc. are other feathers in Satellite communication applications. Satellite communication system has entered transition from point-to-point high cost, high capacity trunks communication to multipoint -tomultipoint communication with low cost. Satellite Communication has moved in many steps ahead like frequency reuse, interconnecting many ground terminals spread over the world, concept of multiple spot beam communications, Laser beam based communication through satellites and use of networks of small satellites in low earth orbit. In this paper satellite communication advancement, different application aspect present and future is discussed. Satellite communication has many application and market if we can pool our resources, come up with innovative and low cost solutions for world community.

WIRELESS INTELLIGENT NETWORK

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Wireless intelligent network (WIN) is a concept being developed by the Telecommunication Industry Association (TIA) standards committee TR45.2. The charter of this committee is to drive intelligent network (IN) capabilities,based on interim standard(IS)-41,into wireless networks. Today's wireless subscribers are much more sophisticated telecommunication users than they were 5 years ago,No longer satisfied with just completing a clear call,today's subscribers demand innovative ways to use the wireless phone. WIN is an architecture that separates the service logic and feature functionality from the wireless network switch and places that functionality in other platform of network.WIN paradigm is key to helping service providers offer new enhanced services at fair rate.Rapid creation and deployment of services has become the hallmark of a wireline network based on IN concepts.WIN will bring those successful strategies into wireless networks.

UNDERWATER WIRELESS COMMUNICATION USING IoT

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Water occupies about 3/4th of the earth's surface, and due to their vastness, there are many unexplored regions, making it difficult for understanding the unique activities that take place underwater. Underwater Wireless Communication (UWC) helps in covering this gap because of its varied applications which include oil-rig maintenance, monitoring of marine life, coastal surveillance systems etc.

UWC generally consists of sensors and Autonomous Underwater Vehicles (AUVs) which coordinate and share information with each other to perform sensing functions. The data transmission between them is done through optical and RF wireless carriers. The Internet of Things and 5G networks have a great impact on UWC as they can improve the data transmission, connectivity and energy efficiency.

A HYBRID DEEP TRANSFER LEARNING MODEL WITH MACHINE LEARNING METHODS FORFACE MASK DETECTION IN THE ERA OF THE COVID-19 PANDEMIC

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The coronavirus COVID-19 pandemic is causing a global health crisis. One of the effective protection methods is wearing a face mask in public areas according to the World Health Organization (WHO).we introduce amask face detection model that is basedon deep transfer learning and classical machine learning classifiers. Theproposed model can be integrated with surveillance cameras to impedethe COVID-19 transmission by allowing the detection of people who arenot wearing face masks. The model is integration between deep transferlearning and classical machine learning algorithms. The proposed model consists of two components. The first component is designed for feature extraction using Resnet50. While the second component is designed for the classification process of face masks using decision trees, Support Vector Machine (SVM).Two face masked datasets have been selected for investigation. The Three datasets are the Real-World Masked Face Dataset (RMFD), the Simulated Masked Face Dataset (SMFD).The SVM classifier achieved 99.64% testing accuracy in RMFD. In SMFD, it achieved 99.49%.

MECHANICAL PROPERTIES OF SELF CURING CONCRETE

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Today concrete is most widely used construction material due to its good compressive strength and durability. Depending upon the nature of work the cement, fine aggregate, coarse aggregate and water are mixed in specific proportions to produce plain concrete. Plain concrete needs favorable atmosphere by providing moisture for a minimum period of 28 days for good hydration and to attain desired strength.In conventional curing this is achieved by external supply of water after mixing, placing and finishing of concrete. In practice conventional type of curing is difficult to perform as it shall need a large amount of water, meanwhile paucity of potable water increases day by day around the globe gives insufficient. quantity and inefficient quality of water for domestic purpose, hence arises the concept of self-curing concrete.The present study involves the use of shrinkage reducing admixture polyethylene glycol (PEG-400) in concrete which helps in self-curing and helps in better hydration and hence strength. The additional cost incurred in using polyethylene glycol can be reduced by usage of Fly ash(30%) and Rice husk ash (10%) as partial replacement for cement. and quarry dust (40%) as partial replacement for sand. In order to reduce the unit cost. also fly ash reduces the heat of hydration and increase the resistance of concrete to adverse exposure conditions.The effect of admixture (PEG-400) on Mechanical properties.like compressive strength, Split tensile strength and flexural strength by varying percentage of PEG by weight of cement from 0% , 0.5%, 1%, 1.5%, 2% dosages were studied both for M-30 and M-40 grade of concrete.The results show The Optimum dosage of PEG-400 for Maximum Strengths (compressive, split tensile and flexural strength) was found to be 1% for M30 and 0.5% for M40 grades of concrete. And for Replacement of cement and sand the optimum dosage of peg-400 for Maximum strengths (compressive, split tensile and flexural strength) was found to be 1% for M-30 and 0.5% for M-40 grade of concrete.Keyword: - Polyethylene glycol-400, fly ash, rice husk ash, quarry dust, super plasticizer compressive strength, split tensile strength, flexural strength

A PERSONAL HEALTH ASSISTANT CHATBOT

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Health Assistant chatbots are conversationally built with technology in mind with having the potential to reduce efforts to healthcare costs and improve access to medical services and knowledge. This project builts a diagnosis bot that engages patients in the conversation for their medical query and problems to provide an individualized diagnosis based on their diagnosed manifestation and profile.Health Assistant chatBot is able to chat with patients in order to understand their symptomatology, and monitor treatments and health parameters. In a simple way, by exploiting a natural language-based interaction, the system allows the user to create his/her health profile, to describe his/her symptoms and to search for doctors or to simply remember a treatment to follow. Specifically, our methodology exploits Machine Learning techniques to process user's symptoms and to automatically infer disease.

ANALYSIS OF HIGH RISE BUILDING USING DIFFERENT STRUCTURAL SYSTEM

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In Developing Countries there is a Growth for High rise building. In the 20th century the focus was on strength, rigidity. However, in 21st century structural engineers are looking for innovative structural designs for tall building. Many innovations in structural systems have emerged .Various techniques like Tube in tube, Outrigger structural system have led to decrease in size of structural members. The objective of this Research paper is to look for Different Structural design and also to find Optimum design for High rise building.. The structural performance of Moment Frame, Moment frame with Shear wall , Moment frame with Core , Tube in Tube Structure System, Outrigger Structure System, Outrigger system have been compared with parameters Base shear, Storey Drift, Displacement ,Bending Moment ,Shear Force , Time period.

Keywords: High Rise Building ,Structural design, Moment Frame, Moment frame with Shear wall , Moment frame with Core, Tube in Tube Structure System, Outrigger Structure System.

DIABETES DISEASE PREDICTION USING MACHINE LEARNING ALGORITHMS

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This paper deals with the prediction of Diabetes Disease by performing an analysis of five supervised machine learning algorithms, i.e., K-Nearest Neighbors, Naïve Baye, Decision Tree Classifier, Random Forest and Support Vector Machine. Further, by incorporating all the present risk factors of the dataset, we have observed a stable accuracy after classifying and performing cross-validation. We managed to achieve a stable and highest accuracy of 76% with KNN classifier and remaining all other classifiers also give a stable accuracy of above 70%. We analyzed why specific Machine Learning classifiers do not yield stable and good accuracy by visualizing the training and testing accuracy and examining model overfitting and model underfitting. The main goal of this paper is to find the most optimal results in terms of accuracy and computational time for Diabetes disease prediction.

DESIGN AND ANALYSIS OF PPRESSURE VESSEL USING PV ELITE

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A Pressure vessel is a device designed as a closed container that holds gases or liquids at a pressure considerably different from the ambient pressure. Due to differential operating conditions of pressure vessels, they are potentially dangerous and accident involving can be deadly and poses lethal dangers. The main aim of this work is to design and analyze a pressurized lube oil tank for working under varying operating conditions and to identify the most contributing parameter that controls the efficient working of the oil tank. Generally pressure will be developed inside the oil tank and also it has to withstand several forces developed due to both internal as well as external pressure acting on it, making the design critical. Hence for safety purpose, the pressure vessel was designed as per ASME standards. Further validation of PV- ELITE software was made.

ONLINE STUDENT ATTENDANCE MANAGEMENT SYSTEM(OSAMS):- A THREE PARAMETER SYSTEM FOR AUTOMATIC ATTENDANCE RECORDING USING MACHINE LEARNING TECHNIQUES

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The Corona Virus (CoVid-19) has compelled to transform the dimensions of world functions in a very dynamic manner. The essential systems like education and infrastructure related to it have evolved new paradigms at every stage. Online mode has taken a huge leap which facilitated new technologies and techniques to emerge and sharpen in view of accuracy. The Online class Student Attendance Management is the proposed system which is implemented using Advanced Machine Learning techniques. The evaluation is based on three parameters of facial identity, speech recognition and random question generator. The attendance is scrutinised and provided based on the presence of the student in these parameters. The Roll No (Unique Identity) is the basis of student or candidate in the system and further evaluation is taken forward using CNN, Speech Recognition algorithms and is implemented using libraries of Python (OpenCV etc). This system facilitates the employer or instructor in automating and relying on technology for attendance purposes. This system from student or employee perspective has a quicker access into the assignment or class without manual induction. On the whole this acts as a product of innovation in evolving online platforms for entry key (login etc) too.

IDENTIFICATION OF A PERSON USING FACE RECOGNITION WITH THE HELP OF DEEP LEARNING TECHNIQUES

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Human face is the significant characteristic to identify a person. Everyone has their own unique face. Thus, a face recognition and identification are required to distinguish each other. A face recognition system is the verification system to find a person's identity through biometric method. Face recognition has become a popular method nowadays in many applications such as phone unlock system, criminal identification and even home security system. This system is more secure as it does not need any dependencies such as key and card but only facial image is needed. Generally, human recognition system involves 2 phases which are face detection and face identification. Here we can Detect and recognize human face and can identify accurate Age and Gender of a person using CNN and modules of OpenCV, tensor flow, Keras and python which is part of deep learning.

CONTROL OF POLLUTION LEVELS OF SEMI-ADIABATIC DIESEL EGNINE WITH CNG AND CARBURETED METHANOL

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In the contest of fast depletion of fossil fuels, increase of pollution levels with fossil fuels and increase of economic burden on developing countries like India due to import of crude petroleum by spending huge amount of foreign exchange, the search for alternative fuels has become pertinent. Vegetable oils and alcohols are the major substitutes for diesel fuel, as they are renewable in nature. Vegetable oils have high viscosity and low volatility, causing combustion problems in diesel engine, high volatility and low carbon/hydrogen ratio will reduce pollutants in the exhaust of diesel engine. The exhaust emissions of diesel engine are particulate emissions, carbon monoxide (CO), un-burnt hydro carbons (UBHC) and oxides of nitrogen (NO x) cause severe health hazards apart from that they are carcinogenic in nature, causes environmental impact of Green-house effect, acid rain and global warming. Hence of control of these pollutants is an important and an urgent task. The semi adiabatic diesel engine(SADE), which minimizes the heat loss to the coolant by providing hot combustion chamber, which is suitable for burning alcohols. Gaseous combustion in diesel engine will reduce pollutants and increase efficiency. The CNG is affordable and ecofriendly in nature. The combination of alcohol and CNG will not only decrease pollutants but increase thermal efficiency. SADE at optimum injection timing and higher injection pressure with dual fuel technique will reduce pollutants considerably in comparison with neat diesel operation on CE for different injection timings as recommended injection timing and optimum injection timing, different injection pressures of 190, 230 and 270 bar and different test fuels of neat diesel, carbureted alcohol and CNG.

ENERGY DEMAND IN BIOGAS - A COMPARATIVE STUDY OF TYPES OF FEEDSTOCKS

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With the increasing demand of energy day by day renewable energy resources are gaining prominence. biogas is having more applications in rural and remote areas and contributing towards growth of rural people economy. Many biogas plants have been set up in the rural and urban area by the municipality. Biogas will soon replace fossil fuels as a source of energy. With increased usage of biogas global warming and greenhouse effect can also be reduced in the coming years. The production and use of biogas for domestic purposes can drastically reduce the depletion of natural resources like fossil fuels and also forests. Biogas can also be used for electricity generation. Biogas can be produced from various feed stocks like cow dung, poultry droppings, piggery, municipal waste, human waste etc.,In the present study three different types of feedstocks are considered for evaluation of gas production at constant temperature and yield factor. For a chosen value of yield factor(4.18) and temperature of 25o-28o c, input calculations are given for digester volume, gas holder capacity and digester to gas holder ratio.The present study reveals that biogas can be used as a better alternative fuel in the day of energy challenges and municipal sanitation issues. More research in the field of biogas production is required and its sustainability must be considered in the global renewable scenario. The operational conditions and parametric stabilization impart a vital role for its vast productivity.Piggery is found to be more effective for gas production for a particular yield factor and temperature in comparison to cow dung and poultry droppings.

THERMAL ANALYSIS OF MISSILE AIRFRAME SECTION

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An Aerospace Vehicle experiences high temperatures due to aerodynamic heating effects during its flight path. As the body moves through the air at supersonic and hypersonic speeds, the air experiences immediate compression at the nose of the body and viscous effects on the wall surface due to flowing of air with a relative high speeds to that of vehicle. The temperature of the body raises due to the heat transfer from the air through a thermal boundary layer formed at the air and wall interface. The raise in temperature of airframe section causes the development of thermal stresses within the material leading to the structural failure. The heat transfer into the body may cause failure of optical and electronic components inside the body. Therefore, it is necessary to restrict the heat flow and minimize the wall temperatures. In this project, studies will be carried out to predict transient temperature distribution and thermal stresses for a typical trajectory heat flux profile. Parametric studies will be carried outwith different thicknesses of insulation on airframe to finalize the insulation thickness requirements for maintain the wall temperatures within the limit. The resultant thermal stresses in the airframe with and without insulation will be compared. All these studies will be executed using commercial software ANSYS Mechanical.

FAKE NEWS DETECTION SYSTEM USING ARTICLE ABSTRACTION

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Recently, fake news has been incurring many prob- lems to our society. As a result, many researchers have been working on identifying fake news. Most of the fake news detection systems utilize the linguistic feature of the news. However, they have difficulty in sensing highly ambiguous fake news which can be detected only after identifying meaning and latest related information. In this paper, to resolve this problem, we shall present a new Korean fake news detection system using fact DB which is built and updated by human's direct judgement after collecting obvious facts. Our system receives a proposition, and search the semantically related articles from Fact DB in order to verify whether the given proposition is true or not by comparing the proposition with the related articles in fact DB. To achieve this, we utilize a deep learning model, Bidirectional Multi- Perspective Matching for Natural Language Sentence(BiMPM), which has demonstrated a good performance for the sentence matching task. However, BiMPM has some limitations in that the longer the length of the input sentence is, the lower its performance is, and it has difficulty in making an accurate judgement when an unlearned word or relation between words appear. In order to overcome the limitations, we shall propose a new matching technique which exploits article abstraction as well as entity matching set in addition to BiMPM. In our experiment, we shall show that our system improves the whole performance for fake news detection.

MECHANICAL AND FRACTURE PROPERTIES OF SELF COMPACTING CONCRETE

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Over a century, concrete has been used as a construction material all over the world, and its application areas increases and becomes commonplace each day. SCC is a special concrete type which places itself in densely-equipped narrow and deep sections with its own weight, tightens without any vibrations, has high resistance or durability characteristics and performances, and has a very fluid-consistency. Fracture Mechanics researches defects that increase stress concentration such as notch, crack and flaws in the material and the damages occurring in relation to these defects. Therefore, a cracked construction could be analyzed only by using fracture mechanics methods, that is, by determining fracture parameters realistically. Fracture parameters are among the most important characteristics of hardened concrete. This study aimed to determine the effect of inclusion of steel fibers on mechanical and fracture properties of self-compacting concrete. To study the effect of steel fibers, Notched steel fiber-reinforced concrete (SFRC) beams and ordinary concrete beams with 100 mm × 100 mm ×500 mm were cast and tested via a three-point bending test. Among them, three different volume fractions (0.1%, 0.2% and 0.3%) and three different notch-depth ratios (0.1, 0.2, and 0.3) are considered for determining the fracture properties. The effects of the steel fiber volume fraction (VF) on the critical stress intensity factor (KIC), fracture energy (GF), Fracture Toughness, mechanical properties are to be studied.

Keywords: steel fiber; three-point bending; fracture parameters.

PREDICTION OF HEART DISEASE USING MACHINE LEARNING CLASSIFICATION IN E-HEALTHCARE

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Heart disease is one of the complex diseases and globally many people suffered from thisdisease. On time and efficient identification of heart disease plays a key role in healthcare, particularlyin the field of cardiology. In this article, we proposed an efficient and accurate system to diagnosis heartdisease and the system is based on machine learning techniques. The system is developed based onclassification algorithms includes Support vector machine, Logistic regression, Artificial neural network,K-nearest neighbor, Naïve bays, and Decision tree while standard features selection algorithms have beenused such as Relief, Minimal redundancy maximal relevance, Least absolute shrinkage selection operatorand Local learning for removing irrelevant and redundant features. We also proposed novel fast conditionalmutual information feature selection algorithm to solve feature selection problem. The features selectionalgorithms are used for features selection to increase the classification accuracy and reduce the execution timeof classification system. Furthermore, the leave one subject out cross-validation method has been used forlearning the best practices of model assessment and for hyper parameter tuning. The performance measuringmetrics are used for assessment of the performances of the classifiers. The performances of the classifiershave been checked on the selected features as selected by features selection algorithms. The experimentalresults show that the proposed feature selection algorithm (FCMIM) is feasible with classifier support vector machine for designing a high-level intelligent system to identify heart disease.

COMPUTER-AIDED CERVICAL CANCER DIAGNOSIS USING TIME-LAPSED COLPOSCOPY IMAGES

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Cervical cancer causes the fourth most cancer related deaths of women worldwide. Early detection of cervical intraepithelial neoplasia (CIN) can significantly increase the survival rate of patients. In this paper, we propose a deep learning framework for the accurate identification of LSIL+ (including CIN and cervical cancer) using time-lapsed colposcopy images. The proposed framework involves two main components, i.e., key-frame feature encoding networks and feature fusion network. The features of the original (pre-acetic-acid) image and the colposcopy images captured at around 60s, 90s, 120s and 150s during the acetic acid test are encoded by the feature encoding networks. Several fusion approaches are compared, all of which outperform the existing automated cervical cancer diagnosis systems using a single time slot. A graph convolutional network with edge features (E-GCN) is found to be the most suitable fusion approach in our study, due to its excellent explain ability consistent with the clinical practice. A large-scale dataset, containing time-lapsed colposcopy images from 7,668 patients, is collected from the collaborative hospital to train and validate our deep learning framework. Colposcopists are invited to compete with our computer-aided diagnosis system. The proposed deep learning framework achieves a classification accuracy of 78.33%-comparable to that of an in-service colposcopist- which demonstrates its potential to provide assistance in the realistic clinical scenario.

APPLICATIONS OF MACHINE LEARNING IN THE FIELD OF MEDICAL CARE

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These years, with artificial intelligence and machine learning becoming the hotspot of research, several applications have emerged in each of these areas. It exists not only as a kind of academic frontier but also something close to our life. In this trend, the combination of medical care and machine learning becomes more and more tighter. The proposal of its main idea also greatly alleviated the existing situation of unbalanced medical distribution and resources strain. This paper summarizes some application of machine learning and auxiliary tumor treatment in the process of medical resource allocation, and puts forward some new methods of application to realize it closer to human life in the era of artificial intelligence and the explores a good situation of mutual combination of medical industry and computer industry, which is benefit both.

CRIMINAL DETECTION USING FACIAL RECOGNITION

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The main concept of this project is to experiment with using deep learning neural networks to detect and quickly respond to crimes in progress with effective Criminal Recognition to reduce the crime rate. Also,Now a days manually doing tracking can be very difficult.

We all know that our Face is a unique and crucial part of the human body structure that identifies a person. Therefore, we can use it to trace the identity of a criminal person. With the advancement in technology, we can place CCTV at many public places to capture the criminal's crime.

This system will be able to detect face and recognize face automatically as well.Using the previously captured faces and criminal's images that are available in the police station, the criminal face recognition system can be implemented.

Our, Smart AI will do this in a smart way by first generating datasets from human faces taken from CCTV video and use it in a Face Recognition model we are using. I have used deep learning libraries and some image processing tools to achieve this task.

HIGH-SPEED AREA-EFFICIENT VLSI ARCHITECTURE OF THREE-OPERAND BINARY ADDER

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Three-operand binary adder is the basic functional unit to perform the modular arithmetic in various cryptography and pseudorandom bit generator (PRBG) algorithms. Carry save adder (CS3A) is the widely used technique to perform the three-operand addition. However, the ripple-carry stage in the CS3A leads to a high propagation delay of O(n). Moreover, a parallel prefix two-operand adder such as Han-Carlson (HCA) can also be used for three-operand addition that significantly reduces the critical path delay at the cost of additional hardware. Hence, a new high-speed and area-efficient adder architecture is proposed using pre-compute bitwise addition followed by carry prefix computation logic to perform the three-operand binary addition that consumes substantially less area, low power and drastically reduces the adder delay to O (log2 n). Moreover, it has a lesser area, lower power dissipation and smaller delay than the HC3A adder. Also, the proposed adder achieves the lowest ADP and PDP than the existing three-operand adder techniques. This is synthesized with the commercially available 45nm CMOS technology library in cadence. For compilation I use native complier, for gate level simulation I use Incisive unified simulator (IUS) and for physical design I use Innovus

FINITE ELEMENT ANALYSIS AND OPTIMIZATION OF CERAMIC INJECTION MOULDING PROCESS PARAMETERS AND MECHANICAL PROPERTY EVALUATION OF CERAMIC CORES

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Finite Element Analysis and optimization of Ceramic Injection Moulding process parameters and mechanical property evaluation of ceramic cores Matham Sandeep, M.E (MED) CADCAM, III Semester, March 2022. Roll no: 1601-20-765-009, E-Mail: pgs20009_mech.sandeep@cbit.org.in Chaitanya Bharathi Institute of Technology, Hyderabad-500075 Internal Guide: Dr. G. Chandramohan Reddy, Professor of Mechanical Engineering, CBIT. External Guide: Alok Singh Chauhan, SC-E, DMRL, Hyderabad ABSTRACT Gas Turbine Blade and Vane components are produced through investment casting process using Nickel based super alloys. To withstand high thermal gradients, the blades and vanes are made hollow, using ceramic cores during investment casting process, through which compressed cooling air from is circulated. Ceramic cores are manufactured by injecting the ceramic mix in specially developed die cavity at high pressure. Any minute deviation in the shape and geometry of ceramic core will result in undesirable hollow cavity in casting and improper cooling of turbine blades and vanes, eventually resulting in lesser life of the entire gas turbine. The ceramic core used is also required to have sufficient strength at elevated temperature as this ceramic core is exposed to molten metal in the IC process. In present study the quantification and prediction of dimensional deviations due to shrinkage & warpage, which are dependent on injection parameters, shape of part

and gating system adopted, is planned. Ceramic Injection Moulding (CIM) simulations are planned for getting insight of flow pattern in the die cavity to predict possible weld lines, air-trap, jetting etc. The simulation-based methodology is to be used to decide the range of injection parameters and their effects on the ceramic core. The green cores obtained upon CIM will be subjected to sintering followed by dimensional deviation analysis using coordinate measuring machine (CMM). The sintered cores will be subjected to flexural strength testing so as to arrive as correlation between CIM process parameters and mechanical property of the cores produced.

FRIEND RECOMMENDATION SYSTEM USING HYBRID FILTER AND PERSONET FOR SOCIAL NETWORK DATA

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Friend Recommendation Systemis a main part of any social networking system. With the popularity of social networking sites, many Friend Recommendation Systemapproaches have been proposed in the past 18 years. However, most of them are homophily based systems, homophily is the propensity to associate and bond with similar persons with same qualification or same data of personal information. This work checks the hypothesis that taking personality into account can improve recommendation quality. Inother words, these systems will recommend people that you share common features with them as friends. Homophily based Friend Recommendation System is accurate when the common feature is a physical or mental feature, such as age, hobbies,job, lifestyle. However, it is not the case with personality. Having a given personality does not necessarily mean that you are compatible with people that have the same personality type. Therefore, in this project, we present and evaluate a Friend Recommendation System based on the big-?ve personality traits model and hybrid ?ltering, in which the friend recommended process is based on personality traits and users' similarities rating. To validate the proposed system's accuracy, a personality-based social network site that uses the proposed Friend Recommendation System named PersoNet is implemented. Users' rating results show that PersoNet performs better than Collaborative Filtering based Friend Recommendation System in terms of precision and recall.

WASTEWATER MANAGEMENT IN TEXTILE INDUSTRIES

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Textile industry is one of the oldest industries in India. It is responsible for 14% of the total industrial manufacture.However, the textile industry is considered to be one of the biggest threats to the environment.Pretreatment, dyeing, printing and finishing operations are among the various stages of the industrial textile manufacturing process.These fabrication operations not only utilize huge quantities of water, they also generate considerable amount of waste.The textile industry utilizes a number of dyes, chemicals and other materials to impart the required qualities to the fabrics.These operations produce a significant amount of effluents.The quality of effluents is such that they cannot be put to other uses, and they can create environmental problems if they are not disposed with proper treatment.The processes of production of textiles or wet treatments and finishing processes of textile materials are huge consumers of water with high quality.As a result of these various processes, considerable amounts of polluted water are released.These methods of pre-treatment or purification of waste waters in the textile industries can be:primary(screening, sedimentation, chemical coagulation), secondary(aerobic, anaerobic treatment)and tertiary(membrane technologies, adsorption, ion-exchange method).The selection of purification methods depends on the composition and type of waste water.Textile wet-processing is a key process in the industry and it also generates the greatest amount of pollutants in textile processing.Effective water and wastewater management strategies enable us to decrease water consumption and pollution load of waste waters. Keywords: water consumption, wastewater management strategies, textile industry, low-waste technologies.

A REVIEW ON DYE REMOVAL BY HYDROGELS

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Synthetic dyes are a class of recalcitrant organic compounds, which are frequently discovered in the environment due to their widespread industrial use. These are common pollutants and many of them have been identified as hazardous or carcinogenic. Dyes, even at very low concentrations, are extremely visible and alter aquatic life and the food chain. The contamination of water by dyes is a critical environmental issue, and as a result, a great deal of effort is being put into developing innovative adsorbent systems with high sorption capacity. Many methods have been used to remove resistant organic dyes; however, adsorption methods are usually the most suitable due to their ease of use and low cost. Sawdust, rice husk, petroleum wastes, fertilizer wastes, fly ash, sugar industry wastes, blast furnace slag, seafood processing wastes, seaweed, algae, peat moss, clays, red mud, zeolites and ore minerals have been used as adsorbents. However, cost-effective biodegradable hydrogels with high sorption capacity, functionality, and hydrophilicity are high on demand and these types of adsorbents may lead the way for decolorization of organic dyes effectively. The polymer composition, pH, and ionic strength of the medium influence dye removal efficiency of the hydrogels. Furthermore, hydrogels exhibit temperature-sensitive properties, it can be employed as a controlled adsorption of both cationic and anionic dyes and thus potentially increasing adsorption capacity after reaching the critical temperature. This review clearly articulates the contemporary research on dye removal by hydrogels. In addition, it presents future scope of the hydrogel-based materials in dye removal applications.

Keywords: Hydrogel, Wastewater, Dyes, Biodegradable, Adsorbents.

AN OVERVIEW ON THE PRESENT BREAK THOROUGHS AND MISCONCEPTIONS ABOUT NEUROPLASTICITY

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In the early 20th century, neuroscientists came to conclusion that a mature brain is like a fly stuck in amber, not mouldable. With vast technological innovations, enabled the scientific community to research on brain to get more insights of the CPU(brain) of our body. Among the many other interesting concepts, new comprehensions regarding the principles and concepts of neural mechanisms. The most fascinating find that they landed upon during their quest is the theory of neuroplasticity. This newfound perception continues to intrigue the curious mins all around the world and across time. Neuroplasticity can be defined as an exceptional ability of our brain to reconfigure i.e rewire itself in response to the things like environmental stimulus, behaviour experiences both physically and mentally, etc. Neuroplasticity is distinctive there is no obligation in science regarding its mechanism in an individual up to some extent.The following review intends to explain the scope & depth of neuroplasticity, its principle and aims to address "to what extent are the misconceptions regarding the neuroplasticity true?". Using the DTI(Diffusion tensor imaging).People also some insights on how hormones influence neuroplasticity throughout the lifespan. There were studies showing Neuroplasticity also deals with treating motor neuron disorders. Upon thorough evidence based investigation upon the claims supporting the scientific knowledge behind the principle,benefits of neuroplasticity and the arguments, claiming neuroplasticity to be regarded as pseudoscience. The integrity of such claims will be validated.

Keywords: Neuroplasticity, Diffusion tensor imaging, stimulus, pseudoscience, motor neuron disorder

OPTIMIZATION OF DIMENSIONAL INSPECTION METHODOLOGY USING COORDINATE MEASURING MACHINE

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Background of the Problem: A coordinate measuring machine (CMM) is widely used for quality inspection for the advantages it has over conventional measuring instruments. Many factors affect the measuring using a coordinate measuring machine like stylus length, Vibrations, Temperature, Stylus tip radius, Alignment techniques, Probe speed, and so on. Major factors like temperature, vibrations are controlled but the factors like the stylus tip radius, stylus length of the stylus, the alignment techniques can change the measurement values. If not measured properly then the quality testing could go wrong. In the present study, the effects of the stylus length, stylus tip radius, alignment techniques, and the probe angle on the measurement are studied. A standard component is chosen for the experiment on which a minimum of two stylus lengths, two stylus radii, two different alignments, and two different angles are used for measuring the component. The data will be later analyzed with the help of statistical analysis using Mini Tab software. The experiment is conducted on a bridge-type CMM. The results of the study will indicate the effects of the stylus length, stylus tip radius, alignment techniques, and the probe angle on the measurement. There will be a statistical difference in measurements between levels for the measurement plane, stylus length, stylus size, and the probe angle. The stylus length and stylus size will result in a significant amount of variation when they are changed.

IMPLEMENTATION OF HARDWARE MODULE OF IOT BASED INFANT MONITORING SYSTEM

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The demand of innovated advanced control is rapidly increasing due to the significance of in low-income settings, half of the babies born at or below 32 weeks (2 months early) die due to a lack of feasible, cost-effective care and reducing the death ratio among the infant baby. The chance of providing better infant care is reduced. This may cause many troubles to the health of children. There is a danger of losing the life even, if the babies are not monitored properly and continuously. There are number of parameters in the application presented as an advanced control system, used to monitor some important parameters like health care assistance, oxygen level monitoring that affect the life of infant baby. This technique simultaneously monitors and controls more than one parameter with advanced control system and provides smooth operation which helps to increase the accuracy.The proposed system consists of contactless temperature, moisture, motion and cry detection,Grove-Gas Sensor (O2) sensor. The system can monitor the external conditions like increasing body temperature, crying of the baby when the voice exceeds the pre-determined range, movement of the baby, when found to be moving continuously and also indicates when the diaper is needed to be changed, if excess wet was observed. Grove-Gas Sensor (O2) is a kind of sensor to test the oxygen concentration in air we can measure the level of oxygen in the air. The system is based on GSM network to send alert messages to the parents when any of these parameters exceeds the saved values. This system is attached with a video camera which is operated based on the instructions from the android application and is used for fall detection of infant through the motion sensor. The video will be displayed on the screen to monitor the baby continuously and fall detection system is implemented based on spatial segmentation sensing model that helps provide low-cost and secure motion.

SIGN LANGUAGE DETECTION FOR DEAF OR BLIND HUMAN USING ARTIFICIAL NEURAL NETWORK

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Every day we see many people who are facing illness like deaf, dumb and blind etc.They face difficulty to interact with others. Previously developed techniques are all sensorsbased and they didn't give the general solution. This paper explains a new technique ofvirtual talking without sensors. An image processing technique called Histogram of gradient(HOG) along with artificial neural network (ANN) has been used to train the System. WebCamera is used to take the image of different gestures and that will be used as input to theMat lab. The software will recognize the image and identifies the cores pending voice output which is played using voice replay kit. This paper explains two-way communicationsbetween the deaf, dumb and normal people which means the proposed system is capable ofconverting the sign language to text and voice.

PREDICTION OF GETTING AN ADMISSION IN UNIVERSITY USING MACHINE LEARNINGALGORITHMS

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In the present conditions, students regularly have difficulty finding a fitting institution to pursue higher studies based on their profile. There are some advisory administrations and online apps that recommend universities but they ask huge consultancy fees and online apps are not accurate. So, the aim of this research is to develop a model that predict the percentage of chances into the university accurately. This model provides also the analysis of scores versus chance of prediction based on historical data so that students can understand whether their profile is suitable or not. The proposed model uses linear regression and random forest algorithms but cat boost algorithm is giving highest accuracy. In the model development, the dataset is consistently split into train and test set of 80% and 20%. Train set has 400 profiles and test set has 100 profiles. The dataset used for modelling looks like this. Preprocessing is a crucial step in method. The aim is to clean the data and prepare it for use in a prediction algorithm. Few improvements are required for the data obtained from Occidental College in order to make it suitable for the proposed machine learning algorithms. Determining how to deal with missing data is a common problem in data cleaning. Since the function in question could be a good predictor of the algorithm's outcome, it's critical to find missing entries, locate them, and apply a treatment based on the variable form that enables us to use the data in the model. The data was pre-processed and split into two classes at random: a training set and a testing set. We selected 80 percent of the 7976 entries in our dataset as our training collection.

NUTRIENT ANALYSIS IN GERMINATION

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The rapid surge towards recycling and environmental protection, sparked an interestto investigate the reusability of filter drain water in my locality for watering plants. An experiment was designed to explore whether germination of green gram seeds requires NPK ions.To find out"to what extent do the ions; potassium, nitrogen, magnesium, and phosphorus influence the germination of green gram seeds?". To do so, hydroponics was chosen as it would allow the subject to uptake pure nutrients (ions) directly at much faster rates. The present study concluded that germination, generally does not require the presence of essential ions. As germination was observed incontrol solution (distilled water). Probably because this process is self-sufficient and may not depend on acquisition of nutrients thus, just requiring water to moisturize itself to secrete the growth hormone: gibberellin acid. However, present research also showcased that the germination rate is significantly affected by the ions present. As seeds supplied with phosphorus ion solution displayed the fastest germination, followed by magnesium & potassium with relative similarities, then filter drain water and then the slowest with nitrogen ion solution. However, the filter drain water could not germinate as efficiently as Mg, P and K solutions, probably due to its high ppm or impurity content.

Keywords: germination, green gram, hydroponics, gibberellin acid, magnesium ion, potassium ion, phosphorus ion, recycling, NPK.

COMPOSITE MATERIAL CHARACTERIZATION USING NON-DESTRUCTIVE TESTING METHODS-A REVIEW

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This research review paper explains about the non-destructive testing methodologies for the characterization of composite materials. This paper adopts the capabilities of commonly used nondestructive testing methods in composite evaluation, such as Ultrasonic Testing, Radiographic Testing,Visual Testing, Thermography, Electromagnetic Testing, Acoustic Emission and Shearography Testing by considering the advantages and disadvantages of these methods. Then, methods categorized based on their intrinsic characteristics and their applications.For the evaluation of material characteristics, only one non- destructive test method is required. If the scope of work is straight in nature,it is said that using a single test method is acceptable. However, when a single test method doesn't provide required information about the material integrity , thenusing combination of different methods is essential. Non-destructive testing is widely applied in power plants,nuclear industry, military and defence, aerospace, storage tank inspection, pipe and tube inspection and composite defects characterization. This paper mainly focuses on the scope of application for composite materials.

Keywords: Non-destructivetesting, Compositematerial, Characterization.

A REVIEW ON HYALURONIC ACID FOR TREATMENT OF OSTEOARTHRITIS

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The polysaccharide hyaluronic acid (HA) is found in the extracellular matrix of vertebrate epithelial, neural, and connective tissues. HA has become an important component of major pharmaceutical, biomedical, and cosmetic products with high commercial value worldwide due to its high moisture retention, biocompatibility, and viscoelasticity properties. Lubrication plays a major role in the proper operation of devices and tissues with moving surfaces such as articulating joints, ocular surfaces, and the lungs. Failure in lubrication causes increased friction and system degeneration. Osteoarthritis, a type of arthritis, is one such prevalent skeletal system degeneration. It occurs due to wear down of flexible tissue at the ends of bones. Millions of people have been affected by this disorder. Conventional treatment of osteoarthritis is being injected with corticosteroid or cortisone hormone injections. They are injected directly into a single joint and can reduce inflammation and pain. However, while the effect may last for several months, repeated injections increases cartilage loss. On the other hand, tissue surfaces treated with the HA-binding system exhibit higher lubricity values and are capable of retaining HA in the articular joint and binding to ocular tissue surfaces. In this review, a summary of recent research on HA and its applications in osteology is presented. It also covers the current challenges in HA treatment of osteoarthritis and its future applications on various other tissue-lubricating dysfunctions.

Keywords: Hyaluronic Acid, Osteoarthritis, Lubrication, Corticosteroid injections.

WAVEFORM GENERATION AND SIMULATION USING MATLAB FOR 5G NR

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This project represent the working of 5G NR waveform. Due to wide range of frequencies that is available for 5G NR.The 5G NR frequencies are divided into two frequency ranges FR1 and FR2.

In this project we are using subcarrier spacing ($\Delta f=2\mu*15khz$) to know the FR1 and FR2 frequencies. After knowing the FR1 and FR2 levels we are generating waveform using the 5G NR toolbox available in the matlab 2021b software.by generating different waveform the results for different frequency levels . The obtained results are compare with bit error rate(BER).by comparing results we will able to know at what frequencies are suitable to transmit signals for different waveform for getting error free signals at the receiver station.

HAND BASED GESTURE RECOGNITION FOR DEAF AND DUMB PEOPLE USING CONVOLUTION NEURAL NETWORK

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From the ancient age, gesture was the first mode of communication, after the evolution of human civilization they developed the verbal communication, but still non-verbal communication is equally significant. Such non-verbal communication is not only used for physically challenged person but also it can be efficiently used for various applications such as 3D gaming, aviation, surveying, etc. This is the best method to interact with computer without any peripheral devices. Many Researchers are still developing robust and efficient new hand gesture recognition techniques. The major steps associated while designing the system are: preprocessing, feature extraction and classification/recognition.In this patient monitoring system, the gesture recognition system is used for patients those who are all unable to move from their place. The gestures as input are then converted into a particular message using different methodologies, and that input will send to main monitoring hospital station through the mail.

DESIGN AND SIMULATION OF GRAPHENE BASED RECONFIGURABLE NANO ANTENNA FOR TERAHERTZ APPLICATIONS

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Guide: Dr. M. Bhanu Chandra, Professor of Electronics and Communication Engineering

A broadband, high radiation efficiency graphene-based reconfigurable nanoantenna for terahertz applications is proposed. The main part of the antenna is the graphene-based microstrip patch. This project has been proposed to solve the problem of getting radiation pattern reconfiguration in a single antenna that fulfils the requirement of multifunctional system with better performance with the confined volume at higher frequency. At high frequency (THz), the communication system comprises of higher transmission data rate and the low transmitting power with reliable wireless systems. It represents the design and analysis of monolayer graphene based reconfigurable array antenna (patches are 1×4 array on polyimide substrate) at terahertz (THz) band for reconfiguration radiation pattern. Design of microstrip patch antenna using HFSS (High Frequency Structure Simulator). Results show that high radiation efficiency is achieved for array of patch antenna. Simulations are carried out for graphene-based patch antenna and comparison of patch antenna with array of patch in terms of radiation efficiency.

SECRECY CAPACITY ANALYSIS OF NON-ORTHOGONAL MULTIPLE ACCCES TECHNIQUE OVER ALPHA- MU FADING CHANNELS

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Increasing demand for growth in future wireless communication i.e., 5G. the NOMA (non-orthogonal multiple access) has been recognized as a promising technology it allows multiple users to simultaneously share the same transmission resources to improve the spectral efficiency. For the NOMA system the secrecy performance analysis of digital systems over fading channels has become a research focus. Considering the effect of outdated channel state information (CSI), the need of secrecy performance and capacity analysis of NOMA over ? ? μ fading channels where ? and μ specify the nonlinearity and clustering of fading channels. The main goal this project involves how the power allocated to weak and strong users in NOMA that can effectively enhance the secrecy of the NOMA system over small scale fading channels (such as exponential, Rayleigh, Gamma, Nakagami-m, Weibull). And the ASC (average secrecy capacity) of the NOMA system over various fading channels implementation and analysis is needed to know how The secure data transmission between multiple users and a base station. And the ASC is how efficiently it prevent the information being overheared by eavesdropper in physical layer security system.

ARTIFICIAL RBC USING NANOTECHNOLOGY

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Nanotechnology marks a drastically different approach in manufacturing. Instead of sealing materials down to create something, nanotechnology produces things by building then up piece by piece on a molecular level by providing broad scope. Now, In medical field we deal in detail about nanotechnologies potential in developing artificial red blood cells design of artificial RBC and their efficiency compared to normal RBC working of the developed artificial RBC their use in the medical field. The application is to provide metabolic support in the event of impaired circulation.. Machines could be produced, down to the size of viruses, which would work at incredible speeds. The original artificial red blood cells have evolved into oxygen carriers in the form of polyhemoglobin and conjugated hemoglobin. Clinical conditions requiring only oxygen carriers are responding well to these types of oxygen carriers without the need for a complete artificial red blood cell. For those conditions requiring more than just oxygen carriers, new generations of polyhemoglobin containing antioxidant enzymes are being developed. Though a complete artificial red blood cell comparable to red blood cell is still a dream, development in lipid membrane artificial red blood cells and biodegradable polymeric nano artificial red blood cells are steps towards this possibility. The many years of neglect on basic research in the area of blood substitutes have resulted in the lack of important basic knowledge needed for the rapid development of blood substitutes suitable for clinical use. This is further hampered by the mistaken conception that blood substitute is a single entity. We need to look at blood substitutes as consisting of progressively more complicated entities, e.g. oxygen carriers, oxygen carriers with antioxidant activity, and complete red blood cell substitutes. Each of these entities is not applicable to all clinical conditions, but is suitable for specific applications

Keywords: Artificial RBC, Nano technology, Controlled release of oxygen, diamonded pressure tank, nanobots.

NANOBOTS

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Keywords: Nanobots serve as miniature surgeons which can be used to repair damaged cells or replace intracellular structures. They can replicate themselves to correct a genetic deficiency or replace DNA molecules to eradicate disease. Innovative designing of nano-sized robots to enter the bloodstream and perform certain precise tasks such as targeting and killing cancer cells, delivering drugs to infectious sites. Nanorobot designs may include biomolecules/DNA-based structures containing cancer fighting drugs that bind only with a specific biomarker found on cancer tumour or target cells. Once it attaches, the robot releases its drug into the tumor or target cells. Such precision delivery of the drug exactly to target, avoid overloaded toxicity in patients, and reduce the side effects and improving the patient experience. Nanorobots have the potential to prolong human lives in two ways, the first is by assisting in the eradication of life-threatening diseases such as cancer and heart disease, and the second is by repairing damage to our bodies at the cellular level.

Applications: 1. Developing customized means to optimize the delivery of chemotherapy drugs to overcome immunesuppression, liver or heart toxicity. 2. Infection-fighting equipment of the future: "Microbivore" constitutes a large class of medical nanorobots acts as an artificial mechanical white cell, seeking out and digesting unwanted

pathogens including bacteria, viruses, or fungi in the bloodstream. 3. Medical nanorobots could also be used to perform surgery on individual cells. A nanorobot called a "chromallocyte" is capable of removing all existing chromosomes from a diseased or damaged cell and inserting new ones in their place which is called as chromosome replacement theraphy. 4. Nanorobotics might carry small ultrasonic signal generators to deliver frequencies to digest kidney stones and destruction of blood clots.

Conclusion: Nanotechnology is the engineering of molecularly precise structures and, ultimately, molecular machines. Nano medicine is the application of nanotechnology to medicine. The ultimate tool of nanomedicine is the medical nanorobot-a robot the size of a bacterium, composed of molecule-size parts. Medical nanorobotics holds the greatest promise for curing disease and extending the health span. Current developments in nanomedicine will ultimately lead to the design and manufacture of medical nanorobots for life extension. Nanorobotics are going to create a revolution in the medical history in the future.

A ROAD ACCIDENT ANALYSIS MODEL ABOUT THE ACCIDENTS IN SOUTHERN STATES OF INDIA USING DATA MINING TECHNIQUES

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This project is discussing about the road accidents in southern states of India using data mining techniques, where different approaches have been considered. We have collected research work carried describing the review work in context of road accidents. In this scenario, it will be good to analyze theoccurrence of accidents so that this can be further used to helpus in coming up with techniques to reduce them.Even thoughuncertainty is a characteristic trait of majority of the accidents,over a period of time, there is a level of regularity that isperceived on observing the accidents occurring in a particulararea.

In this paper, we havestudied the inter relationships between road accidents, conditionof a road and the role of environmental factors in the occurrenceof an accident.We have made use of data mining techniques indeveloping an accident prediction model using Apriorialgorithm and Support Vector Machines. South state that Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Karnataka road accident datasets for the year of 2019 to 2020 available in theinternet and hospital data have been made use for this study. The accidents in the Telangana State 21,570, Andhra Pradesh State 20,677, Tamil Nadu State 57,288, Kerala State 39,944 and Karnataka State 40,570 these number of accidents are reported in the year of 2019. My project main intention is reduce the accidents.

IOT - BASED RASPBERRY - PI REPEATER NETWORK

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The Internet of things (IoT) is an important feature of the internet. Wi-Fi is one of the most commonly used wireless network technologies which allows multiple devices to interface with the internet. Apart from the standard infrastructure components especially power and network which are absolutely necessary for IoT gadgets, there is also a need to eliminate such dependencies to make the IoT future-ready. But in order to set up this network in vast areas such as educational institutions, public places, etc., it is difficult to provide a wired network connecting every route which in turn also increases the maintenance cost. So here in this project, we are proposing a solution that is cost-efficient and also powerful with low maintenance. It is also an energy efficient solution as the Raspberry Pi consumes less electricity compared to most of the routers in the market. Here we are proposing a self-maintained system with minimum overall investment for the infrastructure of the network by deploying a Wi-Fi P2P access point communication strategy for IoT gadgets which also helps to minimize the cost of maintenance with the wide coverage of the network.

COMPARATIVE STUDY OF SECONDARY STRUCTURE PREDICTION

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Proteins are biological molecules present in living cells. They are made up of amino acids. Proteins are diverse in structure and function. There are many proteins whose structure is not known. The proteins which are derived from the non coding region of the genome are hypothetical proteins. The function of protein is determined by its structure therefore it is necessary to predict the structure of protein. Protein structure is classified into primary, secondary, tertiary and quaternary structure. There are many tools available for secondary and tertiary structure prediction. The secondary structure of the protein contains alpha helix and beta sheet.Each tool has its own algorithm and output varies according to the tool. Most of the tools use machine learning algorithms like deep neural networks, recurrent neural networks etc. Secondary structure arises from the pattern of hydrogen bonding. Secondary structure prediction involves three state and eight state. The different tools used in structure prediction are jpred4, psipred, sspro8, porter5. A comparative study is performed between these tools and their advantages and disadvantages are evaluated. By knowing the structure we will be able to predict the function. The predicted structure can be used for docking studies.

Keywords: Protein, structure prediction, machine learning.

UBIQUITOUS TOOLS AND SOFTWARES FOR MICROARRAY DATA ANALYSIS

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Microarrays are one of the most advanced data analysis techniques in experimental molecular biology, allowing for the simultaneous monitoring of the expression levels of tens of thousands of genes. Arrays have been applied to studies in gene expression, genome mapping, SNP discrimination, transcription factor activity, toxicity, pathogen identification and many other applications. Efficient and reproducible techniques for microarray data processing are being developed these days.

This paper concentrates on various tools used in microarray data analysis, including, online resources, algorithms, web tools etc. Starting with several Bioinformatic tools for various steps involved in microarray data analysis such as, identifying differentially expressed genes, constructing protein-protein interaction networks, performing co-expression analysis, constructing survival plots etc. This paper also focuses on other pathway constructing tools, which are used in constructing interaction networks such as, Clusters, enrichment plots, gene ontology etc.

Keywords: Microarray data analysis, Bioinformatic tools, interaction networks, pathways

DISCOVERY OF NOVEL DRUG TARGETS FOR BLOCKING SYNTHESIS OF HIF1-β/VHL GENE INTERACTION THROUGH STRUCTURE BASED DRUG DESIGN AND INSILICO ANALYSIS

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The von Hippel-Lindau tumor suppressor gene (VHL) encodes a multifunctional protein, the mutations of which underlie the genetic defect in the familial VHL disease. Germ line mutations in VHL predispose the patients to several highly vascularized benign and malignant tumors, including renal cell carcinoma of the clear-cell type (ccRCC), hemangioblastoma (HB) and pheochromocytoma. The protein encoded by the VHL gene is best known as the substrate-binding subunit of an E3 ubiquitin ligase. Von Hippel Lindau gene is encapsulated with two Hypoxia inducible Factor (HIF)1? and HIF1? subunits. In normoxia condition HIF1? subunit is degraded by proteasomal action of degradation. In hypoxia condition HIF1? subunit is associated with HIF1?subunit. HIF1? subunit translocates to the nucleus where the dimer functions as a transcription factor so these HIF1? causing cancer.The purpose of drug design is to identify drug targets for HIF1? subunit and to block synthesis of HIF1? subunit. Gene transcription is inhibited by using structural based ligands so the gene pathway of HIF 1? is downregulated.

Keywords: Hypoxia inducible factor, Von Hippel-Lindau

A BRIEF INTRODUCTION TO ARTIFICIAL INTELLIGENCE

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Artificial Intelligence (A.I.) is a multidisciplinary field whose goal is to automate activities that presently require human intelligence. Recent successes in A.I. include computerized medical diagnosticians and systems that automatically customize hardware to particular user requirements. The major problem areas addressed in A.I. can be summarized as Perception, Manipulation, Reasoning, Communication, and Learning. Perception is concerned with building models of the physical world from sensory input (visual, audio, etc.). Manipulation is concerned with articulating appendages (e.g., mechanical arms, locomotion devices) in order to effect a desired state in the physical world. Reasoning is concerned with higher level cognitive functions such as planning, drawing inferential conclusions from a world model, diagnosing, designing, etc. Communication treats the problem understanding and conveying information through the use of language. Finally, Learning treats the problem of automatically improving system performance over time based on the system's experience. Many important technical concepts have arisen from A.I. that unify these diverse problem areas and that form the foundation of the scientific discipline. Generally, A.I. systems function based on a Knowledge Base of facts and rules that characterize the system's domain of proficiency. The elements of a Knowledge Base consist of independently valid (or at least plausible) chunks of information. The system must automatically organize and utilize this information to solve the specific problems that it encounters. This organization process can be generally characterized as a Search directed toward specific goals.

REVIEW ON UNSTRUCTURED LOG DATA PARSING

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Computer applications generate an enormous amount of data every day through their logs, system-generated files or other reports. This generated data depicts the state of the running system and contains abundant information that can be used for system diagnostics and monitoring. Due to the complexity and scalability of modern applications the volume of meta-data generated is enormous . There is a need for an automated way to extract the relevant data, which currently requires a multitude of custom parsers. Developing and testing custom parsers can be time-consuming. Instead, data can be automatically processed and parsed into a machine-readable format, building a generic model for standard or vendor-specific data.

The proposed method in this project reviews some existing unstructured data parsing approaches-1.Relationship-based extraction 2.Template-based extraction and 3.Deep learning-based extraction. These methods are implemented on different kinds of log files and the results are compared.

STATIC AND DYNAMIC PROGRAM ANALYSIS FOR AUTOGRADING OF COMPUTER PROGRAMS

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Programming assignment grading especially for computer programs, for an introductory programming course requires a considerable amount of human time and effort. Consequently large amounts of teachers are assigned to manually grade the programs each week. Since the instructions for grading are by nature, imprecise, there can exist a lot of variability between the grading of two teachers since it is prone to unintentional bias, a more severe problem is the perception of bias among the students whose programs are graded. Existing tools generate feedback with failing test cases. The main motivation of this project is to develop an automated grading tool that will address the above problems.

In this project it is proposed to build a tool that automatically provides real-time judgments with counter examples for programming exercises in introductory programming courses. The solution is based on program analysis, and more specifically, the technique of differential semantic analysis. With multiple correct implementations as the reference solution, the tool can search for the differences between the execution traces of a student's submission and the reference solutions. Program analysis is of two type's static and dynamic analysis. Dynamic analysis uses black box concept which depends on output result. The analysis requires program to be compiled run with output test cases. Static analysis uses white box concept without compiling and running the program. This approach uses code analysis knowledge to analyse program and give grading based on scoring objectives and parameters.

IOT BASED SENSOR DATA ANALYTICS USING ELK STACK

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With the Internet of Things enabling advanced connectivity of devices and systems, different types of sensors are being used in various use cases. These generate huge volumes of data which can be processed and analysed over distributed systems for the benefit of industries like healthcare, supply chain, agriculture, transportation and so on. Data generated helps to gather information on the state or condition of the device (or) environment, allowing administrators to make judgments about events that have happened.The administrators usually prefer to centralise the logs, so that they can receive, manage, and analyse logs at a single point. In this project, we propose the architecture model of a log management system using ELK Stack for smooth and user friendly monitoring. Elastic Stack is a set of open-source solutions from Elastic. It is designed to help users move data of any kind from any type of source and index, search, analyse, and visualise that data in real-time. It consists of File beat for shipping the logs, Logstash for extracting and indexing, Elasticsearch for storing, searching and analysing, and Kibana for visualising. It can be used along with Apache Kafka which is an open source distributed streaming platform generally used to build data streaming pipelines that move data between systems reliably.

STUDENT-CENTRIC SOCIAL NETWORKING PLATFORM

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We have many social media platforms in the present world that help us to connect with people. Social media is a dynamic platform that can be used to share news, knowledge, entertainment etc. In the present world where technology reigns supreme, we are still passing notices/information using papers in colleges which is not an efficient way of communication. There is no proper platform for colleges where students can connect with their faculty , seniors and even alumni to resolve their queries or discuss ideas.

The main objective of our project is to create a student centric social networking platform exclusively for colleges where students can explore more about their college, see what clubs are available , seek out help from their peers or faculty, share common interests and stay up to date with what's going around in the campus.

Our project consists of a website and a react-native app. It will promote teaching and learning through a more dynamic platform without causing any threat to privacy. In this platform, admins can select to which semester or classes, (or teachers) the notices should be sent to. All the students can contact faculty directly through this platform, this enables privacy for teachers to a certain extent since they do not need to share their personal contact details. It has a section for events and clubs, where all the clubs can showcase their achievements etc. A section for activities, where authorized faculty can post projects that the college needs or even random open-source projects where students can apply and work on them. This will help students to gain real world experience. After all, true skills can only be acquired through solving real life problems. It is also possible to know the interests of different members and group up members who have common interests. This will help people to get to know other people who share their interests in the college (or alumni).The app can also be used as a digital ID card. It has a Chatbot to answer all the general queries etc. At the end of the day, this platform is all about connecting to right people and enhancing the college experience both academically and socially. ReactJS is used for the front end and Python, Django is used for the backend. Natural language processing is used for implementing the Ch

AUTOMATIC ATTENDANCE USING FACE RECOGNITION

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Currently, with a worldwide pandemic all university and college are conducting online class and to maintain the attendance record with day-to-day activities is a challenging task. The conventional method of calling name of each student is time consuming and there is always a chance of proxy attendance. The following system is based on face recognition to maintain the attendance record of students. The daily attendance of students is recorded subject wise which is stored already by the administrator. As the time for corresponding subject arrives the system automatically starts taking snaps and then apply face detection and recognition technique to the given image and the recognize students are marked as present and their attendance update with corresponding time and subject id. We have used deep learning techniques to develop this system, histogram of oriented gradient method is used to detect faces in images and deep learning method is used to compute and compare feature facial of students to recognize them. Our system is capable to identify multiple faces in real time.

ANALYSIS AND CLASSIFICATION OF STOMACH TUMOR IMAGES USING TRANSFORM BASED TECHNIQUES

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The most common problems are tumors for humans which occur in different parts of a human body, like stomach, brain, mammary glands etc. These tumors convert into cancer and take the life of an individual. In the case of marginal tumors, sometimes if it is not traced at an early stage, the tumor gets converted into cancer and may take the life of an individual.

This work differentiates between Normal, Marginal and Critical tumor images of stomach using transform based methods. There are three steps to implement this work. In the first step pre-processing is done for all the images of a standard database which involves making the image invariant to Scaling, Rotation & Translation and all the images are also normalized to a size of 256 X 256 pixels. The threshold value for converting the image in to the binary form is also determined for obtaining maximum recognition accuracy. In the next step, the distinguishable features are extracted using 2D-FFT & 2D-DCT transforms. These features are extracted for both testing and training samples in the proposed model. The 80% of images are used for training and the other 20% images are used for testing. The classifier KNN with (k=1) is used to classify and identify the various stages of tumor in the intestine. The present proposed model as given an accuracy 83% for 2D-DCT features & 72% for 2D-FFT.

PRODUCT ANTI-COUNTERFEITING USING BLOCKCHAIN TECHNOLOGY

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Blockchain has been receiving tremendous amounts of attention in recent years especially after the pandemic, a ton of applications have emerged from this technology, and it is still expanding outwards. Counterfeit consumer goods are goods, often of inferior quality, sold under another brand name without the authorization of the brand owner, mostly for monetary gain. We will try to prevent product counterfeiting using blockchain technology. Any application using Blockchain technology as the base architecture ensures that the contents of its data are tamper-proof. Our paper uses the decentralized Blockchain technology approach to ensure that consumers do not have to fully rely on the sellers to determine if products are genuine. We will describe a decentralized Blockchain system with products anti-counterfeiting, in which manufacturers will be able to use the system to provide genuine products to customers without having to manage direct-operated stores, which can reduce the cost of product quality assurance significantly and improve customer experience.

FOUR WAY HACKSAW MACHINE

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In this project work and effort has been made to develop a modernized four way hack saw machine and less stress full operation for cutting wood metal and plastic materials. The aim of this project is to develop a hack saw machine that will use a less effort to produce uniform cutting of PVC pipes metals wood. It is also done to show a performance difference between hands driven pedal drive and four way hack saw machine this model implies a conversation of rotary motion of crank to reciprocating motion of hack saw blades, which is done by using scotch yoke mechanism. This motion is used for hack saw machine; in this model we can operate four hack saws at same time this model will over come the traditional hack saw machine which done material cutting for single piece at particular times interval and also bundan the need of more material cutting accounts to mass production this machine works significantly with minimum vibration and jerks. This machine will also done cutting for different materials; hence the purpose model of hacksaw machines will be welcomed by many industries due to compactness and efficiency. To achieve this goal the four hack saw machine is developed.

Keywords: Way Hack Saw Machine Scotch Yoke Machine Blades

STRESS DETECTION IN IT PROFESSIONALS BY IMAGE PROCESSING AND MACHINE LEARNING

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The increase in stress in IT professional has kept a stain in the environment. The main motive of the project is to detect stress in the IT professionals using vivid Machine learning and Image processing techniques. This system is an upgraded version of the old stress detection systems which excluded the live detection and the personal bundantly , but this system comprises of live detection and periodic analysis of employees and detecting physical as well as mental stress levels in his/her by providing them with proper remedies for managing stress by providing survey form periodically. This system mainly focuses on managing stress and making the working environment healthy and spontaneous for the employees and to get the best out of them during working hours. Machine Learning algorithms like KNN classifiers are applied to classify stress. Image Processing is used at the initial stage for detection, the employee's image is clicked by the camera which serves as input. In order to get an enhanced image or to extract some useful information from it image processing is used by converting image into digital form and performing some operations on it. By taking input as an image from video frames and output may be image or characteristics associated with that image.

Stress Detection System is designed to predict stress in the employees by monitoring captured images of authenticated users which makes the system secure. The image capturing is done automatically when the authenticate user is logged in based on some time interval. The captured images are used to detect the stress of the user based on some standard conversion and image processing mechanisms.Then the system will analyze, the stress levels by using Machine Learning algorithms which generates the results that are more efficient.

REPLENISHING THE EARTH-BIOCOMPOSTING OF DRY AND GREEN WASTE

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Biocomposting a unique method of dry and green waste from existing natural resources that boosts the plant shelf life ,channelizes forest ecosystems with proper nutrient , NPK values ,water restating capacity. Raw materials like banyan , jamun , orchids, rain tree, peepal , mango and eculyptus leaves have been chosen as bundantly available in Indian conditions and also improve the rate of composting. Depending upon the size the leaves are segregated into leaf baskets. The mulching process used to crush out the larger leaves and other clippings . An 8*8 pit has been constructed with the left out wood and cutdown trees and dumped up all the leafs collected in baskets in a three layer pile and exposed to atmospheric conditions. The mature last layer has been used first as seed balls where the soil mixed with compost and seeds rolled up into balls thrown on barren land proved to germinate trees with great shelf life and prone to less disesases or pests secondly transplantation method where nursery bags filled with soil plus compost and incorporating a seedling to grown up into a mature tree with acquetate nutrients and better water holding capacity which were the insulin plant and multivitamin tree. As chemical Engineers we are reaserching on NPK values ,soil helath and plant growth.

Keywords: Mulching process, Seedballs, Leaf shredder.

FORM CHECK: EXERCISE POSTURE CORRECTING APPLICATION

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Weightlifting is a popular sport and a hobby of millions; however, the risk of injury is high, especially when performed with incorrect form/posture due to voluntary or involuntary reasons. Our project develops an application that detects the cause of incorrect posture and provides remedial steps that need to be taken to correct the same, thereby providing an improvement in both safety and efficiency. Our Form Check application detects a user's form and evaluates the vector geometry of the form and provides necessary corrective measures as a feedback to the users' satisfaction. A large dataset of images containing the proper and improper form of various exercises are taken from various training guidelines and industry experts for a detailed evaluation. A list of corrective measures ranging entrang the weight to stretching, that helps improve the mobility of joints are mapped to specific imperfections in the stance of users during the exercise. An efficient machine learning model is built to for this evaluation. Form Check is designed for exercises that have high potential for the risk of injury like squats, deadlifts, etc and can run on Android mobile devices.

EFFECTS OF COVID-19 ON THE NERVOUS SYSTEM

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The pandemic has been devastating all around the world, causing mass destruction and loss of life. In addition to the deadly COVID-19, heart as well as brain health has taken a turn for the worse. Even after recovering from the coronavirus, patients seem to be succumbing to other illnesses, including but not limited to stroke, cardiac arrest, organ failure and paralysis. This is a cause of concern, and the factors that lead to the damage of the brain as well as well as other vital organs are being discovered. In the Central Nervous System, astrocytes are cells that perform essential functions such as blood flow control, synaptic support and axon guidance. These astrocytes are more vulnerable to infection by SARS-COV-2. The infected astrocytes are testament to some of the most common post-COVID symptoms, like "brain fog", anosmia and delirium. The blood flow to the neurons is blocked by disabling astrocytes and constricting blood capillaries, causing neuron impairment and ultimately necrosis. Studies have revealed increasing evidence of the immune system being triggered and causing an excessive inflammatory response, in response to the coronavirus pathogen. These immune cells can penetrate the blood-brain barrier and cause neural damage, as well as harm grey matter. Research about Covid-19's effect on the nervous system is being performed through imaging and tests of spinal fluid and blood, and a better understanding of the body's immune response is key.

QUANTUM CRYPTOGRAPHY

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Data security is an integral part for any person using a computer. The messages and data transfer between two persons should be highly confidential, the data should be highly secured and should not be vulnerable to attacks by a third person. Classical Cryptography serves this purpose of securing the data. Cryptography, or cryptology is the practice and study of techniques for secure communication in the presence of adversarial behaviour. More generally, cryptography is about constructing and analysing protocols that prevent third parties or the public from reading private messages. Various aspects in information security such as data confidentiality, data integrity, authentication, and non-repudiation are central to modern cryptography. But in a world where the technology is advancing rapidly the innovation of computers is inevitable. There are lot of advantages as well as disadvantages with the rapidly evolving technologies. While the technology is being innovated for research and medical purposes it is also being used by the attackers to steal highly confidential information. Such an emerging technology is the concept of quantum computing. The quantum computer can perform much better than the classical computer in all terms. It can perform complex computations very fast thus making it much superior to the classical computer. The attackers can easily break the classical cryptographical algorithms using the quantum computers. If this happens the whole network can fall apart. To avoid this problem, we use the concept of quantum cryptography. Quantum cryptography also contains quantum key distribution. To understand the concept of quantum key distribution we should know the concepts of quantum superposition, quantum entanglement QUANTUM CRYPTOGRAPHY and the uncertainty principle. The most basic quantum cipher protocol is BB84 protocol. This paper deals with the differences between the classical cryptography and the quantum cryptography. It also discusses the various concepts used in quantum cryptography.

BLOCKCHAIN AND SUPPLY CHAIN: THE PERFECT UNION OF EFFICIENCY AND TRANSPARENCY

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Industry 4.0 involves innovations with upcoming digital technologies, and blockchain is one of them. Blockchain can be incorporated to improve security, privacy, and data transparency both for small and large enterprises. This technology has gained much recognition and can enhance the manufacturing and supply chain environment. Today, companies need to be agile, flexible, and responsive to survive. Those that drive continuous innovation throughout their businesses and supply chains - and differentiate themselves in a highly competitive market by remaining dynamic and relevant - are the ones that succeed. It can be proposed that Blockchain needs to be introduced in Companies for faster and more secure workflow; Blockchain driven innovations in the supply chain will have the potential to deliver tremendous business value by increasing supply chain transparency, traceability, reducing risk, and improving efficiency and overall supply chain management. Blockchain can enable more transparent and accurate end-to-end tracking in the supply chain: Organizations can digitize physical assets and create a decentralized immutable record of all transactions, making it possible to track assets from production to delivery or use by end user. This increased supply chain transparency provides more visibility to both businesses and consumers. This technology when incorporated can drive increased supply chain transparency to help reduce fraud for high value goods such as diamonds, pharmaceutical drugs etc. Blockchain could help companies understand how ingredients and finished goods are passed through each subcontractor and reduce profit losses from counterfeit and Gray market trading, as well as increase confidence in end-market users by reducing or eliminating the impact of counterfeit products.

MANUFACTURING OF FLYING HOVERBOARD/HUMAN DRONE WITH FUEL CELL

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Hover Board is one that can float in air and move around by carrying upto 120 kgs in air (weight depends upon number of motors/propellers we use). Hover board is a levitating board used for personal transportation, Since it was first described in science-fiction, many attempts have been made to invent a functioning hoverboard but none have demonstrated. Hover Board used to fly with propellers which is connected to a motor then motor connected to electronic speed controller which having connection with Fuel Cell, every Propellers fallows same connections with Fuel cell. In ordered to fly a human, needed 8 Dc motors, Propellers, ESC, Fuel Cell, Transmitter, Receiver and mother board. It reduces time, pollution, minimize accidents, emergency service & Disaster Recovery and Zero Emission Device.

Keywords: Flying Hover Board, Human Drone, Octa copter, self-levitating board.

INTEGRATING EFFICIENT FLOW PROCESSES AND VALUE CHAINS THROUGH TIME AND MOTION STUDY: AN IKEA PERSPECTIVE

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With markets becoming highly volatile, organizations aspire to flourish in an ever-changing and dynamic environment. The changes in the current market are rapid and the products and services offered by firms should keep up with the pace of technological advancement. While combing customer co-creation with process planning and supply chain, this paper analyses flow processes of the Swedish-based home-furnishing retailer IKEA.

It studies the entrats of centralised supply chain networks at IKEA and explores how the planning processes and systems along with organizational planning together form a entralized planning approach. This paper is based on an exploratory case study that implements flow process layout to organize and visually display a time framework of everyday operations regarding man and equipment handling. Eventually, the paper also reflects upon the refined framework to increase efficiency in product loading and unloading and minimize customer billing time.

This is a first approach to include a thorough time and motion study of operational activities at IKEA that provides a detailed analysis into the huge corporation's supply chain. The findings show that a refined flow process network is a necessity to ease number of operations, lower production costs and maximize efficiency. The paper concludes with improved methods to maximize production and affordability.

Keywords: Flow Process Chart, Supply Chain, Work Study, Work Measurement, Method Study, Process Planning, Centralization, IKEA

References:

1. Daniel Hellström Fredrik Nilsson, (2011),"Logistics-driven packaging innovation: a case study at IKEA", International Journal of Retail & Distribution Management, Vol. 39 ISS 9 pp. 638 - 657
2. Jonsson, P., Rudberg, M., Holmberg, S. (2013), "Centralised supply chain planning at IKEA", Supply Chain Management: An international journal, Vol. 18, No. 3, pp. 337-350

DESIGN AND FABRICATION OF DIE SET FOR FORGING AND AEROFOIL BLADE

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Blockchain and Cryptocurrency have become the latest buzzwords in the field of Computer Science since the past 2-3 years. It has the potential to completely take over the traditional Financial Institutions we know since the past century and bring about Web 3.0. In order to do this the technology has to be highly secure. To understand how and why Blockchain is so secure and reliable we need to first understand how the different Blocks are linked together in a Blockchain Network. The blocks in a Blockchain are linked with the help of a Hashing Algorithm. A hashing algorithm is a one-way mathematical function which generates a unique output for every unique input. The Bitcoin

Network uses a SHA-256 Hash. A basic block has a data, hash and previous hash field. The hash value of any block is dependent on the hash value of the previous block, therefore making it very difficult to alter the data as any tampering would require altering hashes of each and every subsequent block in the Blockchain. A typical Blockchain Network can have millions of blocks on its chain. This makes it virtually impossible to alter the Blockchain, thereby making it so secure.

EXTRACTION AND ANALYSIS OF LIMONENE ACID FROM ORANGE PEELS

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Oranges are some of the most commonly utilized fruits in the world due to its pleasant taste and nutritional values. Because of the huge consumption of orange juice throughout the world, a large amount of wet solid waste is produced. This waste mainly includes orange peels. Citrus oil is an essential oil present within the rind of wall of a citrus fruit. In the present investigation orange peels is used for the extraction of citrus oil. After extraction of juice, the orange peels are treated as waste and lead to environmental pollution due to improper disposal can be used for the extraction of citrus oil. Collection of orange peels from orange fruits, The peels are weighed and take 200gm to the round bottom flask, And take 400 ml of distilled water and add to the round bottomed flask, And the mixture is distilled by steam distillation for the recovery of limonene ,Collect the 50% of condensate in a beaker, And a thin layer is formed in the surface of a condensate, It is separated by using separating funnel, Physical and chemical properties of an acid is tested these steps include in the extraction of limonene acid

Keywords: limonene acid, distillation, citrus oil, extraction

DESIGN AND FABRICATION OF SOLAR PANEL EFFICIENCY ENHANCEMENT WITH SUN TRACKING AND COOLING

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Solar Energy is the most abundant and can be easily converted to electricity utilizing solar panels, but due to the transition of the sun from east to west, the settled solar panel may not be able to produce optimum energy. This paper extends the talk about the research and development mechanism of the model for the solar panel to track the Sun Direction in a dual axis mode with a cooling system. The main aim of this mechanism is to program the Arduino in such a way that the panel direction and LDR sensors should be continuously in contact with the sun rays, and this can be obtained using DC Servo Motors to change the direction of the panel. Constant sun rays on the panel may reduce efficiency as the panel attains high temperatures. To resist overheating, a better cooling framework is used which utilizes water and pump arrangement to extend the productivity of the panel by sprinkling/spraying the water. This will keep the solar panel temperature to the most efficient level. Advance, this mechanism can be integrated by employing a Real-Time Clock to follow the sun's direction. This helps in keeping up the desired position of the panel even if the power is interrupted in between and can be used by solar for electrical purposes.

Keywords: Solar Panel, Solar Tracking, Arduino, Light Depending Resistor (LDR)

DESIGN AND FABRICATION OF MAGNETO ENGINE

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In 21st century, the demand for the usage of energy has been risen drastically and it is estimated that there will be an elevated demand in future too. The utility of fossil fuels is being increased day by day which is leading to rise in emission of greenhouse gases which has much effect on planet Earth. It is the responsibility of every human on the earth to safeguard the environment due to the present situation of Global warming. As an Engineer to lower the greenhouse gas emissions it is required to discover alternatives. This project is one of the main power sources for power generation in automobiles. The project describes the design and construction of Magnetic piston engine, which operates with the help of magnetic forces using Neodymium magnets. Instead of utilizing fossil fuels, the magnetic forces will drive the engine, which also make use of slider-crank mechanism alike conventional IC engine. But this project employs two permanent magnets which have high magnetic power. One of the magnets is mounted on cylinder head and the other is mounted on piston head. The utilization of magnetic attraction and repulsion forces will reciprocate the piston inside the cylinder and thus rotational energy is achieved at the crack shaft.

DESIGN AND FABRICATION OF VAPOUR COMPRESSION REFRIGERATION CYCLE AND WATER GERERATOR

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Affordable access to potable water is a global issue, as approximately 844 million people around the world lack access to clean water. Atmospheric water generation can address this issue by generating potable water from the water vapor present in air. One technology to be utilized for atmospheric water generation is the vapor compression refrigeration cycle (VCRC), which generates water from ambient air by cycling a refrigerant to create a cold surface on which water vapor will condense. The parameters for condensation are dependent upon environmental constraints, including temperature and humidity of the ambient air. The scope of this project is to design and build a prototype VCRC capable of delivering 500cc of liquid water from ambient air per hour. To do this, the system was first simulated using the relevant thermodynamic and heat transfer phenomena in the VCRC to determine the design parameters. The simulation results dictated the purchasing of various components and assembling of hardware to achieve the aforementioned goal of 500cc/hour as a proof of concept for further future research into adaptation for large scale ecological applications, such as hydroponic greenhouses. With successful water generation in low humidity ambient Worcester conditions, the VCRC will be extremely efficacious in supplying potable water to a community when integrated in a constantly humid hydroponic greenhouse.

Keywords: vapor compression refrigeration cycle, Water Generator

DESIGN AND FABRICATION OF VOICE COMMAND ROBOT CAR USING ARDUINO UNO

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Voice controlled robotic system is very beneficial in areas where there is high risk for humans to enter. Although robot vehicles used to be controlled only manually by remote controllers, today it is possible to control them via voice commands. The main aim of this project is to design a robot that can be operated using Android Application. The objective is to design a robotic car whose basic movements such as moving forward, backward and turning to left or right can be controlled by the human voice. In this system, an android app is used as a medium for the transmission of human commands to microcontroller of Arduino UNO through Bluetooth module. The speech is received by the android app and transmitted to Arduino through Bluetooth and further processed by the Arduino which takes suitable action to regulate the robot. Hence there exists a simple and very efficient way to manipulate robots through our voice. This is an ergonomic approach for the ease of robotic application. Such types of robots will provide great helping hands while performing multiple tasks. The result of the study also shows that there still exists plenty of space for further research and development.

RECHARGEABLE HOVERBOARD

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As everyone Know technology is rapidly developing all over world, but maximum people were not aware of the new inventions that's the reason this project is designed on Same scope to bring awareness among people which helps for personal transport purposes. The Hover board is a type of vehicle which is used for personal riddling purposes and it is moved with the help of 3 wheels. Hoverboard will run with the help of electrical motor with a speed of 30Mph. It saves our time and money and also regulates our daily exercises. The project is design in such a way that the rider needs to hold back straight while riding it. In addition, the shoulder, edge, legs, feet and wrist get completely worked. This project is Eco-friendly to Environment and it also make sure full security of rider while riding the Hoverboard.

DESIGN AND FABRICATION OF MULTI AXIS WELDING WITH AUTO INDEXING

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In electric arc welding or gas welding the need often arises for welding of circular shape components, where the welding is carried out on the entire periphery or a partial arc length of the job, the electrode should be moved along the circular path, but the movement of the electrode is difficult in convention method where welder has to move the electrode by hand along the circular path. It is tough job for welder to produce the same quality throughout the production of weld joints of circular shape. A lot of factors such as the fatigue of welder due to longer working hours etc., are influential in quality of final product. These factors may create the possibility that weld joints may get damaged or even scrapped due to poor quality. This may result in increasing the cost of the production and manpower also overall production time may get increased. Moreover, welding is a hazardous practice to the welders if proper precautions are not taken. So, there is necessity of a machine that can manufacture the good quality weld joints at maximum production rates for the batch production as well as mass production. At the same time the machine has to ensure that it assists the welder for production circular joints and reduces the hazards to the welder while performing the welding operation.

The project mainly concentrates on designing a machine with auto indexing that produces the circular components with good profile and homogeneity of the weld joint with less defects. This machine can rotate the job at fixed rate to assist the welder in order to fabricate circular weld joints at good production rate as well as superior in quality. In fabrication of the machine a worm and worm wheel, a motor, belt drive, proximity sensor, ball bearing, electronic relay, inching switch are used. A detail study is carried out while designing the parts and we referred standard values to obtain dimensions, and the obtained dimensions are verified whether they are safe to use for mechanical operation and this ensures the that machine is safe for performing welding operation. This model has applications in production of small cylinders, compressors, and bottle filling plants.

Keywords: Auto indexing

STEM CELLS TO CURE EYE DISEASES

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With the onset of a new scientific era and the advent of research, recent years have witnessed an exponential improvement in the quality of healthcare and the potential it harnesses in identification, diagnosis and treatment of diseases small and big. One such area that has been identified to have incredible potential in curing a wide array of life compromising diseases is the study and development of stem cells. Since stem cells are undifferentiated cells that possess the ability to develop into any cell, they can be used as a form of self renewal therapy to produce appropriate cells for the associated ailment. Stem cell therapy could be used to cure blindness even in the late stages of eye disease by coaxing the cells into becoming specialized retinal or corneal cells that could replace the previously damaged cells. Both embryonic and adult organs harbor stem cells, so they are widely and readily available for utilization. They have proven to restore vision and prevent continued deterioration without the requirement of invasive surgery.

Keywords: Eye diseases; Research; Therapy; Stem Cells; Regenerative Technology

REDUCTION IN MANUFACTURING COST OF BODY IN WHITE BY IMPLEMENTING CASTING

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Body in White(BiW) is the stage in automobile where body shell structure sheet metal components are welded together in weld shop just before painting. BiW uses mostly Steel(More than 70% of it).The search for alternative material other than Steel has become pertinent due to, increase of 101.5% compared to October of 2020 levels and increase of economic burden due to import of Steel by spending foreign exchange. Aluminium has low density, has excellent corrosion resistance and can be easily cast, machined and formed. It is also non-magnetic and non-sparking. It is the second most malleable metal and the sixth most ductile. Steel trumps Aluminium in terms of pricing. But to add in overall cost of manufacturing using stamping and additional patch work using labour as compared to casting once, Aluminium will be a better choice. Specifically the "AA 386" alloy.First, let's start by taking a look at Tesla's patent application titled "Die Cast Aluminum Alloys for Structural Components", which was filed on the 20th of January 2021 and published on the 29th of July 2021. The inventors are Jason Stucki, Grant Patinson, Quinlin Hamill, Avinash Prabhu, Shiv Palanivel, and Omar Lopez-Garrity. Casting maching company IDRA's hulking OL6100 CS (with upgraded locking force to handle the special Tesla casting), replace around 70 stampings, extrusions and castings that currently make up the same fabricated assembly in the Model 3, on which much of the Model Y is based.

SEISMIC PERFORMANCE OF MULTI STORIED BUILDING USING DIFFERENT TYPES OF DAMPERS BY ETABS

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Structures are mainly subjected to various types of loading conditions such as earthquake, wind loads etc. For earthquake zone areas, the structures are designed considering seismic forces. The structure which are present in higher earthquake zone area are liable to get damaged or collapsed, hence to increase the safety of these structure few retrofitting techniques or addition of materials to stabilize the structures against the earthquake forces are done. In seismic structures upgrading, one of the lateral force reduction caused by the earthquake is use of dampers. During an earthquake, high energy is applied to the structure. This energy is applied in two types of kinetic and potential (strain) to structure and it is absorbed or amortized. And if the retrofitting techniques are adopted then cost plays an important role and possibly few spaces will be compromised depend upon the type of methods adopted. Later the structure may be strengthened by adding materials externally to transfer the lateral loads i.e. some protective devices have been developed. In modern seismic design, damping devices are used to reduce the seismic energy and enable the control of the structural response of the structure to that earthquake excitation.

For the present study, a 15-story structure which is symmetrical in plan is modelled using the ETABs 2016 software. To analyze the structure, the static and dynamic analysis method is adopted. The response spectrum function and Time history analysis is defined to carry out dynamic analysis. To control the seismic response and to increase the stiffness of the structure, viscous damper are provided to the structure. The structure with viscous damper is modelled and analyzed with same parameters.

Keywords: Structures, Dynamic Analysis, Seismic Response, Earthquake, Viscous Damper.

SIMULATION STUDIES ON PYROLYSIS OF WALNUT SHELL

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Agricultural Biomass is the greatest energy potential for Bioenergy production. Effective utilization of Biomass waste alleviates various problems such as; pollution, waste disposal, and excessive fossil fuel usage. Nutshell waste is beneficial for bioenergy production due to its high sturdiness, biodegradability, hardness and least moisture content. A million Tonnes of Walnut shell waste is generated every year. Among the various treatment methods such as Incineration, Anaerobic Digestion, Gasification, etc. Pyrolysis stands out to be an Environmentally friendly treatment technique to obtain value-added products such as Syngas, Bio-oil, and Biochar. In the present work, the simulation studies on Walnut shell pyrolysis have been carried out at 300-800^{o}C. Further, the product composition for Syngas, Bio-oil, and Biochar for various temperatures has been investigated.

A REVIEW OF HAND GESTURE RECOGNITION TECHNIQUES FOR GESTURE CONTROL SYSTEMS

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Gesture control is the capability to identify and interpret human body gestures to interface with and operate a computer system without having to touch it directly. Mouses and trackpads are essential for interacting with the UI of most current-day computers, but the usage of a physical mouse is not always feasible. The mouse may be out of the reach of a user or not available at all at some point in time. Other factors such as a physical disability might make it hard for a person to fetch themselves a remote or a mouse. Using a mouse when there is no flat/ suitable surface is not possible either. For the afore mentioned problems, a gesture-based system to control the cursor, or to scroll from afar is the perfect solution. Several other functionalities such as turning up or turning the volume down can also be included in the same system to further increase accessibility.

STEM CELL RESEARCH AND THERAPY

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The human body is made up of many different types of cells. Most cells are specialized to perform particular functions, but they cannot differentiate. Stem Cells have the potential to develop into different types of cells. They serve as a repair system of the body. Stem cells provide new cells for the body as it grows and replaces specialized cells that are damaged or lost. These can originate from two main sources such as 'Embryonic stem cells' and 'Adult stem cells.' Embryonic stem cells are pluripotent. These are found in the three germinal layers of the embryo. Adult stem cells are multipotent. These are found in differentiated tissues but they remain undifferentiated. 'Induced pluripotent cells are the cells that are grown in a lab by taking normal adult cells like skin or blood cells and reprogramming them to become stem cells. Stem cells are harvested from the bloodstream. Distinct stem cells require different culture conditions. These stem cells are also used in therapy i.e., for the treatment of spinal cord injuries in humans. Preservation of stem cells is mainly used for both research and stem cell-based therapies. It permits the development of cell banks. The stem cells are collected from blastocyst bone marrow, dental pulp, liver tissues, placenta tissue, skin, and umbilical cord blood. On the concept of stem cell donation, numerous stem cell banks in various places of India are Chennai, Hyderabad, Bangalore, Kolkata, Gujarat, Mumbai, Gurgaon. Stem cell banking and preservation may be used for treatment in the future when they are required.

Keywords: Stem cells, umbilical cord, cryopreservation, stem cell banks, cell therapy.

ANALYSIS OF REGULAR AND IRREGULAR RC BUILDING IN SEISMIC ZONE WITH AND WITHOUT SHEAR WALL & BRACING

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The greatest challenge for any structural engineer in today's scenario is to design seismic-resistant structures. The behaviour of regular and irregular building with and without shear wall and bracing under seismic motion. Two varieties of G+10 building geometry of are considered in this; one is regular building with and without shear wall & bracing and another one is irregular building with and without shear wall & bracing. The buildings are modelled and analysed in software Staad Pro. Various parameters are considered such as lateral displacement, stiffness, and storey drift. Seismic analysis is done as per IS: 1893-2002(Part-1) code of practice. Seismic zone V and type of soil II (medium) strata are taken for all of instances. Analysis of buildings is done by equivalent static method and response spectrum method. The results from the analysis are obtained and the results are compared for regular building with and without shear wall & bracing and irregular building with and without shear wall & bracing using graphical form.

Keywords: Staad Pro , Regular, Irregular, Bare frame, Shear wall, Bracing, Displacement, Storey drift, Stiffness.

BIO OXIDATION - A GREEN PROCESS FOR CONTROLLING AIR POLLUTION

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Bio-oxidation is a biological air pollution control technology that utilizes bacteria & fungi to biologically absorb and digest vapor-phase VOC's (volatile organic compounds) and odorous compounds commonly found in industrial and municipal applications. In air pollution, bio oxidation is simply the use of microbes to consume pollutants from a contaminated air stream. Almost any substance, with the help of microbes, will decompose (decay) given the proper environment. This is especially true for organic compounds. But certain microbes also can consume inorganic compounds such as hydrogen sulfide and nitrogen oxide. Bio oxidation is a "green" process, whereas the traditional approaches are not. Combusting any fuel will generate oxides of nitrogen (NOx), particulate matter, sulfur dioxide (SO2), and carbon monoxide (CO). Bio oxidation usually do not generate these pollutants or any hazardous pollutants. Microbes have inhabited the Earth since the time that the Earth cooled sufficiently to allow any form of life to exist. Microbes have a simple life cycle; they are born, eat, grow, reproduce and die. Their diet is based primarily on carbon-based compounds, water, oxygen (for aerobic reactions) and macronutrients. Bio oxidation use microbes to remove pollutants from emissions by consuming the pollutants. The concept is simple, but the execution can be quite complicated.

USE OF REUSABLE LIGHTER THAN AIR SYSTEMS FOR MISSILE LAUNCH OPERATIONS

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Abstract of the Paper : Lighter than air systems have started to bounce back in this era due to better durability, and cheap to manufacture. In this paper, I tried to express through the proofs and mathematics, how efficiently these systems can be used in missile launch operations to fulfill all the desired criteria for a given missile. The desirable characteristics of a missile are:

1. More energy before impact.
2. Greater allowance for Payload mass (explosive)
3. Greater range.
4. Less propellant mass to be used to compensate it with other masses and loads.
5. All the above to be done in a highly economic fashion.

From the conclusions which we have drawn from the analysis in the above paper, we have fulfilled all these 5 characteristics fora missile. A keen and correct selection of material, huge volume of the envelope and a better non-inflammable lifting gas, we can easily lift the missile up to a desired point, enough for efficient operation.

In the entire human race of missiles, airplanes were the only launching source for Air-Surface missiles. In this paper, I have made an attempt to portray how Lighter Than Air Systems, much cheaper than airplanes, can be used as efficient launch source.

STUDY ON THERMAL PROPERTIES OF CeO2/WATER NANOFLUIDS FOR HEAT TRANSFER APPLICATIONS

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Heat exchangers are devices used to exchange heat between two or more fluid. They are widely used in the mechanical and chemical industries. The heat transfer fluids which are used for cooling purpose in the heat exchanger have lower thermal conductivities. In order to increase the thermal conductivity of heat transfer fluids, nanometre - sized particles which are oxides of metals called as nanoparticles are dispersed in the heat transfer fluids and then these fluids are called as nanofluids. Many researchers have studied that by adding Nano particles the thermal conductivity of heat transfer fluids increases. Furthermore, thermal conductivity of nanofluids increase with increase in nanofluid concentration. The double pipe heat exchanger is considered for this work and the nanoparticle taken is CeO2. In this work, the properties of CeO2/water nanofluid are analysed by varying the volume concentration of CeO2/water as 0.05%, 0.1% and 0.3% at temperatures of 30°C, 40°C, 50°C, 60°C of nanofluid and the properties of nanofluids are measured. The properties measured are density, thermal conductivity, viscosity and specific heat. It is observed that the density and viscosity increase with the increase in nanoparticle concentration and decrease with the increase in temperature. The thermal conductivity increases with the increase in nanoparticle concentration and increase in temperature. The specific heat decreases with the increase in nanoparticle concentration and increases with increase in the temperature.

TEM CELLS TO CURE EYE DISEASES

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With the onset of a new scientific era and the advent of research, recent years have witnessed an exponential improvement in the quality of healthcare and the potential it harnesses in identification, diagnosis and treatment of diseases small and big. One such area that has been identified to have incredible potential in curing a wide array of life compromising diseases is the study and development of stem cells. Since stem cells are undifferentiated cells that possess the ability to develop into any cell, they can be used as a form of self renewal therapy to produce appropriate cells for the associated ailment. Stem cell therapy could be used to cure blindness even in the late stages of eye disease by coaxing the cells into becoming specialized retinal or corneal cells that could replace the previously damaged cells. Both embryonic and adult organs harbor stem cells, so they are widely and readily available for utilization. They have proven to restore vision and prevent continued deterioration without the requirement of invasive surgery.

Keywords: Eye diseases; Research; Therapy; Stem Cells; Regenerative Technology

NEUROLOGICAL AND NEUROPSYCHOLOGICAL EFFECTS CAUSED BY INFANT MALNUTRITION

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Malnutrition is the condition that develops when the body is deprived of vitamins, minerals and other nutrients which is required to maintain healthy tissues and organ function . Infants profoundly experience the ill effects of nutritional deficiency. Given that a lack of nutritious food at a young age has a negative impact on the central and peripheral nervous system. The lack of environmental stimulation associated with malnutrition worsens the damage to the central nervous system. All the alterations that are observed in such cases give rise to important compromise of the child's higher brain functions, which may well lead to permanent neuropsychological damage. Malnutrition causes eminent morphological changes in the cerebrums of infants and children, especially between the age of 1-4.

REPRODUCTIVE TECHNOLOGY IN ANIMALS

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In the production system, reproduction is one of the important roles. We must focus on a production that is at a rate where replenishment of stock is greater than its use and this can be done by improving genetic quality of stock. A proper and scientific approach is required to have a general care and wellbeing of animals like cattle for dairy and domestic pig etc... This can be achieved by certain technologies that have been discovered in the field of animal biotechnology. Hence the knowledge of these trends and procedure is highly required. After the discovery of the transgenic mice and the first in vitro bovine embryos were created it lead to the rapid development of the merging of biotechnology in animal sciences. An attempt has been made in the paper presentation to describe the information sources and processes which are available in the field of animal biotechnology.

TRUESITE -(WEBSITES CLASSIFIER) USING MACHINE LEARNING

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Fake websites have become increasingly pervasive, generating billions of dollars in fraudulent revenue at the expense of unsuspecting Internet users.A phishing website is a common social engineering method that mimics trustful uniform resource locators (URLs) and web pages. The objective of this project is to train machine learning models and deep neural nets on the dataset created to predict phishing websites. Website content-based features are extracted from dataset. Many resources are spent by organizations guarding against and recovering from cyber attacks by online hackers who gain access to sensitive and valuable user data. Cyber crimes are accomplished through phishing attacks where users are tricked into interacting with web pages that appear to be legitimate. Since humans are so susceptible to being tricked, automated methods of differentiating between phishing websites and their authentic counterparts are needed as an extra line of defense. The aim of this project is to develop methods of defense utilizing various approaches to categorize websites. To evaluate our project and performance, the dataset is split into different parts to test and train and then the accuracy is calculated based on the results In this project, the data does not have any kind of temporal relationship

SMART HEALTH MONITORING SYSTEM BY USING RASPBERRY PI

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Recently, Healthcare problems have risen in mainly over populated countries where India is one of them as the huge population is rising day by day and the need of helping sick normal people is rising day by day increasing the health problems. Healthcare is an important key component of the IOT technology, since it eliminates the difficulties of issues to solve the problems with the help of iot. In this Project, we are proposed a solution that is a health monitoring system which is capable of taking the patient's health by integrating the diagnosis and treatment by monitoring a people include the microcontroller with inbuilt ADC,Blood glucose sensor, pulse oximetry (SPO2) sensor, ECG sensor, air flow sensor of a person. This system is helpful for normal people, where in nearby clinics can be in touch with city hospitals about their patient health conditions. However, if any changes occur in a patient's health based on standard values then the IoT system will alert the physician or doctor accordingly.

LUNG CANCER DETECTION FROM CT SCAN USING IMAGE SEGMENTATION AND CNN

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Lung cancer is the leading cause of cancer-related deaths for both men and women across the developed world. Usually, radiologists must analyse and evaluate medical images comprehensively in a short time. But with the advances in modern medical technologies, the amount of imaging data is rapidly increasing. Deep Learning provides an effective ways to automate the analysis and diagnosis for medical images. The aim of this project is to develop a website that uses a deep learning model to effectively detect the presence of lung cancer using the provided CT images by the user. To evaluate a models performance the dataset is split into different parts to train and test and the results are used to calculate the accuracy of the model. We are using Watershed algorithm to perform image segmentation on the input images and then the segmented images are fed to VGG-16 model which performs the task of classification. Then the results are used to generate a medical report which can be shared with other users. Although VGG-16 takes time to train, we might receive 90.1% accuracy.

INTRACRANIAL HEMORRHAGE DETECTION USING CNN

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The main aim of our project is to provide a solution for the revelation of brain hemorrhage within a CT scan with the help of convolutional neural networks (CNN). In the beginning stages of brain bleeding, physicians face difficulties in detection of brains that may have hemorrhage, which adds to a misdiagnosis. This challenge faced by the physicians will lead to the breakdown of their treatment. To resolve this issue, we have come up with this idea. In this project we detect and diagnose the type of hemorrhage using CT scans.

Intracranial hemorrhage(ICH) is a source of significant morbidity and mortality. It is a frequently encountered clinical problem with an overall incidence of 246 per 10,00,000 persons. A non-contrast computed tomography(CT) scan of the head is the most common method used to diagnose Intracranial hemorrhage(ICH) as it is fast, accurate, and widely available. Intracranial hemorrhage(ICH) related to mortality occurs within the first 24 hours, so rapid and accurate diagnosis is required, that can improve the probability of survival.

Convolutional Neural Network(ConvNet/CNN) is a Deep Learning algorithm which can take in an input image, assign importance (learnable weights and biases) to various aspects/objects in the image and be able to differentiate one from the other. So we use CNN algorithm to implement our project.

References:

[1]. Fleishon, H.B. & Haffty, B. G. Docket no. fda-2019-n-5592 "public workshop - evolving role of artificial intelligence in radiological imaging;" comments of the American college of radiology (2020).

[2]. Rao, B. et al. Utility of Artificial Intelligence Tool as a Prospective Radiology Peer Reviewer Detection of Unreported Intracranial Hemorrhage. Academic Radiology (2020)

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NEUROLOGICAL AND NEUROPSYCHOLOGICAL EFFECTS CAUSED BY INFANT MALNUTRITION

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Malnutrition is the condition that develops when the body is deprived of vitamins, minerals and other nutrients which is required to maintain healthy tissues and organ function . Infants profoundly experience the ill effects of nutritional deficiency. Given that a lack of nutritious food at a young age has a negative impact on the central and peripheral nervous system.

The lack of environmental stimulation associated with malnutrition worsens the damage to the central nervous system. All the alterations that are observed in such cases give rise to important compromise of the child's higher brain functions, which may well lead to permanent neuropsychological damage. Malnutrition causes eminent morphological changes in the cerebrums of infants and children, especially between the age of 1-4.

Having special health care needs due to neurological, neuropsychological, and mental health conditions can add to the challenges infants and children face as they learn to navigate social situations in school and in life. It is only rightful to bridge the gap between neurological disorders and their effect on infant mental health and bring it to limelight. The importance of keeping both balanced is key to ensure that proper physical, emotional, mental and social healthcare is maintained.

Keywords: Infant, malnutrition, central and peripheral nervous systems, neurological disorders, mental health

FUEL CELL VEHICLE

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The fuel-cell electric vehicle (FCEV) has been defined as a promising way to avoid road transport greenhouse emissions. FCEV is an electrically driven vehicle in which electricity is generated by a fuel cell using hydrogen as an energy source. The electric drive converts the energy into motion. Long regarded as a far-future technology, proton exchange membrane (PEM) hydrogen fuel cell systems have be more compact. The fuel cell electric drive system is an economical and attractive technology for mobility with zero local emissions. FCEV have the potential to address both the environmental and oil dependency problems in transportation. FCEVs use a propulsion system similar to that of electric vehicles.. FCEVs are filled with pure hydrogen gas stored in a tank on the vehicle.FCEVs are equipped with other advanced technologies to increase efficiency, such as regenerative braking systems, which capture the energy lost during braking and store it in a battery. Fuel cell vehicles are only environmentally bengin when the hydrogen was produced with renewable energy If this is the case fuel cell cars are cleaner and more efficient than fossil fuel cars. However, they are not as efficient as battery electric vehicle which consume much less energy. Usually a fuel cell car consumes 2.4 times more energy than a battery electric car, because electrolysis and storage of hydrogen is much less efficient than using electricity to directly load a battery. Major automobile manufacturers are offering a limited but growing number of production FCEVs to the public in certain markets, in sync with what the developing infrastructure can support.

Keywords: FECV(Fuel Cell Electric Vehicle), Hydrogen,PEM(Proton Exchange Membrane),Battery Electric Vehicle, Renewable energy.

DESIGN AND OPTIMIZATION OF SINGLE - PHASE MICROCHANNEL COOLING SYSTEM IN ELECTRONIC DEVICES

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Semiconductor devices generate a large amount of heat (100 W/cm2). These high-power devices can be cooled off very effectively by liquid coolant flowing through the microchannel heat sink. Microchannel heat sinks are very attractive because of their compactness, light weight, and large surface-to-volume ratio. Higher surface-to-volume ratio results in enhanced cooling performance. In this project, a systematic robust analytical method is presented for the design, analysis, and optimization of a single-phase liquid-cooled microchannel heat sink. Effects of various design parameters such as footprint of heat source or device, thickness of the heat sink base, channel aspect ratio, number of microchannels or fins, coolant flow rate, coolant velocity, coolant temperature change in the system, Pressure drop in the system and thermal conductivity of heat sink material on heat sink thermal resistance and pressure drop are delineated. Finally, analytical results of the system with the spacing width of 50 microns to 150 microns are compared with calculated data and a good agreement is obtained. The system with a spacing width between 75 microns and 10 microns is observed as a great fit for the dimensions that are been considered in this paper. The analytical method helps to reduce the design cycle time and time to market significantly.

PEOPLE'S BEHAVIOURAL ANALYSIS IN CHAT'S USING NATURAL LANGUAGE PROCESSING

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In recent times, the mode of conversation is particularly via messages. A variety of statistics has been conveyed through WhatsApp. WhatsApp is the most popular chat utility with energetic users of greater than 650 million. It's been widely used by all, specifically some of the enterprise human beings and youngsters. The use of numerous analyzing gear, customers can analyse the WhatsApp institution chat or personal chat. Authentically users desire to examine their chat for numerous functions. This studies paintings is meant to perform a flirt evaluation and time evaluation. This assignment has many use cases like the discern, who desires to examine their child chat; the police, who want to get valuable information.

These days, the usage of social media networks now became a common mode of information sharing. A huge set of users had been now adapting to this version of the technological era. the usage of social media now have become commonplace for sharing the messages the video and additionally the pics and no longer simplest for the non-public reason it became extensively utilized for the professional reason as sharing or marketing the commercial enterprise-associated information also in recent times became the new ordinary.

SEISMIC PERFORMANCE OF STEPBACK BUILDING ON DIFFERENT SLOPING GROUNDS

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In these modern days the buildings are made to satisfy our basic aspects and better serviceability. It is not an issue to construct a building any how it is, important to construct an efficient building which will serve for many years without showing any failure. The spectrum analysis of a G+6 storey RCC building on varying slope angle 5°,10°,15°,30°, is used considering all the four seismic zones (v) with three type of soil considered (soft, medium, hard). The Structural analysis software STAAD Pro v8i is used to study effect of sloping ground during earthquake. The analysis the effect of sloping ground on structural forces. The comparative study of results as lateral forces, maximum bending moment, maximum axial force and story wise displacement as the demonstrate is analyzed by Response spectrum analysis. The dynamic response properties i.e., fundamental time period, top storey displacement and, the base shear action induced in columns have been studied with reference to the suitability of a building configuration on sloping ground.

Keywords: Structural analysis, lateral forces, beam column forces, displacement, Sloping ground, Linear static analysis, Stepback Building Configuration and Response spectrum analysis.

DESIGN AND VERIFICATION OF 1X3 ROUTER

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Router helps in connecting multiple devices to the internet and also to connect the devices to each other. Many client-server-based networks transfer data using routers, and Multiprocessors chips include routers for on-chip communication. Router forwards data packets between computer networks and Routing is the process of moving a packet of data from source to destination and enables messages to pass from the server network to the client network. Router drives the incoming packet from the input port to the output ports based on the address contained in the packet. The address in the packet should be matched with the address in the output port. In this project various sub-modules of the router i.e., Register, FIFO, FSM, and Synchronizer will be designed, synthesized, simulated, and finally connected to its top module for verification

ROLE OF REINFORCEMENT RATIO ON FLEXURAL BEHAVIOR AND SELF-SENSING PROPERTIES OF RCC BEAM

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Health monitoring can be made possible for a reinforced concrete (RC) beam embedded with micro carbon fibers of certain length and diameter. For evaluating the effect of smart concrete (carbon fiber and zinc powder based concrete) in strain, crack/damage sensing and to study the effect of carbon fibers uxxbvvnder different flexural loading, RC beams having variable reinforcement ratios and constant dimensions were tested that were partially manufactured using smart concrete. Smart concrete was placed only in mid span for a length of 350 mm and to a depth of 55.5 mm at top and bottom surface. The percentage steel in the beam is a variable parameter in this study and three different proportion of steel are considered in this work .The obtained fractional change in resistance of RC beam in the present study is found to be co-related with compressive strain in concrete and tensile strain in steel up to a good extent along with showing detailed results of different structural properties. An empirical equation has also been derived that gives co-relation between fractional change in electrical resistance and strain in concrete/steel. Further, the experimentally obtained ultimate strength values were compared with theoretical predicted values using IS 456-2000, A.C.I 318-11 and C.S.A A23.3- 04 codes to study the effect of carbon fiber and zinc powder on different strength parameters. A self-sensing cement composite can be produced by incorporating carbon fiber and zinc powder in suitable proportion to yield a a smart concrete

DEVELOPMENT OF GEOPOLYMER CONCRETE USING SINGLE ALKALI ACTIVATOR SOLUTION UNDER AMBIENT CURING

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Pollution is a major environmental issue in cement production throughout the world. Geo polymer concrete is an alternate cement as well as environment-friendly material in construction field. It can be used as an alternative for ordinary Portland cement because of zero emission of greenhouse gases. The current limitation in geo polymer concrete has been applied in precast members. The geo polymer concrete in the this study is prepared by using fly ash, ground granulated blast furnace slag (GGBS) as base materials and alkali activators (i.e., sodium silicate or sodium hydroxide) as alkaline activators used for the mix with 70% replacement of GGBS with fly ash. Fly Ash, a by-product of coal obtained from the thermal power plant is rich in silica and alumina which on reacting with alkaline solution produces alumina silicate gel that acts as the binding product for the concrete. Ground-granulated blast furnace slag is highly cementitious and high in CSH (calcium silicate hydrates) which is a strength enhancing compound.8M NaOH solution was taken in this study. The compressive strength is calculated for each of the mix and determining ductility factor. The cube specimens are taken of size 150mm x 150mm x 150mm. The Geopolymer concrete specimens are tested for their compressive strength at the age of 7 days and 28 days. The Specimen are cured in ambient temperature. The result shows that geopolymer concrete with single alkali activator does not attain the design strength hence it is not feasible.

PREDICTION OF BREAST CANCER, COMPARATIVE REVIEW OF MACHINE LEARNING TECHNIQUES, AND THEIR ANALYSIS

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Breast cancer is type of tumor that occurs in the tissues of the breast. It is most common type of cancer found in women around the world and it is among the leading causes of deaths in women. This paper presents the comparative analysis of machine learning, deep learning and data mining techniques being used for the prediction of breast cancer. Many researchers have put their efforts on breast cancer diagnoses and prognoses, every technique has different accuracy rate and it varies for different situations, tools and datasets being used. Our main focus is to comparatively analyze different existing Machine Learning and Data Mining techniques in order to find out the most appropriate method that will support the large dataset with good accuracy of prediction. The main purpose of this review is to highlight all the previous studies of machine learning algorithms that are being used for breast cancer prediction and this paper provides the all necessary information to the beginners who want to analyze the machine learning algorithms to gain the base of deep learning.

NON LINEAR ANALYSIS OF RESIDENTIAL BUILDING(G+14) USING PUSH OVER ANALYSIS

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In recent years, substantial amount of study has been carried out in order to evaluate building's performance during a seismic event. During seismic action, the building is expected to deform in-elastically and therefore seismic performance evaluation is required considering behaviour of the structure. Performance based seismic design is a modern approach to earthquake resistant design of RC buildings. It is not only simple but also a systematic design method for structural systems to achieve the desirable and predictable performance of structure. Performance based design of building structures requires rigorous non-linear static analysis. Non-linear static analysis or pushover analysis is generally carried out as an effective tool for performance based design. Pushover analysis came into practice after 1970. In non-linear static analysis or pushover analysis, a building under constant gravity loads and monotonically increasing lateral forces during a seismic event is analysed until a target displacement is reached. Pushover analysis provides better understanding of seismic performance of buildings and also traces the progression of damage and failure of building's structural elements. By pushover analysis, one may get an insight about the behaviour of building in non-linear zone. It is generally believed that the conventional elastic design analysis method cannot capture many important aspects that control the seismic performance of the building structure. The capacity of building to undergo in-elastic deformations governs the structural behaviour of building during seismic event. For that reason, the evaluation of building should consider the in-elastic deformations demands due to seismic loading. On the other hand, linear elastic analysis does not provide information regarding real strength, ductility and energy dissipation in the structure.

DESIGN AND ANALYSIS OF PRESSURE VESSEL USING PV ELITE

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A Pressure vessel is a device designed as a closed container that holds gases or liquids at a pressure considerably different from the ambient pressure. Due to differential operating conditions of pressure vessels, they are potentially dangerous and accident involving can be deadly and poses lethal dangers. The main aim of this work is to design and analyze a pressurized lube oil tank for working under varying operating conditions and to identify the most contributing parameter that controls the efficient working of the oil tank. Generally pressure will be developed inside the oil tank and also it has to withstand several forces developed due to both internal as well as external pressure acting on it, making the design critical. Hence for safety purpose, the pressure vessel was designed as per ASME standards. Further validation of PV- ELITE software was made.

DESIGN AND ANALYSIS OF ADAPTIVE WING USING COMPLIANT MECHANISM

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The project is to come up with an adaptive wing design that can be future of a greener aviation. The reason is one can adaptively change wing shape during flight. One thing that current aircrafts are stuck to is that airfoils are designed in such a way that they stay in the air for long time. With adaptive wing, the aircraft has the advantage of changing wing shape during flight both symmetrically and asymmetrically. The symmetrical wing shape changes the camber depending on the lift required. The direction of the aircraft is affected by the asymmetrical changes in the airfoil. With the help of compliant mechanisms, one can design the adaptive wing. Compliant mechanism provides certain type of mobility to the object with the flexibility of members in it. Compliant mechanisms consist of flexible parts instead of rigid joints that perform the task. The main task of compliant mechanism is to replace the traditional mechanisms which consist a number of rigid parts or joints. Compliant mechanisms offer advantages such as increased performance, low part count, significant weight reduction, low friction and reduced wear and tear of parts. However, there are limitation for compliant mechanism such as design complexity, limited motion and excess energy stored in mechanism.

In the proposed work, design of the airfoil and performing CFD analysis for the feasibility and designing with compliant mechanisms for airfoil functioning will be done.

AN EXAMINATION SYSTEM AUTOMATION USING NATURAL LANGUAGE PROCESSING

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This world has seen a lot many examination portals that are deployed over several servers which are used to conduct online examination for various purposes among which some may include conducting a test for entrance examinations, or olympiads at national and international level and while some portals are designed to conduct a test for placement purposes. But what we have seen is that mostly all the portals are designed to conduct tests that contain multiple choice questions. Here our aim is not to work on the technology that is already existing, rather some technology that is very rare. Here we talk of the descriptive online examination system. Multiple choice questions are easy to deal as they have a question, a few options and a field in the same question that stores the correct option in the database. While in the case of descriptive questions it is not so. It brings in or uses the concepts of Natural Language Processing or NLP to assign marks to answers. Answers are nothing but strings and the job of the model is to do some operations on the answer string such that it can assign the correct marks to answers written by the examinee. The data is basically collected from a descriptive online examination system. Further, it is analyzed and the designed model assigns accurate marks to the answers for the question. The back-end is written in Python where the web framework used is Django, the library used for Natural Language Processing includes NLTK and for database purpose, SQLite version 3 is used, while for the front-end HTML version-5, CSS version-3, Bootstrap and Javascript is used.

AN OVERVIEW ON THE PRESENT BREAKTHOROUGHS AND MISCONCEPTIONS ABOUT NEUROPLASTICITY

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In the early 20th century, neuroscientists came to conclusion that a mature brain is like a fly stuck in amber, not mouldable. With vast technological innovations, enabled the scientific community to research on brain to get more insights of the CPU(brain) of our body. Among the many other interesting concepts, new comprehensions regarding the principles and concepts of neural mechanisms. The most fascinating find that they landed upon during their quest is the theory of neuroplasticity. This newfound perception continues to intrigue the curious mins all around the world and across time. Neuroplasticity can be defined as an exceptional ability of our brain to reconfigure i.e rewire itself in response to the things like environmental stimulus, behaviour experiences both physically and mentally, etc. Neuroplasticity is distinctive there is no obligation in science regarding its mechanism in an individual up to some extent.The following review intends to explain the scope & depth of neuroplasticity, its principle and aims to address "to what extent are the misconceptions regarding the neuroplasticity true?". Using the DTI(Diffusion tensor imaging).People also some insights on how hormones influence neuroplasticity throughout the lifespan. There were studies showing Neuroplasticity also deals with treating motor neuron disorders. Upon thorough evidence based investigation upon the claims supporting the scientific knowledge behind the principle,benefits of neuroplasticity and the arguments, claiming neuroplasticity to be regarded as pseudoscience. The integrity of such claims will be validated.

Keywords: Neuroplasticity, Diffusion tensor imaging, stimulus, pseudoscience, motor neuron disorder.

DESIGN AND ANALYSIS OF ELECTRIC SCOOTER

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Air pollution from motor vehicles and exhaustion of natural resources has become a serious global and environmental hazard. Another serious environmental issue is urban warming, caused by concentrated consumption of energy in the urban areas. In India, emission from two-wheelers is a significant contributor to air quality problems. In urban areas in particular, two-wheelers serve as a primary transportation option both due to their relative affordability and their ability to maneuver in heavy traffic. Due to the phenomenal increase in the number of vehicles and the limited use of emission control strategies, two-wheelers are considered to be a significant source of urban air pollution in most of the Indian cities.So our main Objectives to design or development an e-scooter are as following:- i. To reduce running cost of vehicle ii. To reduce the emissions iii. To overcome the draw backs of electric vehicle iv. To increase life period and efficiency of existing e-scooters.

SMART IOT AND MACHINE LEARNING-BASED FRAMEWORK FOR WATER QUALITY ASSESSMENT

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Water is the most important natural element present on earth. The availability of pure water is becoming decreasing due to an increase in population and rise in temperatures. Mismanagement of water storage, distribution, quality leads to serious threats for human health and ecosystems. Traditional quality and device management require huge investments in time, manual efforts, labor, and resources. The main motive of this project is to monitor water quality measurements and alert for taking actions based on contamination and toxic parameter levels. Device and application performance as the first part of the proposed work. Further, we used machine learning models to analyze water quality trends, device monitoring, and management architecture in the second part of the proposed method. Using machine learning, systems, and sensors, data can be gathered and generate alarms in real-time to detect problems and reduce the load on the infrastructure and for staff, who currently manage the processes. The results show that the method is able to manage water monitoring and accessing water parameters.

MAGLEV: MAGNETIC LEVITATING TRAINS-SUSTAINABLE TECHNOLOGY FOR FUTURE

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The birth of every technology is the quest for maintaining sustainable environment and this is where maglev trains come into picture which are much greener i.e., environmentally friendly and faster. Maglev trains use magnetism to levitate above the tracks on which they travel. Magnetic levitation trains are becoming a reality more than ever. With a record of 581km/h, these trains open new visions about transportation. Maglev trains do not have wheels or rails, they have guideways, and they float down these guideways without ever touching them. There are three essential parts to achieving maglev functionality: levitation, propulsion and guidance. Levitation is the ability for the train to stay suspended above the track. Propulsion is the force that drives the train forward and Guidance is what keeps the train centered over the guideway. The most obvious attraction of maglev trains is that they can travel faster than traditional rail trains. And some of its subtle qualities like longevity, safety, energy efficiency and environmental impact makes it more alluring. The lack of friction between the train and the guideway removes many limits that bound traditional trains. Maglev technology holds great promise for the future which makes transportation better than that we have today

HYDROGEN - THE FUTURE FUEL

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Hydrogen is notable for it's unique properties making it the most viable alternative fuel for electricity generation and engine power.This element is highly abundant and is being used in numerous applications industrially.But hydrogen can be an important source of fuel and with the proper knowledge of it's different technologies,innovations for hydrogen fuel production can then be addressed.Steam reforming of natural gas is the widely used hydrogen production technology.But environmentally safe production had been a pressing isssue.Hence,a shift to a cleaner and more sustainable primary energy source is very essential.This paper gives some basic idea about different hydrogen production techniques and also discussing about development the gaps and the further improvements that need to be made.This paper aims to highlight the hydrogen fuel production by electrolysis and photoelectric chemical techniques, development and it's potential for high hydrogen yield.

Keywords : Hydrogen fuel, Electrolysis, Photoelectric chemical, Steam reforming.

LINKING PROCESS OF BLOCKS IN A BLOCKCHAIN NETWORK

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Blockchain and Cryptocurrency have become the latest buzzwords in the field of Computer Science since the past 2-3 years. It has the potential to completely take over the traditional Financial Institutions we know since the past century and bring about Web 3.0. In order to do this the technology has to be highly secure. To understand how and why Blockchain is so secure and reliable we need to first understand how the different Blocks are linked together in a Blockchain Network. The blocks in a Blockchain are linked with the help of a Hashing Algorithm. A hashing algorithm is a one-way mathematical function which generates a unique output for every unique input. The Bitcoin Network uses a SHA-256 Hash. A basic block has a data, hash and previous hash field. The hash value of any block is dependent on the hash value of the previous block, therefore making it very difficult to alter the data as any tampering would require altering hashes of each and every subsequent block in the Blockchain. A typical Blockchain Network can have millions of blocks on its chain. This makes it virtually impossible to alter the Blockchain, thereby making it so secure.

IOT - BASED RASPBERRY - PI REPEATER NETWORK.

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The Internet of things (IoT) is an important feature of the internet. Wi-Fi is one of the most commonly used wireless network technologies which allows multiple devices to interface with the internet. Apart from the standard infrastructure components especially power and network which are absolutely necessary for IoT gadgets, there is also a need to eliminate such dependencies to make the IoT future-ready. But in order to set up this network in vast areas such as educational institutions, public places, etc., it is difficult to provide a wired network connecting every route which in turn also increases the maintenance cost. So here in this project, we are proposing a solution that is cost-efficient and also powerful with low maintenance. It is also an energy efficient solution as the Raspberry Pi consumes less electricity compared to most of the routers in the market. Here we are proposing a self-maintained system with minimum overall investment for the infrastructure of the network by deploying a Wi-Fi P2P access point communication strategy for IoT gadgets which also helps to minimize the cost of maintenance with the wide coverage of the network.

ACCEPTENCE OF CULTURED ORGAN

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Organ transplantations is important medical procedure for people with condition like terminal organ failure. The procedure follows strict protocols for successful transplantation. Human body is made of system like, immune system. Organ acceptance rates ranged from 15% to 58% because the immune system perceive the transplanted organ as foreign object and attacks which in turn organ gets rejected. Many scientist acknowledge this problem and came with effective idea like transplantation of cultured organs which is designed meticulously form patient's own stem cells in controlled environment Where the acceptance rate is much higher than regular organ transplantation. Developing the environment for culturing of organ will save many lives.

Keywords: Terminal, Protocols, Immune system, Transplantation, Cultured Organ

RECYCLING WITHIN THE UNIVERSITY HOUSING

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Recycling is the process of converting waste into useful material. The purpose of Recycling is to save the natural resources as well as energy. Recycling plays the vital role in maintaining the sustainability in the environment. Recycling within our University Housing includes water treatment plant, effluent treatment plant, waste food is sent to biomass treatment plant, trash from the dormitories and classrooms is sent to the nearby recycling stations. Recycling wastes in smaller units within the campus area is very important as the population in the campus is high eventually the waste generated is more so that is recycled and reutilized. Apart from recycling we can go with campus greening. Campus greening is all about reducing environmental footprints, saving money with efficiency. Campus greening will also, generate interest about social values, raises questions on how to meet human needs, as well as developing new technologies. College Recycling programs also helps to ensure the students to learn the importance of environment conservation. Institutions of higher learning are an excellent platform to teach students about environmental friendliness.

SOLAR DISTILLATION

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Solar distillation is a technology for producing potable water from brackish and underground water of low-quality at low cost. It can reduce water-scarcity problems together with other water purification technologies.It is analogous to natural hydrological cycle. The basic principle of solar water distillation is simple as distillation replicates the way nature makes rain. In such systems, energy is required only to power the circulating water pumps. A solar still consists of a shallow basin with a transparent cover designed to act as a condenser.In the Solar distillation process solar energy is used to evaporate water and its condensate is collected within the same closed system. High quality vapor compression distillers recycle nearly 98% of energy required.Vapour compression distillers use about 0.12 kw/H of electrical power to produce 1 gal of distilled water. Depending on local electricity rates,power costs could be as little as one cent per gallon. The advantages of such solar distillers are their design simplicity, low installation cost, independent water production and simple maintenance. But they also have several disadvantages such as low efficiency and deposition of salt, scale and corrosion.

SOLAR POND TECHNOLOGY

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The use of renewable energy sources such as solar energy is the only long-term solution to the present global energy crisis. This paper reviews non-convective solarpond, a potential large surface area solar collector device with an additional advantage of long-term storage capacity of thermal energy. It is a shallow body of water of about a meter deep containing dissolved salts to generate a stable density gradient (fresh water on top and denser salt at the bottom). Part of the incident solar radiation entering the pond is absorbed leading to temperatures near 1000C without convection due to the density gradient. The hot salt water can be used to drive turbine and electric generator with the use of suitable fluids, provision of process hot water for industrial and commercial purposes, space heating, air conditioning and hot water needs of community or individual apartment. There are many specific applications of solar pond for differences purposes such as heating and cooling of houses, heat to industrialized process, electricity power production, commercial or farming crop drying, desalination, swimming pool, and greenhouse heating, etc.

THE ROLE OF PACKAGING IN FOOD PROCESSING

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The food packaging is used for protection of food from spoilage and damage during the self life of food product. So, the packaging maintains the quality of food and help in keeping the product. The packaging of food is an essential medium for preserving food quality, decreasing the wastage of food and also reducing preservatives used in food. Advance in food packaging and also food processing plays a primary role in keeping the U.S. food supply with the safest in the world. In food industries, the packaging role is very important component for durable and to maintain the function of product of food. In today's time, many customers attractive with package design of packaging of food but the food packaging should be appropriate with purpose of food packaging such as protection, security, consumer information included on label etc. We know that food packaging is also depend on packaging material such as glass, metal, plastics, paper and paper board. Different materials use in different packaging of food. An approximately 50% (by weight) of total packaging sales is food packaging. Package of food must balance food protection with some issues, including energy and material cost. Now, future guidance of packaging has improved things both from consumer's safety views and manufactures. More information of packaging issues like food safety issues and environmental issues is important for both consumers and manufacturer. The safety related packaging should be addressed based on labelling and efficient packaging. The main goal of packaging of food is to contain cost-effective way in food that is to satisfy and to maintain food safety, minimum environmental effect, consumers desires and industrial requirement. The main objective of this review article is to provide basic knowledge of food packaging role, purpose of food packaging, primary material of food packaging, some further issues.

Keywords: Food Packaging, Safety Issues, Material Strength, Role of Packaging, Product Information, Protection.

UTILIZATION OF WATER HYACINTH FOR SYNTHESIS OF ABSORBENT MATERIAL IN POTENTIAL SANITARY PAD APPLICATION - SUSTAINABLE ENVIRONMENT

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The objective of this research is to utilize Water hyacinth (Eichhornia crassipes) through chemical extraction procedure for fibre and improvement on absorbent properties of the fibre to bio-degradable personal hygiene product. Water hyacinth has (52 - 80 %) cellulose, (10 - 12 %) hemi-cellulose, (2 - 5 %) lignin & (0.2 - 0.5 %) pectin which shows potential qualities in process for cellulose pulp material for producing bio degradable absorbent sheet to reduce SAP uses, which cause environmental & hygiene problem. Study gives the synthesis of cellulose pulp and improvement for absorbent sheet, usable in sanitary pad application, they are feminine hygiene product used to isolate their mensural fluids from the body. Chemical Extraction is used in the preparation of pulp through alkali pulping, bleaching, washing, drying & pressing. Alkali pulping was done using Sodium hydroxide (NaOH) in concentration (9 - 10%) at 120?C for 3hrs. The pulp was bleached using Hydrogen peroxide (H2O2) at 80 ?C for 2hrs and pulp properties like brightness and tear index were analysed under TAPPI standards. The results showed that chemical extraction gives even surface texture and cellulose percentage is high, those are very essential quality for making absorbent sheet. The resulting pulp undergoes characterization like FTIR, SEM, Tensile test, absorption and retention capacity & biodegradable study to check the efficiency of absorbency under BIS standards. These characteristic results give high absorption index (6.52), greater than the commercial sanitary pads (4.38), absorption capacity in 180ml of water which retain for 2hrs without any weight loss and leaks, those are suggested that a prepared absorbent sheet could be used in sanitary pads as absorbent material. This work widely provides concept of waste management to commercial products.

Keywords: Water Hyacinth, Chemical Extraction, Absorbent sheet, Sanitary Pads, Bio-degradable.

NEW TRENDS FOR DESIGN TOWARDS SUSTAINABILITY IN CHEMICAL ENGINEERING

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Chemicals are present in our everyday activities. Their widespread presence provides benefits to societies' wellbeing, but can have some harmful effects. To counteract such effect, green engineering and sustainable assessment in industrial processes have been gathering momentum in the last thirty years. Green chemistry, green engineering, eco-efficiency, and sustainability are becoming a necessity for assessing and managing products and processes in the chemical industry. A broad review of disciplines and technologies concerning the last-decade-advances in the understanding and application of sustainability from a Chemical Engineering viewpoint is presented. In the last decade a range of practices and disciplines have appeared transforming the way in which traditional disciplines were conceived. Firstly, a review of the concept of sustainability and its significance for the chemical and process industry is presented. Then, several inspiring philosophies and disciplines which are the basis of the new trends in design are

briefly reviewed, namely, The Natural Step, Biomimicry, Cradle to Cradle, Getting to Zero Waste, Resilience Engineering, Inherently Safer Design, Ecological Design, Green Chemistry and Self-Assembly. The core of the manuscript is a deep review of what has been done in Green Engineering so far, including its main definitions and scope of application, different guiding principles, frameworks for design and legislative aspects. A range of illustrative industrial applications and several tools oriented to GE are analysed. Finally, some educational considerations and training opportunities are included, providing education at academic and university levels allows for the creation of a critical mass of engineers and scientists to foster green engineering and sustainable development in the future.

Keywords: Green Engineering, Sustainability, Green Chemistry, Chemical Industry, Eco efficiency.

GREEN ENGINEERING FOR BIOPLASTIC PRODUCTION

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Interest in eco-friendly bio-composite materials for application of food packaging. In this study the integrated process was developed for production of thermoplastic starch (TPS) and cellulose nanofiber (CNF) based nanocomposite material by using continuous twin-screw extrusion process. CNF is prepared from bamboo biomass using delignification process for cellulose extraction and further conversion to nanocellulose by deep eutectic solvent (DES) based hydrolysis and ultrasonication process. The results showed that alkali peroxide with hypochlorite treatment has 80 % extraction efficiency of cellulose from biomass. Different composite where prepared with variation of CNF into starch matrix using twin screw extrusion process and the composite is tested for its mechanical properties and moisture sensitivity. DES hydrolysis with 50 % DES concentration gave the highest yield of 83.34 % with desired particle size distribution. The percentage recovery of CNF after spray drying was found to be 72.8 %. The polymer matrix was isolated from corn stalk with 60% recovery of starch matrix. The Degree of Polymerization (DP) of bamboo biomass was found to be 1472 whereas after the DES treatment it reduces in the range of 820-525. The DES hydrolysis resulted in 73.15 % crystallinity in the sample. The characteristic absorption bands of cellulose at 3377 cm-1, 2899 cm -1, 1642 cm-1, were significantly strengthened from the raw bamboo to DES treated CNFs, due to increase in the cellulose content. The CNF has a high aspect ratio with a diameter in the range of 20 to 40 nm and length in the range of 50 to 120 nm was obtained. The bioplastic film (5%CNF/TPS) achieved a tensile strength of 5.07 ± 0.15 MPa with young's modulus is 216.09 ± 34.86 MPa. The MFI values for neat TPS to 5% CNF/TPS are 2.08 to 1.40 g/10 min. In TGA, the wt. loss% of neat TPS to 5% CNF/TPS are 82 to 77 % under the temperature range of 264.15-332.15 ?. The WVTR neat TPS to 5% CNF/TPS are 15.49 to 11.60 g/m2. 24 h. The contact angle for neat TPS to 5% CNF/TPS was found to be 61.5 to 78.5o. Biodegradability test has been observed that after the completion of 60 days the 5 wt. % loaded CNF film is having 13% more weight loss as compared to neat TPS film. Antimicrobial activities reported the inhibitory zones were markedly high after the addition of CNF in TPS against the mentioned Bacillus, Pseudomonas, and Escherichia microorganism on films.

Keywords: Cellulose nanofiber, Ultrasonication, Twin-Screw Extruder, Bioplastic.

THERMAL DECOMPOSITION ANALYSIS AND TECHNO-ECONOMIC ASSESSMENT FOR PRODUCTION VALUE-ADDED PRODUCT FUEL OIL FROM MULTILAYER PLASTIC WASTE THROUGH CONTINUOUS PYROLYSIS PLANT

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The Present Study illustrates the increasing interest in the harnessing of energy from waste as a result of an increase in global waste generation, especially on multi-layer plastic waste which is used in food packaging and are having single usage applications. The kinetics triplet estimation through pyrolysis of multi-layer plastic waste, were being conducted. Thermogravimetric analysis of the multi-layer plastic waste was carried and the results showed an inclusive devolatilization with the decomposition behavior similar to that of model components. The kinetic estimation based on model free methods estimated average activation energy of 218.42 kJmol-1 with pyrolysis process following a second-order reaction model with a three-way diffusion transport mechanism. The pyrolysis experiments performed under different temperature conditions ranging from 450-650°C with and without catalyst showed an optimum product (char and oil) yield at 550°C with catalyst with yields of oil- 42%, char- 11% and remaining non condensable gases. The procured oil is having a composition of Paraffins- 21.49%, Olefins- 23.12%, Cyclo-Alkanes- 6.38%, Aromatics- 21.38, and remaining 27.17% other oxygenated compounds; the same in terms of fuel Gasoline- 58.25%, Light Diesel- 33.59%, and Heavy Diesel- 7.04 %. We further performed the upgradation studies of the Pyro oil of the multi-layer plastic waste to convert it into suitable for the fuel applications. We have done the Hydro processing at high pressure at 70 bar and temperature of 200 ?. The resultant oil is having composition Paraffins-38.04%, Olefins- 19.01%, Cyclo-Alkanes- 3.51%, Aromatics- 26.94% and remaining 12.48 % other oxygenated compounds; the same in terms of fuel Gasoline- 75.86 %, Light Diesel- 21.69 %, and Heavy Diesel- 3.65 %. A plantwide design is under process flowsheet conceptualization and process simulation through Aspen Plus for the estimation of the material and energy balances involved in each unit operations of the process. The economic assessment based on the designed continuous pyrolysis plant is being carried out for the processing of 0.5 t/d of raw material of multi-layer plastic waste. This study is to provide a modelling and simulation framework to analyze the technical potential of treating multi-layer plastic waste into fuel range oil.

Keywords: Multi-Layer Plastic Waste, Pyrolysis, Fuel Oil, Kinetic Triplets, Techno-Economic Assessment Process Simulations, Breakeven point.

FIBER REINFORCED COMPOSITES FOR MARINE APPLICATION

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Global warming poses significant challenges to society at every level. It is the long-term heating of Earth's climate system observed since the pre industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere. Global Warming now is not only an atmospheric problem but also effecting the marine eco-system. Ocean acidification is an emerging global problem. Over last decade, there has been much focus in the ocean science community on studying the potential impacts of ocean acidification. Since sustained efforts to monitor ocean acidification worldwide are only beginning, it is currently impossible to predict exactly how ocean acidification impacts marine transportation in particular.

The potential effect on surface water pH of emissions of SOX and NOX from global ship routes is assessed. The results indicate that regional pH reductions of the same order of magnitude as the CO2-driven acidification can occur heavily in trafficked waters. Service life of a structural element for marine vessel should last for minimum of 25years, but due to marine corrosion their life span is being decreased. To overcome this, an ambitious innovation project that will develop a new market focused on the construction of marine vessels in composites (FRP), which has high specific strength and resistance to marine corrosion. Epoxy resin is versatile thermoset, which has good mechanical properties, highly polar and compatible to most fibers.

FUSION POWER TECHNOLOGY - RECYCLING & USAGE FOR CLEANER ENERGY SOURCE MADE FROM NUCLEAR WASTE BY BETAVOLTAICS

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Fusion power plant or thermonuclear reactor, a device to produce electrical power from the energy released in a nuclear fusion reaction. The use of nuclear fusion reactions for electricity generation remains theoretical. Since the 1930s, scientists have known that the Sun and other stars generate their energy by nuclear fusion. They realized that if fusion energy generation could be replicated in a controlled manner on Earth, it might very well provide a safe, clean, and inexhaustible source of energy. Betavoltaics is an innovative energy generator and storage that redefines and revolutionizes the battery as we know it. Its long-lasting properties and longevity are ensured by converting the radioactive decay energy from nuclear waste into energy. In BETAVOLTAICS it is a tiny, modular, cost-effective, and scalable from chipset to industrial applications.

NO MORE HUNGER APP

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No more hunger is an android mobile application. This application will have all the details of the food that the donor wants to donate. This is a free service to the people, which helps the needy to fill their tummy. Our aim is to make this world free from hunger. So, this is our first step towards our goal. At the end of the day, every hotel/ restaurant /function hall will have a remnant food with them. Obviously, they will throw it out without thinking much about it as it may not give them a loss. But, many people in India are unable to find the food to fulfill their hunger sometimes even once a day. On one side the food is getting wasted unnecessarily and on the other side, there is a need for food. To balance this, we came up with a solution. We will design an application to reach out to the needy people with this surplus food so that at least some people may get the food. Our application "No More Hunger" will enable the users to register, login, share the meal with item name and quantity, donate the things. After registration process the user can be able to upload the location where the food is available and the quantity of that particular item. Based on that location the food activists can reach out to the respective hotel/restaurant/function hall and will forward the food that they collected from the user to the needy or to the orphanages. Not only the food, even the user can donate the things like books, toys etc through this application. The user can be able to donate those things using a module in our application called "donate".

METAVERSE

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B20CS015

Metaverse is a network of 3D virtual worlds focused on social connection. It is a technology of the future. Metaverse can also be defined as a simulated digital environment that uses augmented reality (AR), virtual reality (VR), and blockchain technologies. This includes marketplaces where users can buy, sell, create and exchange digital assets. This paper presents the latest metaverse developments and illustrates the pros and cons of metaverse technology.

OVERVIEW, NECESSITY AND IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY

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Blockchain is a technology that is developed using a combination of various techniques such as mathematics, algorithms, cryptography, economic models, and so on. Blockchain is a public ledger of all cryptocurrency transactions that are digitized and decentralized. All the transactions of cryptocurrencies are stored in chronological order to help users in tracking the transactions without maintaining any central record of the transactions. Bitcoin is the most popular application of blockchain chain technology. Blockchain is a technology that provides a secure and distributed mechanism to record transactions. The technology has been applied in various domains, most notably in cryptocurrencies. Some of the key advantages of Blockchain for cybersecurity applications are in conflict with privacy properties, yet many of the potential applications have complex requirements for privacy. Privacy and security, interoperability, and immutable audit trails are some of the key benefits of blockchain. Blockchain for enterprise is on its way to pave the way for the future. Many organizations like IBM are trying to invest in an enterprise blockchain platform and enhance their business model. Enterprise blockchains mainly focus on the features of enterprise-grade and solve the issues that the industry faces. All the enterprise blockchain is specially equipped to meet with all organizational demands. Some important features of blockchain that enterprise can utilize are decentralized nature and ensures P2P network, immutability for no corruption, greater transparency increases responsibility, the cheaper cost will save money, the faster network increases efficiency, etc. Blockchain is the emerging technology useful in different sectors in the coming future. The necessity of the blockchain technology surges its significance considering all of its benefits and features.

EXPERIMENTAL INVESTIGATION ON THE INCREMENTAL FORMING OF ALUMINIUM ALLOY 6061

Koluru Sai Kiran*, A.Chandrakanth**

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** Professor of Mechanical Engineering, Chaitanya Bharathi Institute of Technology, Hyderabad- 500075

In the present report describes, extensive research on Incremental sheet forming has resulted in significant advances being made in fundamental understanding and development of new processing and tooling solutions. However, Incremental sheet forming has yet to be fully implemented to mainstream high-value manufacturing industries due to a number of technical challenges, all of which are directly related to ISF process parameters. Now a days the demand for aluminum alloys 6061 sheet plate has become high in number of applications because of various attributes it possesses such as high tensile strength, good flexibility and durability. In present study, this project gives brief review about the effect of several process parameter such as tool rotating speed, step size (z-axis), feed (x-y axis) on Incremental sheet forming of Aluminum alloy 6061 material using Experimental and Finite element approach. Particular attention is given to the incremental sheet forming process parameters on the deformation rate of the material, forming force is observed. The work aims is to find forming force with the help of milling dynamometer by using aluminium alloy 6061 sheets.

COMPOSITE MATERIAL CHARACTERIZATION USING NON-DESTRUCTIVE TESTING METHODS- A REVIEW

G Kishan, Dr. B.V.S. Rao

Faculty of Mechanical Engineeing,UCETW, Kakatiya University Campus, Warangal, Telangana
Faculty of Mechanical Engineering, CBIT, Gandipet, Hyderabad, Telangana

This research review paper explains about the non-destructive testing methodologies for the characterization of composite materials. This paper adopts the capabilities of commonly used nondestructive testing methods in composite evaluation, such as Ultrasonic Testing, Radiographic Testing, Visual Testing, Thermography, Electromagnetic Testing, Acoustic Emission and Shearography Testing by considering the advantages and disadvantages of these methods. Then, methods categorized based on their intrinsic characteristics and their applications. For the evaluation of material characteristics, only one non- destructive test method is required. If the scope of work is straight in nature, it is said that using a single test method is acceptable. However, when a single test method doesn't provide required information about the material integrity , then using combination of different methods is essential. Non-destructive testing is widely applied in power plants, nuclear industry, military and defence, aerospace, storage tank inspection, pipe and tube inspection and composite defects characterization. This paper mainly focuses on the scope of application for composite materials.

Keywords: Non-destructive testing, Composite material, Characterization

ANALYSIS OF POWDER COMPACTION DIE

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The Earth is abundant with a variety of metals with different compositions. Through ages, man has become more innovative in discovering new materials. However, processing an alloyed component that can use in a specific application is challenging to manufacture. Powder metallurgy is a technology in which metals and alloys can be fabricated to the desired shape and composition. It permits a wide variety of alloy systems, which cannot achieve in any other manufacturing process. It also minimizes scrap losses by using more than 97% of the raw material in the finished part. Generally, compaction involves high loads, which may lead to compact cracks and die failure (cracks) due to improper die design. Die design involves the application of loads, net material shaping, compaction ratios, less wastage of powders, the manufacturing cost of the Die, and cost-efficiency. Considering these factors in the powder metallurgy die design, the design of the Die takes a significant contribution in the technology. Among these factors, the application of load at different wall heights is also an essential factor for the safe design of the Die. The powder compaction-Die should be designed to produce the different thicknesses of the components. For different thicknesses of the components, the application of loads on die wall varies. In the present work, Analysis of the Die was carried out by applying the loads at 5, 10, and 35 mm heights of the die wall for the safe design of the Die. Analysis as carried out to determine the total deformation, stress, and strain distribution for applied pressure at specific heights. Analysis results were compared with the experimental results, and they are in agreement with experimental results.

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Proceedings of SUDHEE-2022

Dr. T. Sridevi obtained her Ph.D from Computer Science and Engineering Department, Osmania University, Hyderabad, India. She is presently working as Associate professor in CSE Department CBIT, She has a total of more than 20 years of teaching. She has published more than 35 research papers in various National and International conferences and Journals. She is Co-PI for AICTE funded Project. She worked as Editor,/Co- Chair/ Advisory member/ Reviewer/ Convenor / Co Convenor for conferences ISSP-2013, NCIS-2015, LAMDA–2017, ICACA-18, AICC-2018, ICDECT-2019, IEEE Access, ETCTA-2021.

Dr. T. Murali Krishna presently working as an Associate professor in EEE Department CBIT. He has 21 years of experience and published 43 research papers in Journals and Conferences of repute. He worked as Co-PI for two Projects and guiding 4 Ph.D. Scholars. He organized four Workshops /FDPs, conducted R & D Conclave and received 3 Lakhs from AICTE to conduct STTP. He was the recipient of Best Paper Award by IEEE conference (2013), Best Teacher Award (2017) by CBIT and Best Faculty Award by EET

Dr. A. Supraja Reddy Reddy Ammana obtained her Ph.D from the Department of Electronics and Communication Engineering, JNTUK, Kakinada, Andhra Pradesh, India, in She has a total of 15 years ofteaching and 3 years of research experience. She has published about 43 papers inreputed journals and conferences. As the Principal Investigator of the research project sponsoredby Space Applications Centre (SAC), ISRO, Ahmedabad, she has successfully completed theproject with a funding is 19.34 Lacs. She received "Best Paper" awards for her papers publishedin International conferences. She was invited by International Centre for Theoretical Physics (ICTP), Trieste, Italy to attend a two-week workshop in April-May 2018. The trip was fullyfunded by ICTP. She presented a paper at an IEEE international Symposium held in Boston, Massachusetts, USA, during July 2018.

Dr. Thanikanti Sudhakar Babu (Senior Member, IEEE) received the B.Tech. degree from JNTU, Anantapur, India, in 2009, the M.Tech. degree from Anna University, Chennai, in 2011, and the Ph.D. degree from VIT University, Vellore, India, in 2017. He had completed his Postdoctoral Researcher Fellowship from the Universiti Tenaga Nasional (UNITEN), Malaysia. He is currently working as an Associate Professor with the Department of EEE, CBIT, Hyderabad, India. He has published more than 110 research articles in various renowned international journals. His research interests include renewable energy resources, power management and storage systems etc..

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GENERAL REPORT ON SUDHEE 2022

SUDHEE– 2022
23rd - 24th March 2022

SUDHEE THEME: IGNITE INNATE INNOVATIONS

Prof. P. Ravinder Reddy, Principal - Chief Advisor

Advisory Committee

1	Prof. N. V. Koteswara Rao	Director, IQAC
2	Prof. P. Suresh	Director, AEC and CoE
3	Prof. K. Krishnaveni	Director, Academics
4	Prof. P. Sreenivas Sarma	Director, Student Affairs and Progression
5	Prof. A. D. Sarma	Director, R&D
6	Prof. UmakanthChowdary	Director, Incubation and Innovation
7	Dr. N. L. N. Reddy	Director, CDC
8	Prof. M. Swamy Das	Joint Director, Academics (Informatics)

Core Committee – Sudhee2022

Chairman	:	Prof. D. Krishna Reddy, Head, ECE Dept.
Co-Chairman	:	Prof. K. Radhika, Head, IT Dept.
Convener	:	Prof. P. Prabhakar Reddy, Mech Dept.
Co-Convener	:	Dr. V. Aruna, Asst. Professor, Bio-Tech Dept.

Sudhee 2022 is inaugurated by Dr.B.S.Murty Director, IIT-H along with Er.M.Goutham Reddy, Managing Director & CEO, Ramky Enviro Engineers Pvt. Ltd. They have highlighted the significance of innovations and their role in development of country. In each department, Paper presentations are preceded by key note address on emerging areas by resource persons from reputed organizations. Each Department also organized project expo and other technical events too. This time internal SIH was made part of this SUDHEE 2022 and receives good response. Rabovanza is organized at Institute level which huge response from out the state is observed and receives good applause from participants other states too. Ramanujam Maths Club organized technical events as part of SUDHEE 2022. SUDHEE 2022 concluded with valedictory functions are held at respective Departments on day two.

Departmental Tech fest faculty Coordinators:

S.no	Department	Technical fest	Faculty Coordinators	Students Coordinators	Name of the event	No. of Teams / participants
1.	Dept. of CSE	HEADSTART	Smt. Kavita Agarwal	Ms.G.Greeshma	Paper Presentation	17
			Smt. D. Nagajyothi	Mr.Mohammed Hafeez	Other Technical events (11)	466
2.	Dept. of Civil	CIVILISATIONS	Smt.N.Lalitha Kumari	Mr.Rohit Kalyan	Paper Presentation	28
			Sri Vishwanath Gopisetty	Mr.Saketh Angara	Other Technical events (04)	67
3.	Dept. of EEE	ELECTRET	Dr.N.Venkataphanendra Babu	Mr.Siddarth Boge	Paper Presentation	10
			Sri N.Santosh Kumar	Ms.Sravathi Sadineni	Other Technical events (02)	07
4.	Dept. of MED	MECHANICAL	Sri P.Kiran Kumar	Mr.Ashish Rathod	Paper Presentation	38
			Sri V.Jaipal Reddy	Mr.M.Sri Harsha	Other Technical events (07)	128
				Mr.Nishanth		
5.	Dept. of ECE	SYNAPSE	Sri Mohd.Ziauddin Jahangir	Ms.S.Simritha Rao	Paper Presentation	34
			Smt. J. Mounika	Ms.N.N.Geetha Krishna	Other Technical events (05)	146
6.	Dept. of IT	TECSTASY	Dr.Pragathi Pridharshinee	Ms.Manasa Choudavarapu	Paper Presentation	21
			Sri K.Rajesh Kannan	Mr.Chippagiri Sumanth	Other Technical events (19)	474
7.	Dept. of Biotech	NEOZION	Dr. C. Obula Reddy	Ms.Deepkka Blessy	Paper Presentation	65
			Dr. Bishwambar Mishra	Ms.Jahnavi M	Other Technical events (03)	93
8.	Dept. of Chemical Engg	CHEMSPARK	Sri. I. Balakrishna	Mr.J.yashash	Paper Presentation	42
			Dr. K. Prasad Babu	Ms.Krishna Priya	Other Technical events (02)	11
9.	Dept. of MCA	TECHEON	Sri CNVBR Sri Gowrinath	Mr.Sai kiran D	Paper Presentation	50
			Sri P.Ramesh	Ms.Amitha Reddy Shegur	Other Technical events (06)	106
10.	Dept. of MBA	YUKTHI	Dr.Narender Miryala	Ms.Ruchitha	Paper Presentation	01
			Dr.Paruthi Mandakini	Mr.Akhil	Other Technical events (07)	175
11.	Dept. Maths	RMC	Dr.Mamta Thakur	Ms.Charvi P	Paper Presentation	07
					Other Technical events (04)	109
12.	Institute level	SIH	Sri. R.Srikanth	Ms. Rikhila	Internal SIH	35
13.	Institute level	RABOVANZA	Smt. P.Anjani Devi	Mr.Sriram P and Mr.Srinivas	Other Technical events (07)	48

Theme of Key Note Speakers

S.no	Department	Name of the Keynote Speaker	Designation of the Keynote Speaker	Theme of the Keynote Speaker
1	Biotechnology	Dr.E.Prasad	Process R &D specialist, Dr Reddy Labs, Hyderabad	Ignition of young minds with innovative ideas in fermentation technology research
2	Chemical Engg	Sri. V.Pavan Kumar	Principal Engineer at Cognizant Technology Solutions, Hyderabad	Creativity, innovation and entrepreneurship in process industries in the era of dizitalization
3	Civil Engineering	Sri. C.Anjeneya Prasad	Managing Director Metey Consultancy Hyderabad	Innovations in Civil Engineering (Precast Applications)
4	CSE	Prof. Vikram Pudi	Data Sciences and Analytics Centre IIITH	Reflections on data sciences
5	EEE	Sri.S.K.Pandey	AGM, BHEL, RC Puram,Hyd	Innovations in Electrical Machines
6	ECE	Sri Sahadeva Sakha Dasa	Regional President The Akshaya Patra Foundation Hyderabad	Discover your career path
7	Information Technology	Sri. M.S.Subramanian	Head, Delivery Excellence, TCS	Essential of transformation from student to professional
8	Mechanical. Engg	Dr. J.John Rozario Jegaraj	Scientist-F Dy. Technical Director DRDL Kanchanbagh Hyderabad	Disruptive Technologies in Defense and aerospace applications
9	MBA	Sri.Khan Mohammed	Principal Consultant NIRD	Rural Innovation
10	MCA	Sri. J.Amarnath	CEO, Quanint Hyderabad	How to initiate your startup journey
11	Mathematics	Dr. D. Sudheer Reddy	Scientist -F /Engineer-F ADRIN, DoS, Hyderabad	Application of Mathematics to AI/ML and related topics

23/4/22

Co-Chairman
SUDHEE 2022

Chairman
SUDHEE 2022

23/04/2022

23/04/2022

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

Date: 23-04-2022

To

The Principal

CBIT, Hyderabad

Sub: Submitting of detailed report of SUDHEE 2022-Reg.

Respected sir,

We the core committee of SUDHEE 2022, would like to express our sincere gratitude to your kind self and kind gesture, bestowing confidence on us and nominating us as core committee of SUDHEE2022. We endeavoured with our best efforts in planning and executing all the events in coordination with all the department coordinators and all committee members as well. In this regard, we hereby submit to your kind self,the detailed report on various events conducted by departments along with the financial report.

We, once again thank for all your kind support and guidance in making this SUDHEE 2022 a grand success.

Co-Convenor
SUDHEE 2022

Convenor
SUDHEE 2022

Co-Chairman
SUDHEE 2022

Chairman
SUDHEE 2022

Encl: 1.General report

2.Financial report

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

SUDHEE-2022

THEME: IGNITE INNATE INNOVATION

Amount Received through registrations, sponsorships and stall rentals (Income/Cash Inflows)

S. no	Department/Event	Through CBIT Account (Rs)	Through Receipt Books (Rs)	Received through excel sheet entry (Rs)	Total Income (Rs)
1.	Biotechnology	44,950	7,400	Nil	52,350
2.	Chemical Engineering	10,700	6,100	Nil	16,800
3.	Civil Engineering	10,000	5,870	Nil	15,870
4.	CSE DEPARTMENT	6,400	1,200	30,800	38,400
5.	ECE DEPARTMENT	13,200	8,250	Nil	21,450
6.	EEE DEPARTMENT	3,600	3,200	Nil	6,800
7.	Information Technology	6,400	37,410	Nil	43,810
8.	Mechanical Engineering	15,200	1,140	9,920	26,260
9.	SMS	Nil	9,150	Nil	9,150
10.	Master of Computer Applications	20,000	12,350	Nil	32,350
11.	Mathematics (RMC)	Nil	10,000	Nil	10,000
12.	CBIT SIH	Nil	Nil	Nil	Nil
13.	Robovanza	Nil	14,350	Nil	14,350
	Total	**1,30,450**	**1,16,420**	**40,720**	**2,87,590**
			Total	**157140**	------
14	**Amount received through sponsorship and stall rentals (Credited to CBIT Account)**				4,96,020
				Grand Total	**7,83,610**

23/4/22

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SUDHEE 2022

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY(A)

SUDHEE-2022

THEME: IGNITE INNATE INNOVATION

Honorarium & conveyanceand prizes amount (Column 3) to be credited to beneficiaries accounts givenand Amount spent by Dept. coordinators through bills and vouchers (Columns 4&5) (Expenditure/Cash outflows through dept. coordinators)

S.no	Department /Event	Honorarium & Prizes (Rs)	Bills (Rs)	Vouchers (Rs)	Total (Rs)
1.	Biotechnology	28,050	Nil	Nil	28,050
2.	Chemical Engineering	30,900	Nil	400	31,300
3.	Civil Engineering	26,500	Nil	Nil	26,500
4.	CSE DEPARTMENT	61,000	6,640	360	68,000
5.	ECE Department	65,500	1,132	2,530	69,162
6.	EEE Department	24,000	Nil	Nil	24,000
7.	Information Technology	31,710	9,138	3,350	44,198
8.	Mechanical Engineering	36,270	1,400	Nil	37,670
9.	SMS	13,700	1,197	Nil	14,897
10.	Master of Computer Applications	37,000	6,500	4,600	48,100
11.	Mathematics (RMC)	15,700	1,304	Nil	17,004
12.	CBIT SIH	34,500	3,450	Nil	37,950
13.	Robovanza	59,500	23,410	Nil	82,910
Total		**4,64,330**	**54,171**	**11,240**	**5,29,741**

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

SUDHEE-2022

THEME: IGNITE INNATE INNOVATION

Amount to be paid to the Dept. coordinators and Committee chairmen towards the expenses incurred through bills and Vouchers

S.no	Coordinators	Technical fest	Dept.	Bank	Account Number	IFSC Code	Amount (Rs)
1.	Dr. C. Obula Reddy	NEOZION	Biotech	---	---	---	NIL
2.	Dr. K. Prasad Babu	CHEMSPARTK	Chemical	ICICI	040901507652	ICIC0004385	400
3.	Smt.N.Lalitha Kumari	CIVILISATIONS	Civil	---	---	---	NIL
4.	Smt. Kavitha Agrawal	HEADSTART	CSE	ICICI	040901507813	ICIC0004385	7,000
5.	Sri Mohd.Ziauddin Jahangir	SYNAPSE	ECE	ICICI	040901507757	ICIC0000409	3,662
6.	Dr.N.Venkataphanendra Babu	ELECTRET	EEE	---	---	---	NIL
7.	Dr.Pragathi Pridharshinee	TECSTASY	IT	ICICI	111401534086	ICIC0004385	12,488
8.	Sri P.Kiran Kumar	MECHANICAL	MECH	ICICI	426601500716	ICIC0004385	1,400
9.	Dr.Narender Miryala	YUKTHI	SMS	ICICI	041001521154	ICIC0004385	1,197
10.	Sri CNVBR Sri Gowrinath	TECHEON	MCA	ICICI	040901597872	ICIC0004385	11,100
11.	Dr. Mamatha Thakur	RMC	Maths	ICICI	040901507906	ICIC0004385	1,304
12.	Sri.R.Srikanth	CBIT SIH	All Depts.	ICICI	040901507827	ICIC0004385	3,450
13.	Smt.P.Anjani Devi	Robovanza	All Depts.	ICICI	426601500727	ICIC0004385	23,410
14.	Dr.M.V.S.Murali Krishna	Technical Committee		ICICI	426601500703	ICIC0004385	26,000
15.	Dr.P.N.Sastry	Publicity Committee		ICICI	040901507738	ICIC0004385	16,000
16.	Dr.G.Suresh Babu	Campus and stage decoration committee		ICICI	024501541659	ICIC0004385	8,000
17.	Dr.N.V.Srineevaslu	Finance Committee		ICICI	426601500708	ICIC0004266	6,010
Total							1,21,421

23/4/22

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
SUDHEE-2022
THEME: IGNITE INNATE INNOVATION

Amount to be paid to the below listed vendors through cheque and account transfer

S.no	Vendor Name	Bank	Account Number	IFSC Code	Amount (Rs)
1.	VISHNU TENT HOUSE & SOUND SYSTEMS	Cheque in favour of **Mr.G.Narsing Rao** **PAN no: ALVPR9617C**			1,57,200
2.	SRI SAI CABLE NETWORK, DIGITAL VIDEO & PHOTOGRAPHY	Cheque in favour of **"SRI SAI CABLE TV NETWORK"** **GST no. 36ADNFS1698E1ZM**			12,120
3.	XLENT PRINTERS & GRAPHIPCS	CANARA BANK	30571010001062	CNRB0013057	29,736
4.	VISHNU TENT HOUSE & SOUND SYSTEMS	Cheque in favour of **Mr.G.Narsing Rao** **PAN no: ALVPR9617C**			9,000
5.	XLENT PRINTERS & GRAPHIPCS	CANARA BANK	30571010001062	CNRB0013057	31,800
6.	XLENT PRINTERS & GRAPHIPCS	CANARA BANK	30571010001062	CNRB0013057	15,485
7.	Vrinda Publishing House	Cheque in favour of **" VRINDA PUBLISHING HOUSE"**			15,800
				Grand total	**2,71,141**

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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
SUDHEE-2022
THEME: IGNITE INNATE INNOVATION
Budget and Expenditure

S. no.	Description	Sanctioned Budget (Rs.)	Actual Expenditure(Rs.)	Income(Rs.)
1.	Hospitality Committee	7,50,000	5,29,655	---
2.	Reception Committee	23,560	18,891	--
3.	Campus and Stage Decoration Committee	3,69,400	1,84,166	2,47,520
4.	Publicity Committee	75, 000	60,736	-----
5.	Technical Committee	7, 60, 000	6,92,976	2,87,590
6.	Infrastructure and General Maintenance Committee	10,000	--------	--------
7.	Finance Committee	10,000	6,010	2,48,500
Total		**19,97,960**	**14,92,434**	**7,83,610**

The actual institute funds used for successful conduction of SUDHEE 2022 is Rs. 7,08,824 (after deducting income generated through sponsorship, stall rentals and registration fee Rs.7,83,610 from actual expenditure Rs. 14,92,434)

23/4/22

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SUDHEE 2022

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