



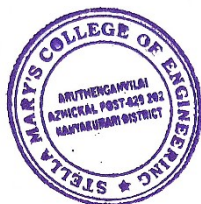
STELLA MARY'S COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC and NBA(MECH & CSE))

Aruthenganvilai, Kallukatti Junction Azhikal Post, Kanyakumari District-629202, Tamil Nadu

3.1.3 Number of conferences conducted by the Institution during the Academic Year 2023-2024

Sl. No	Date	Activity
1	14/09/2023 & 15/09/2023	International Conference on Recent Trends in Engineering, Technology and Management(ICRTETM-2K23)
2	04-02-2024	International Conference on Modern Trends in Engineering and Management(ICMTEM-224)
3	04-04-2024	National Conference on Advancements in Industrialization & Safety Engineering(AISE-2024)



Dr.R.Surash Premil Kumar,M.E.,Ph.D
PRINCIPAL
STELLA MARY'S COLLEGE OF ENGINEERING
ARUTHENGANVILAI, AZHICKAL POST-629 202
KANYAKUMARI DISTRICT



SMCE/CSAY-CCR-14/FM-08/ /IN/R01

STELLA MARY'S COLLEGE OF ENGINEERING

Aruthenganvilai, Kallukatti Junction, Azhikal Post, Kanyakumari District - 629 202

Campus Activity Intimation Form

Date: 11.09.2023

From

Dr. F. MICHAEL RAJ

The Head/ Campus Activity Coordinator
Department of Mechanical Engineering
Stella Mary's College of Engineering

To

The Authorities Concerned,
Stella Mary's College of Engineering

(Dear Sir,

Sub: Intimation of International Conference on "Recent Trends in Engineering, Technology and Management" ICRTETM-2K23 - Regarding.

As per the Approval of the Management the following campus activity will be organized in the campus in general/by the Department of Mechanical Engineering. The details are as follows,

1	Name of Campus Activity:	INTERNATIONAL CONFERENCE
2	Date/s of Campus Activity:	14.09.2023 and 15.09.2023
3	Time of Campus Activity:	9.00 A.M. to 4.20 P.M.
4	Venue of Campus Activity:	New Conference Hall
5	Campus Activity coordinator/contact person:	Dr.F.MICHAEL RAJ
6	Campus Activity requested by:	Dr.F.MICHAEL RAJ
7	Name of the Guest (if any) :	Dr. A. Haiter Lenin, M.E. Ph. D., Professor, Department of Mechanical Engineering, WOLLO University, Kombolcha Institute of Technology, Ethiopia.
8	Date & Time of Arrival :	9.00 A.M
9	Venue of Reception & Refreshment for Guest:	Principal Cabin
10	Target audience	All the Students, Delegates from other Institutions.
11	No. of participants expected	14.09.2023 - 75 Nos. 15.09.2023 - 250 Nos.
12	Facility Required	Seminar Halls of Civil, CSE, ECE and EEE.

Thanking you,

Yours faithfully

Campus Activity coordinator/ Staff in-Charge

Principal

Information to:

1. Admin Team

2. All Heads

3. All Staff





STELLA MARY'S COLLEGE OF ENGINEERING
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC and Accredited by NRI, MRC & CUK)
Aruthengannallur, Kallukattel Junction Azhikal Post, Kanyakumari District-629202, Tamil Nadu, South India
DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

CIRCULAR

SMCE/MECH//2023-2024-ODD

11/09/2023

It is planned to conduct a International Conference on "**Recent Trends in Engineering, Technology and Management**" ICRTETM-2K23 for the students of II, III, & IV year Mechanical Engineering on 14.09.2023 & 15.09.2023. Dr.A.Haiter Lenin, will deliver the values and importance of **Recent Trends in Engineering, Technology and Management**.

All II, III, & IV year students are asked to assemble at the venue on time.

Venue: New Conference Hall

Coordinator

*MSP/Asst/MECH
11/09/23*

[Signature]
HoD

Copy to:

1. HoD
2. Faculty members of MECH
3. Students of MECH





Stella Mary's College of Engineering

Aruthengavillai, Kallukatti Junction, Azhikal Post, Kanyakumari District-629202

Conference Proposal form

Date 18.04.2023

From F. Michael Raj
Dr./Mr./Mrs. M. Sivaprakash
Head, C. Dhayananth Jegan
Department of Mechanical Engineering
Stella Mary's College of Engineering

To
The Chairman
Stella Mary's College of Engineering

Dear Sir

Subject: Permission to hold a Conference/Symposium/Workshop/Faculty Development Programme (FDP)/Seminar & Submission of Proposal form-Regarding

The Department of Mechanical Engineering is planning to conduct a Two days International Conference/Symposium/Workshop/Faculty Development Programme (FDP) in the Venue: New Conference Hall hall. The detail of the event is enclosed herewith for your perusal.

We hope you will give us the permission requested.

Thanking you in anticipation,

Yours faithfully,

[Signature] 13/04/2023

1. Name of the Department: Mechanical Engineering

2. Activity:

Seminar	Symposium	Conference	Workshop	FDP
		✓		

(Please tick mark the appropriate box)

3. Geographical Coverage

State	National	International	Campus
		✓	

4. Title of the Seminar / Symposium / Conference / Workshop / FDP

RECENT TRENDS IN ENGINEERING,
TECHNOLOGY & MANAGEMENT
"ICRTETM 2K23"

5. (i) From 14.09.2023
(ii) Total No. of days: 2

To 15.09.2023

6. Venue (write complete address):

New Conference Hall
Stella Mary's college of Engineering.

7. No. of participants expected to participate:

Students	Local	Outstation	Foreigner	Total
<u>10</u>	<u>20</u>	<u>50</u>	<u>05</u>	<u>85</u>

8. a). Objectives and importance of the Event.
b). Topics will be Discussed.
c). Future outcome.



Foreign Experts

Dr. Haitey Lemni, Prof./Mech, Ethio.

Dr. Jino Ramson, Prof/ECE, USA

National speakers

Dr. Mageshwarar, Prof/CSE, MIT
Trichy

Dr. Pnnice Marys Prof/CSE, Sathishan
Inst.
Chennai

- Details of proposed Event
- Details of proposed sessions
 - Name, address of resource persons delivering
Keynote/Plenary/Invited Lectures with theme.

10. Name and designation of Chairperson and Members of the organizing committee.

Dr. F. Michael Raj
Dr. M. Sivaprakash
Dr. C. Dhyananath Jegan

11. Name and address of Collaborating Registered/Professional bodies/National agencies/
registered societies etc. (if any)

12. Total proposed expenditure (in figures) 292100/-
Two Lakh Ninety two thousand
(In words) and hundred only.

- 12.1 Details of Expenditure: Enclosed

13. Financial Assistance & facilities to be provided by the Institution (Enclose Budget - ANNEXURE-1 &
Facility Requirement Statement- ANNEXURE-2)

14. Details of Grants planned to receive (Enclose Statement-ANNEXURE 3)

15. Technical programme of the Conference/Symposium (Please attach the conference announcement
brochure).

16. Name of the Staff Member responsible for submitting the audited statement of accounts for the present
grant, if sanctioned.

17. Total grant requested from The Management (in figures) Rs. 94600/-

(In words) Ninety four thousand and six hundred

18. Recommendation of the competent authority of the institution / Head of the institution

Name & Signature of the

[Signature]
19/04/2023.
Head

Head of Institution with Seal

Recommendations of Chairman

This is to certify that

- Institution has no objection in permitting the Department of _____ to
organize the Conference/ Symposium on _____ in the
Institute's premises from _____ to _____
- Space and other infrastructural facilities would be extended for organizing the aforesaid
Conference / Symposium .
- the fund allocated Rs. _____ shall be utilized for the purpose for which they are sanctioned.

Signature of

CEO

Vice Chairman

Chairman



STELLA MARY'S COLLEGE OF ENGINEERING ANNEXURE-1
ARUTHENGANVILAI, KALLUKATTI JUNCTION, AZHIKAL POST, KANYAKUMARI DISTRICT-629202
 Department of Engineering

1. **BUDGET FOR CONFERENCE**

		YEAR	2023-2024 (ODD/EVEN)
INVITATION, POSTER DESIGN and DISPATCH			
Items	Quantity	Amount	Total Amount
on	100	-	-
on Printing Charge		-	2000
ure Design		-	500
al Charge			1500
ver (A4 Size)			500
covering Letter			100
TOTAL AMOUNT :			4600
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE			
Items	Quantity	Amount	Total Amount
Shawl	10	300	3000
Chief Guest Memento	10	500	5000
Chief Guest Travelling Charge,	2	5000	10000
TOTAL AMOUNT :			18000
STAGE AND DECORATION COMMITTEE			
Items	Quantity	Amount	Total Amount
STAGE AND DECORATION COMMITTEE(Stage Decoration with flowers)	1	25000	25000
Chair	-	-	-
Banners	-	-	-
PA System	-	-	-
TOTAL AMOUNT :			25000
TECHNICAL COMMITTEE			
Items	Quantity	Amount	Total Amount
Remuneration to Chair Persons	4	5000	20000
Kit (File, Scribbling pad & Pen)	60	700	42000
4 Sheet Papers (Bundle)	5	300	1500
TOTAL AMOUNT :			63500
CERTIFICATE COMMITTEE			
Items	Quantity	Amount	Total Amount
Certificate Printing & Design	300	10	3000
Cash Prize	-	-	-
ize (Poster presentation, Circuit Debugging, Technical quiz)	2	500	1000
TOTAL AMOUNT :			4000
REFRESHMENT & FOOD COMMITTEE			
Items	Quantity	Amount	Total Amount
ea, Snacks for Participants and Our Students (FN & AN)	400	30	12000
ood (Participants and Our Students) (2 Days)	350	400	140000
TOTAL AMOUNT :			152000
OTHER EXPENSES			
Items	Quantity	Amount	Total Amount
Miscellaneous Expenses			25000
TOTAL AMOUNT :			292100

Summary

Committee Proposed Expenses

Committee Proposed Expenses	Amount(Rs)
INVITATION, POSTER DESIGN and DISPATCH COMMITTEE	4600
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE	18000
STAGE AND DECORATION COMMITTEE	25000
TECHNICAL COMMITTEE	63500
CERTIFICATE COMMITTEE	4000
REFRESHMENT & FOOD COMMITTEE	152000
OTHER EXPENSES	25000
TOTAL AMOUNT	292100
Amount Collected from Participants (X)	197500
Amount Collected from our Students (X)	-
Expected Sponsorship from supplier	-
Balance Amount Required	94600



2. Encluse-Facility Requirement Form- ANNEXURE-2

Details of Grants planned to receive ANNEXURE-3

Contribution from Students (Upon approval from Management)

No.	Semester	Amount per Student	Total (in Figures)	(In words)
1	S1/S2	—	—	NA
2	S3/S4	—	—	
3	S5/S6	—	—	
4	S7/S8	—	—	

3.2 Participant fee in case of Conference/Symposium/Workshop/FDP

Sl. No.	No. of Participants Expected	Amount to Receive (in figures)	(In words)
	UG/PG Students - 10 x 1500 Academician - 70 x 2000 Industrialists - 5 x 2500	15000 140000 12500	197500/- One Lakh, Ninety seven thousand and five hundred only

3.3 Details of grant from Sponsors

Sl. No.	Name & Address of Sponsor	Grant to Receive (in figures)	(In words)
	—	—	—

3.4 Details of grant planned to get from Professional Societies for the conduct of the event

Sl. No.	Name & Address of Professional Societies	Grant to Receive (in figures)	(In words)
	—	—	NA

3.5 Total Grant planned to receive

Sl. No.	Cumulative total of all the Incomes	Grant to Receive (in figures)			(In words)
		From Students & participants	Other Sources	Institution	
3.1	Contribution from Students	—			
3.2	Participant fee	197500			
3.3	Details of grant from Sponsors	—			
3.4	Details of grant planned to get from Professional Societies	—			
3.5	Contribution from Institution	94600			
3.6	Total Grant planned to receive	—			

Signature of Secretary, MECHASM
Association of Mechanical Engrs.

Faculty in Charge
Department of Mechanical Engineering

Head

(Dept. Seal with name)

Principal



Revision 01

3. Details of Grants planned to receive ANNEXURE-3

3.1 Contribution from Students (Upon approval from Management)

Sl. No.	Semester	Amount per Student	Total (in Figures)	(In words)
1	S1/S2	—	—	NA
2	S3/S4	—	—	
3	S5/S6	—	—	
4	S7/S8	—	—	

3.2 Participant fee in case of Conference/Symposium/Workshop/FDP

Sl. No.	No. of Participants Expected	Amount to Receive (in figures)	(In words)
	UG/PG Students - 10 x 1500 Academician - 70 x 2000 Industrialists - 5 x 2500	15000 140000 12500	197500/- One Lakh, Ninty seven thousand and five hundred only

3.3 Details of grant from Sponsors

Sl. No.	Name & Address of Sponsor	Grant to Receive (in figures)	(In words)
	—	—	—

3.4 Details of grant planned to get from Professional Societies for the conduct of the event

Sl. No.	Name & Address of Professional Societies	Grant to Receive (in figures)	(In words)
	—	—	NA

3.5 Total Grant planned to receive

Sl. No.	Cumulative total of all the Incomes	Grant to Receive (in figures)			(In words)
		From Students & participants	Other Sources	Institution	
3.1	Contribution from Students	—			
3.2	Participant fee	197500			
3.3	Details of grant from Sponsors	—			
3.4	Details of grant planned to get from Professional Societies	—			
3.5	Contribution from Institution	94600			
3.6	Total Grant planned to receive	—			

Signature of Secretary, MECHASM
Association of Mechanical Engg.

Faculty in Charge
Department of Mechanical Engineering

Head

(Signature Seal with name)

Principal

Revision 01



To Accounts Manager

As per the email from CEO Rs 50,000 is sanctioned for the expense and it may be released by the bank.

M. Laxmi

AERIAL VIEW OF STELLA MARY'S COLLEGE OF ENGINEERING



Editorial Board

Mr. S. Ajith Kumar

*Assistant Professor, Department of Mechanical Engineering,
Stella Mary's College of Engineering*

Mr. J. Starlin Deva Prince

*Assistant Professor, Department of Mechanical Engineering,
Stella Mary's College of Engineering*

Mr. E. Bravin Daniel

*Assistant Professor, Department of Mechanical Engineering,
Stella Mary's College of Engineering*

Mr. E. Prakash

*Assistant Professor, Department of Mechanical Engineering,
Stella Mary's College of Engineering*



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ICRTETM-2K23



PROCEEDINGS

**1ST INTERNATIONAL CONFERENCE ON RECENT
TRENDS IN ENGINEERING, TECHNOLOGY
AND MANAGEMENT (ICRTETM-2K23)**

Organized by



**Department of Mechanical Engineering
Stella Mary's College of Engineering**

*Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai,
Accredited by NAAC and Accredited by NBA (Mech & CSE)*

*Aruthengavallal, Arhithal Post,
Kanyakumari District - 629 202,
Tamil Nadu, India.*

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<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

International Conference on “Recent Trends in Engineering Technology and Management”-ICRTETM 2k23

A REPORT

Submitted by

Dr.C. DHAYANANTH JEGAN



Department of Mechanical Engineering

STELLA MARY'S COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai,

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Aruthenganvilai, Azhikal Post,

Kanyakumari Dist-629 202, Tamil Nadu.

www.stellamaryscoe.edu.in



Academic Year 2023-24 Odd semester

Date: 14/09/2023 and 15/09/2023

Time: 9.00AM to 4.20 PM

Venue: New Conference Hall, Stella Mary's College of Engineering

Objective:

This International Conference "ICRTETM - 2K23" aims to bring together experts, researchers, scholars, and students from various fields to exchange ideas, share their research findings, and explore the latest trends and challenges in their respective fields

Target Audience:

Students (UG/PG), Research Scholars / Delegates from Academia and Delegates from Industry.

Agenda/Program:

A detailed schedule of the event, including session names, speakers, and timings is attached.

Registration (if applicable):

Submission of full paper 31st August

Notification of acceptance of full paper 5th September

Submission of camera-ready paper 31st August, 2023

Deadline for early bird registration 31st August, 2023

Explain the registration process and deadlines.

Speakers/Trainers/Guests (if applicable):

1. Dr. A. Haiterlenin

Professor, WOLLO University, Kombolcha Institute of Technology, Ethiopia.

2. Dr. S. Prince Mary, Professor, School of Computing, Sathyabama Institute of Science and Technology, Chennai.

3. Dr. S.R.Jino Ramson, Principal Engineer, RF and mm Wave test development Department, Global foundries, USA

4. Dr. S. Maheshwari ,Assistant Professor, National Institute of Technology, Thiruchirappalli.



Organizing Committee:

CHIEF PATRON: Dr. Nazerath Charles Founder & Chairman Mrs. C. Sumitha Judeson Vice Chairman and Mr. J. Carol Judeson, Chief Executive Officer

PATRONS: Dr. J. Jenix Rino, Director and Dr. R. Suresh Premil Kumar, Principal

CONVENER: Dr. F. Michael Raj Professor & Head Department of Mechanical Engineering, Stella Mary's College of Engineering Mobile: 9042403450 Email : michealraj@stellamaryscoe.edu.in

CO-CONVENER: Dr.R.K. Madhumathi, Associate Professor & Head, Civil, Dr. F.R. Shiny Malar, Professor & Head, CSE Mr. N. Michael Franklin, Associate Professor & Head, ECE Dr. A.R. Gayathri, Professor & Head, EEE Mr. S. Ravi Kumar, Assistant Professor & Head, S&H

CO-ORDINATORS: Dr. M. Siva Prakash, Professor, Department of Mechanical Engineering, Stella Mary's College of Engineering and Dr. C. Dhayananth Jegan, Associate Professor, Department of Mechanical Engineering Stella Mary's College of Engineering Mobile : +91-9442233022

CO-CO-ORDINATORS: Mr. S. Ajith Kumar, Assistant Professor, Department of Mechanical Engineering, Mr. S. R. Raj Kumar, Assistant Professor, Department of Mechanical Engineering Mr. J. Starlin Deva Prince, Assistant Professor, Department of Mechanical Engineering Mr. P. Vijayan, Assistant Professor, Department of Mechanical Engineering Mr. E. Bravin Daniel, Assistant Professor, Department of Mechanical Engineering Mr. I.P. Rakesh, Assistant Professor, Department of Mechanical Engineering Mr. E. Prakash, Assistant Professor, Department of Mechanical Engineering Mr. V. Jude Vinoth, Assistant Professor, Department of Mechanical Engineering.

Contact Information:

Mr. E. PRAKASH, +91 99622 14347 prakash@stellamaryscoe.edu.in

Fees (if applicable):

NATIONAL DELEGATES

Students (UG/PG)	: Rs 1000
Research Scholars / Delegates from Academia	: Rs 2000
Delegates from Industry	: Rs 2500



INTERNATIONAL DELEGATES

Students (UG/PG)	:USD 50
Research Scholars / Delegates from Academia	:USD 70
Delegates from Industry	:USD 100

PAYMENT DETAILS

Bank Name: Union Bank of India

A/C Name: ASSOCIATION OF MECHANICAL ENGINEERING DEPARTMENT

A/C No. : 649801010050071

IFSC Code: UBIN0564982

Event Description:

This Conference focused on addressing specific challenges or issues in the field of Engineering, Technology and Management. Attendees have enriched their knowledge in problem-solving discussions and contributed to finding solutions to many problems.

This International Conference on "Recent Trends in Engineering Technology and Management" helps the participants to enhance their technical knowledge related to all domains. Chief guest Dr. A. Haiderlenin has given valuable insights related to the research areas in this domain and their applications. Moreover, the keynote speakers Dr. S. Prince Mary, Dr. S.R.Jino Ramson and Dr. S. Maheshwari have briefed about CSE, ECE and EEE domains respectively. The participants from various reputed Institutions across the world have also shared their knowledge during the interactive sessions.

Key Highlights:

Technical Discussions, Presentation of articles by Delegates, Key note Address by Experts from Different fields and from Different countries and Poster Presentation by Delegates in offline mode has been completed on two days.

Requirements/Equipment:

Technical or logistical requirements, such as audio-visual equipment, materials, or technology needed for presentations have been met by Dr. Pon Partiban, Mr. Gobi and the Program committee of the event.

Sponsors/Partners (if applicable):

Recognize Trio CADD, Nagercoil and CADPOINT, Nagercoil for promoting the event.

Promotion and Marketing:



Brochures and E-Brochures were used to promote the event and is attached.

Budget (if applicable:

Budget for the event, including income sources and expenses are attached.

Evaluation/Feedback:

The participants has shared their feedbacks and were used for future improvements.

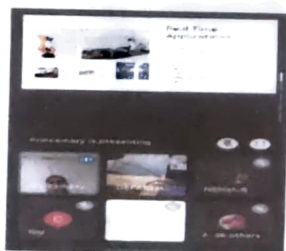
Acknowledgments:

Express our gratitude to the Management especially the Honorable Chairman, most respected and beloved Vice-Chairman and CEO.

Express our gratitude to all the Delegates, the staff and students who have contributed their efforts in making this event, a memorable one.

Appendices (if needed):

Include any additional documents or materials that may be relevant, such as maps, registration forms, or speaker profiles.





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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

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International Conference on "Recent Trends in Engineering, Technology and Management" ICRTETM-2K23 AGENDA & PROGRAM SCHEDULE

Day 1

Venue : New Conference Hall

Registration : 8.45 AM to 9.30 AM

Date: 14-09-2023, Thursday

Time: 09.00 am To 04.00 pm

Session Online Platform	Google Meet Link: https://meet.google.com/hbu-efmd-oix
Session In-charge	Mr.J.Starlin Deva Prince
<u>Inauguration (09.30 am)</u>	
Guest of Honor	Dr. M. SivaPrakash, M.E., Ph.D., (Professor, Department of Mechanical Engineering & Coordinator ICRTETM - 2K23, Stella Mary's College of Engineering)
Lighting the Lamp	All the Dignitaries
Introduction of ICRTETM-2K23	Dr. F. Michael Raj, M.E., Ph.D., (Professor, Convener ICRTETM - 2K23, Stella Mary's College of Engineering)
Chief Guest	Mr.J.Carol Judeson, B.E., M.B.A., (Chief Executive Officer, Stella Mary's College of Engineering)
Proceedings Launch	To be Released by : 1. The Chief Executive Officer, Stella Mary's College of Engineering. 2. The Chief Guest To be Received by : The Principal, Stella Mary's College of Engineering.
Foundation	Dr. J. Jenix Rino, M.E., M.B.A., Ph.D., (Associate Professor & Director, Stella Mary's College of Engineering) Dr. R. Suresh Premil Kumar, M.E., M.B.A., Ph.D., (Professor & Principal, Stella Mary's College of Engineering) Dr. R.K.Madhumathi, M.E., Ph.D., (Joint Director, Co-convener ICRTETM- 2K23, and R&D Coordinator, Stella Mary's College of Engineering)
<u>Session-1 (10.00 am to 11.00 am)</u>	
Introduction about the Chief Guest	Mr. E. Bravin Daniel, M.E., (Ph.D.) (Assistant Professor, Department of Mechanical Engineering, Stella Mary's College of Engineering)
Chief Guest Address	Dr. A. Haiter Lenin, M.E., Ph.D., (Professor, Department of Mechanical Engineering, WOLLO University, Kombolcha Institute of Technology, Ethiopia)
Honoring the Chief Guest	Dr. R. Suresh Premil Kumar, M.E., M.B.A., Ph.D., (Professor & Principal, Stella Mary's College of Engineering)
Break	11.00 am to 11.15 am





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International Conference on "Recent Trends in Engineering, Technology and Management" ICRTETM-2K23

Day 2

Inauguration (09.30 am)

Date: 15-09-2023, Friday	Time: 09.30 am- 04:00 pm
Session Online Mode	Google Meet Link: https://meet.google.com/hbu-efmd-oix
Session In-charge	Mr.J.Starlin Deva Prince
<i>Tamil Thaat Vaazhthu</i>	
Welcome Address	Dr. C. Dhayananth Jegan, M.E., Ph.D., (Associate Professor & Coordinator ICRTETM - 2K23, Stella Mary's College of Engineering)
Felicitation	Dr. R.K.Madhumathi, M.E., Ph.D., (Joint Director, Co-convener ICRTETM- 2K23, and R& D Coordinator, Stella Mary's College of Engineering)
Session-1 (10.00 am to 11.00 am)	
Introduction about the Chief Guest	Mr. S.R.Raj Kumar, M. Tech., (Assistant Professor, Department of Mechanical Engineering, Stella Mary's College of Engineering)
Session-1 (Chief Guest)	Dr. S.R.Jino Ramson, M.E., Ph.D., (Principal Engineer, RF and mm Wave test development Department, Global foundries, USA)
Honoring the Chief Guest	Mr.N.Michael Franklin, M.E., (Ph.D) (Associate Professor & Head, Co-convener ICRTETM- 2K23, Department of ECE, Stella Mary's College of Engineering)
Break	11.00 am to 11.15 am
Session-2 (11.15 am to 12.30 am)	
Introduction about the Chief Guest	Mr. J.Starlin Deva Prince, M.E., (Ph.D.,) (Assistant Professor, Department of Mechanical Engineering, Stella Mary's College of Engineering)
Session-2 (Chief Guest)	Dr. S. Maheshwari, M.E., Ph.D., (Assistant Professor, Department of Electrical and Electronics Engineering, National Institute of Technology, Thiruchirappalli)
Honoring the Chief Guest	Dr.A.R. Gayathri, M.E., Ph.D., (Associate Professor & Head, Co-convener ICRTETM- 2K23, Department of EEE, Stella Mary's College of Engineering)
Lunch Break	12.30 pm to 01.15 pm
Poster Presentation	1.15.00 pm to 03.00 pm
Valedictory Function	3.00PM - 4.00 PM
Feedback	Mr. S.R.Raj Kumar, M. Tech., (Assistant Professor, Department of Mechanical Engineering, Stella Mary's College of Engineering)
Vote of Thanks	Dr. F. Michael Raj, M.E., Ph.D., (Professor & Convener ICRTETM-2K23, Stella Mary's College of Engineering)
National Anthem	





STELLA MARY'S COLLEGE OF ENGINEERING



APPROVED BY AICTE, NEW DELHI, AFFILIATED TO ANNA UNIVERSITY, CHENNAI
ACCREDITED BY NAAC AND ACCREDITED BY NBA (MECH & CSE)
ARUTHENGANVILAI, AZHIKAL POST, KANYAKUMARI DISTRICT-629202, TAMIL NADU, SOUTH INDIA.



DEPARTMENT OF
MECHANICAL ENGINEERING



SAEINDIA
SOUTHERN SECTION

*Welcomes you all
For the*

International Conference on
"RECENT TRENDS IN ENGINEERING, TECHNOLOGY
AND MANAGEMENT"



CHAIRMAN

Dr. NAZERATH CHARLES
Ex Indian Navy



14th & 15th SEPTEMBER, 2023

(Signature)
(Signature)
(Signature)

Dr.F.Michael Raj
Convener &
HOD/MECH

(Signature)
Dr.R.Suresh Premil Kumar
Principal

Dr.J.Jenix Rino
Director



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DEPARTMENT OF

MECHANICAL ENGINEERING



SAEINDIA
SOUTH EAST ASIAN

Welcomes you all

For the

International Conference on
"RECENT TRENDS IN ENGINEERING,
TECHNOLOGY AND MANAGEMENT"

ICRTETM - 2K23



14th & 15th SEPTEMBER, 2023

INTERNATIONAL SPEAKER

Dr. A. Haite Lenin

Professor, WOLLO University,
Kombolcha Institute of
Technology, Ethiopia

Dr. J. Jenix Rino
Director

Chairman
(

Dr. F. Michael Raj
Convener &
HOD/MECH

Dr. R. Suresh Premil Kumar
Principal





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Aruthenganvilal, Azhikal Post, Kanyakumari District-629202, Tamil Nadu, South India.

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Principal

Dr. J. Jeyarajoo
Inspector





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DEPARTMENT OF MECHANICAL ENGINEERING

*Welcomes you all
For the*



SAEINDIA
SOUTHERN SECTION

International Conference on "RECENT TRENDS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT"



ICRTTEM - 2023
14th & 15th SEPTEMBER, 2023

Dr. F. Michael Raj
Convener &
HOD/MECH

Dr. Suresh Premalal
Principal

Dr. J. J. J. J. J.
Director

Feedback Form

2 responses

Publish analytics

Name of the Participant

2 responses

AMUDHA K

KANAKASABAPATHI.R.S.

Age

2 responses

26

29

Designation

2 responses

 Copy



- UG Scholar
- PG Scholar
- Research Scholar
- Academician
- Industrial Delegate

Department

2 responses

Commerce

COMPUTER APPLICATIONS



Organization/Institution

2 responses

Vels University

NOORUL ISLAM CENTER FOR HIGHER EDUCATION , KUMARAKOIL.

State

2 responses

Tamil Nadu

TAMILNADU

Country

2 responses

India

INDIA

Mobile

2 responses

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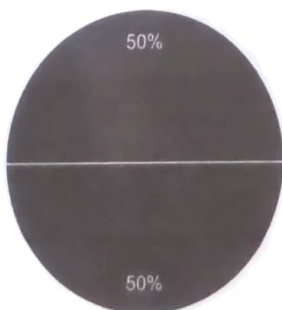
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Session 1

How did you enjoy the Session

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2 responses



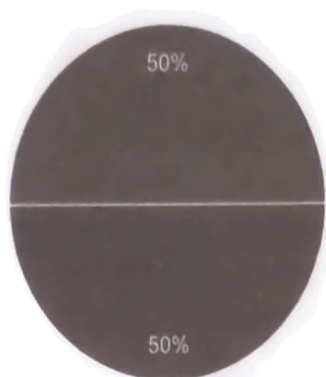
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The way of arrangement of the Program was

2 responses

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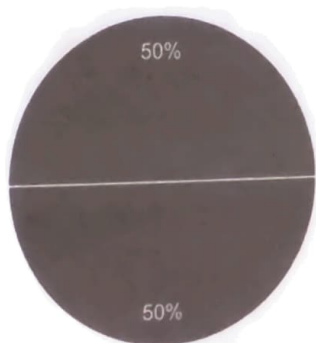


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Are you satisfied with the venue arrangements

2 responses

 Copy

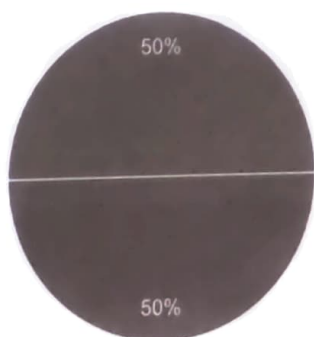


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Does the session meet your expectation

2 responses

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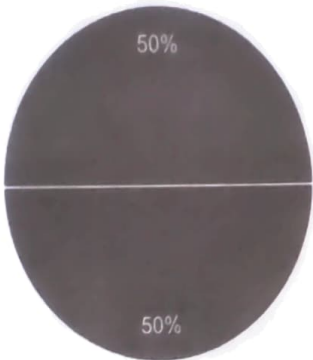
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From the knowledge and information point of view, how effective the program was?

 Copy

2 responses

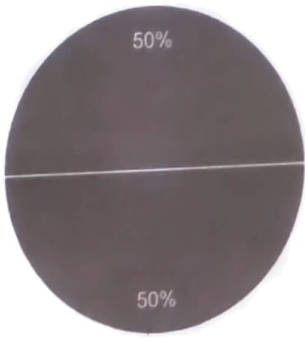


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Overall Rating of the Program

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2 responses

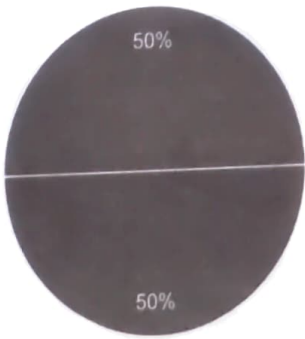


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Are you interested to attend such kind of program in future

 Copy

2 responses



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Drop your valuable comments / Suggestion if any

2 responses

It's very useful for all the Research scholar

Conduct some other conference like this

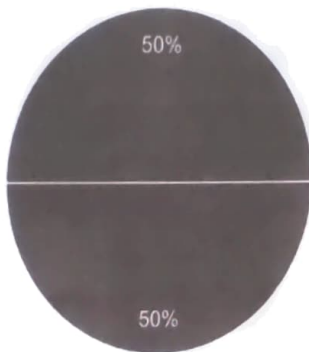


Session 2

How did you enjoy the Session

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2 responses

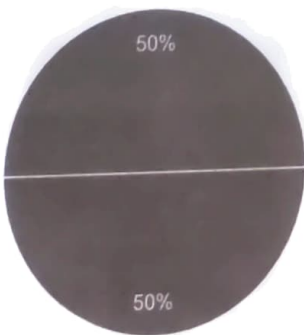


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The way of arrangement of the Program was

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2 responses

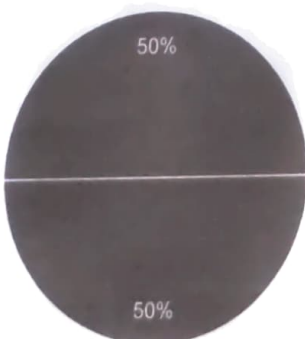


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Are you satisfied with the venue arrangements

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2 responses

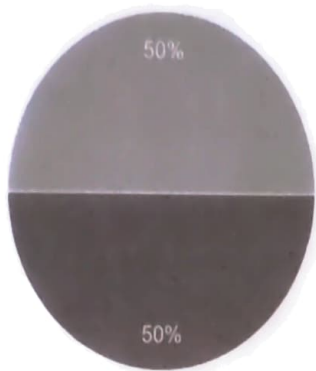


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Does the session meet your expectation
2 responses

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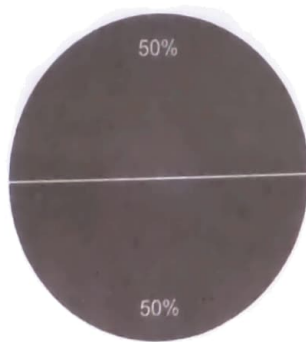


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From the knowledge and information point of view, how effective the program was?

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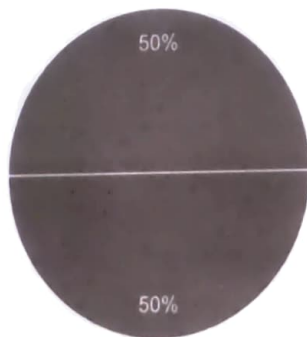


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Overall Rating of the Program

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2 responses



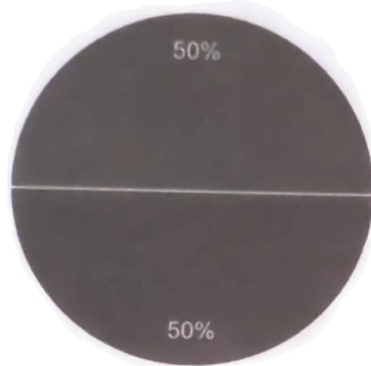
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Are you interested to attend such kind of program in future

2 responses

 Copy



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● 0

Drop your valuable comments / Suggestion if any

2 responses

It's very useful

Nothing

Share three point which you have learnt from speaker

2 responses

It's recommended

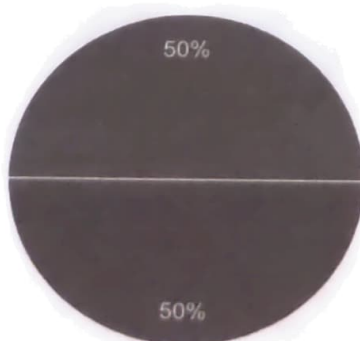
Good

Session 3

How did you enjoy the Session

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2 responses

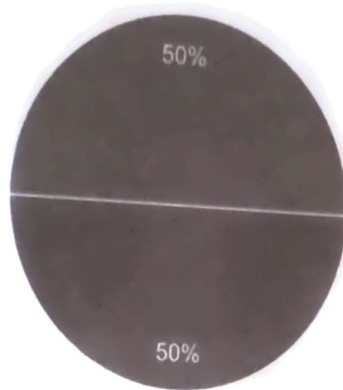


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the way of arrangement of the Program was
2 responses

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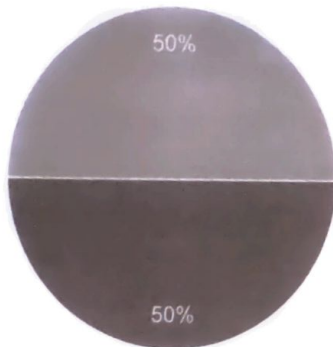


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Are you satisfied with the venue arrangements

2 responses

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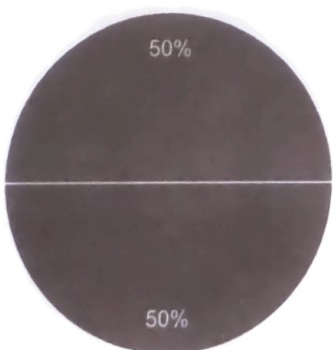


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Does the session meet your expectation

2 responses

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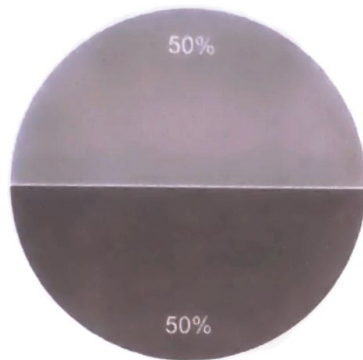
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From the knowledge and information point of view, how effective the program was?

2 responses

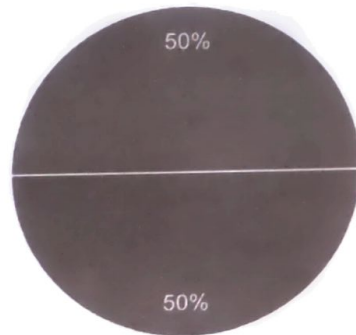
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Overall Rating of the Program

2 responses

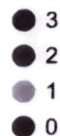
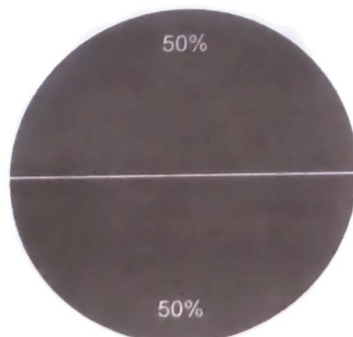
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Are you interested to attend such kind of program in future

2 responses

 Copy



Drop your valuable comments / Suggestion if any

2 responses

Highly recommended

Nothing's



Share three point which you have learnt from speaker

2 responses

Learn lot

Nothing

Session 4

 Copy

How did you enjoy the Session

2 responses

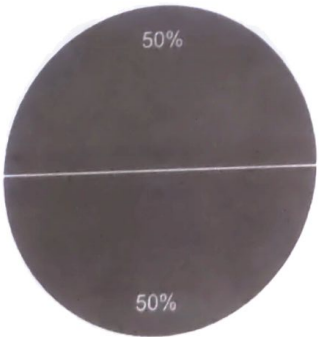


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The way of arrangement of the Program was

2 responses



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PROCEEDINGS OF

1ST INTERNATIONAL CONFERENCE ON RECENT
TRENDS IN ENGINEERING, TECHNOLOGY
AND MANAGEMENT (ICRTETM-2K23)

September 14th & 15th, 2023

Organized by



Department of Mechanical Engineering
Stella Mary's College of Engineering

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Accredited by NAAC and Accredited by NBA (Mech & CSE)

Aruthenganvilai, Azhikal Post,
Kanyakumari District - 629 202,

Tamil Nadu, India.

www.stellamaryscoe.edu.in

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RESEARCH & DEVELOPMENT CELL
FROM RESEARCH EXPLORATION TO PROJECT DEPLOYMENT



S-EINDIA
SOUTHERN SECTION



PROCEEDINGS OF

First International Conference on “Recent Trends in Engineering, Technology & Management”

(ICRTETM – 2K23)

14th & 15th September 2023

Organized by



Department of Mechanical Engineering

STELLA MARY'S COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC and
Accredited by NBA (MECH & CSE)

Aruthenganvilai, Kallukatti Junction, Azhikal Post,
Kanyakumari Dist-629 202, Tamilnadu, India.

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<https://sanpublications.nobelonline.in/product/proceedings-of-1st-international-conference-on-recent-trends-in-engineering-technology-and-management-icrtetm-2k23/>

MESSAGE FROM CHAIRMAN

Dear Esteemed Participants,

I am delighted to welcome you all to the 1st International Conference on “Recent Trends in Engineering, Technology & Management ICRTETM – 2K23” organized by the Department of Mechanical Engineering at Stella Mary’s College of Engineering. This conference serves as a vital platform for students, researchers, and industry experts to come together and exchange knowledge, ideas, and innovations in multidisciplinary areas in engineering.



In today's rapidly evolving world, Engineering plays a pivotal role in shaping our future. It is a field that continually pushes boundaries and explores new horizons. This conference embodies our commitment to fostering collaboration, sharing groundbreaking research, and facilitating discussions that have the potential to drive positive change. Over the course of the conference, you will have the opportunity to engage in stimulating discussions, attend enlightening keynote addresses and witness a diverse range of research presentations. Our aim is not only to showcase the latest advancements but also to encourage networking and collaboration among participants from different corners of the globe.

I would like to express my heartfelt gratitude to the organizing committee, speakers, sponsors and participants for their dedication and support in making this event a reality. Your collective efforts have been instrumental in creating this platform for knowledge dissemination and scholarly exchange. I encourage all the participants to take full advantage of this conference by actively participating in discussions, sharing your insights and building connections. Together, we can contribute to the advancement of Mechanical Engineering and make a positive impact on society.

I wish you all a productive and inspiring conference experience. May the next few days be filled with valuable discussions and new discoveries.

Warm regards,

Dr. NAZERATH CHARLES

Chairman,

Stella Mary’s College of Engineering.

MESSAGE FROM VICE- CHAIRMAN

Dear Distinguished Guests, Scholars, and Participants,

With great pleasure I extend my warmest welcome to all of you to the 1st International Conference on “Recent Trends in Engineering, Technology & Management ICRTEM – 2K23” organized by the Department of Mechanical Engineering at Stella Mary’s College of Engineering. This conference stands as a testament to our commitment to advancing knowledge, fostering innovation and promoting global collaboration in the field of multidisciplinary areas in engineering.



Mechanical Engineering is at the forefront of technological advancement, driving innovations that have a profound impact on our daily lives. This conference serves as a valuable platform for the exchange of ideas and the dissemination of cutting-edge research findings that are poised to shape the future. You will have the privilege in engaging the enlightening discussions, attending keynote addresses from renowned experts and exploring a diverse array of research presentations. The diverse backgrounds and perspectives represented here will undoubtedly lead to fruitful conversations and the forging of new partnerships.

I wish to express my deepest gratitude to the dedicated organizing committee, our esteemed speakers, generous sponsors and all the participants for their unwavering support and commitment to making this event a resounding success. It is your collective effort that has made this conference possible and promises to make it a memorable and impactful experience. I encourage you to actively participate in the sessions, share your insights, and engage in meaningful dialogues. Let us use this unique opportunity to not only expand our knowledge but also to build bridges that connect us across borders and disciplines.

I hope that this conference inspires you and provides the necessary impetus to embark on new research endeavors and collaborations that will contribute to the continued advancements of Mechanical Engineering. May the next few days be filled with fruitful discussions, new discoveries, and lasting connections.

Warm regards,

Mrs. C. SUMITHA JUDESON

Vice Chairman,

Stella Mary’s College of Engineering.

MESSAGE FROM CHIEF EXECUTIVE OFFICER

Dear Esteemed Participants and Honored Guests,

I am truly delighted to extend a warm welcome to all of you to the 1st International Conference on “Recent Trends in Engineering, Technology & Management ICRTETM – 2K23” organized by the Department of Mechanical Engineering at Stella Mary’s College of Engineering. I am honored and excited to be a part of this exceptional gathering of global minds.



Conferences like this are vital platforms for the exchange of knowledge, innovation, and forward-thinking ideas. In our interconnected world, where boundaries between industries and disciplines blur, it is events like these that inspire breakthroughs and drive progress. This conference, with its focus on Recent Trends in Engineering, Technology and Management is particularly significant as it addresses challenges and opportunities that are at the forefront of our rapidly evolving world. The solutions and insights generated here have the potential to shape industries, impact societies and improve lives.

I extend my heartfelt gratitude to the dedicated organizing committee, distinguished speakers, supportive sponsors, and all the participants who have worked tirelessly to bring this event to fruition. Your unwavering commitment to the advancement of knowledge is the driving force behind this conference success. I encourage each of you to actively engage in various sessions, seize the opportunity to learn from experts, and network with fellow participants. This conference offers a unique chance to forge connections, share ideas, and ignite collaborations that can lead to meaningful change.

As we embark on this journey of discovery and innovation, let us not only focus on the challenges but also the limitless possibilities that lie ahead. The synergy of diverse perspectives and the collective wisdom gathered here have the potential to revolutionize our understanding of Recent Trends in Engineering, Technology and Management. I am confident that this conference will inspire you, challenge your thinking and spark new ideas. May it be a catalyst for the groundbreaking work that lies ahead and a testament to the power of collaboration on a global scale. I wish you all a productive, enlightening, and inspiring conference experience.

Sincerely,

Mr. J. CAROL JUDESON

Chief Executive Officer,

Stella Mary’s College of Engineering.

MESSAGE FROM DIRECTOR

Dear Distinguished Delegates and Scholars,

I am deeply honoured to extend my warmest welcome to all of you at this prestigious 1st International Conference on “Recent Trends in Engineering, Technology & Management ICRTETM – 2K23” organized by the Department of Mechanical Engineering, Stella Mary’s College of Engineering. This event represents a convergence of intellect, culture, and expertise, where the global community comes together to share knowledge and inspire groundbreaking advancements.



As we navigate the ever-evolving landscape of academia and research, it is paramount that we foster collaboration and cross-border dialogue. This conference is a testament to our collective commitment to the pursuit of knowledge and the betterment of society.

I commend the dedication and diligence of the organizing committee, speakers, and participants who have worked tirelessly to make this event success. I am confident that the papers and discussions that emerge from this conference will contribute significantly to the advancement of the respective fields. I eagerly anticipate the insights and discoveries will emerge from deliberations.

Congratulations for your unwavering commitment to the pursuit of knowledge, and I wish you all a productive and enriching conference.

Sincerely,

Dr. J. JENIX RINO

Director,

Stella Mary’s College of Engineering.

MESSAGE FROM PRINCIPAL

I am happy to inform that Stella Mary's College of Engineering is conducting an International Conference on "Recent Trends in Engineering, Technology & Management ICRTETM – 2K23" organized by Department of Mechanical Engineering.



The conference spans two days for the presentations. It has always been our belief that every human being has an unending pool of talent that needs to be fostered. The talent acquired has to be brought out through research and ultimately they have to be converted into a product or process that benefits the community.

This International Conference will serve as a platform to share emerging ideas in Engineering, Technology and Management. I hope that the deliberations and discussions during the conference will prove beneficial to academia and researchers. The keynote presentations will offer ample opportunities for participants to discuss, debate, and exchange ideas and information.

I am confident that this conference will identify areas that will contribute to the overall development of our institution, state and nation. I extend my best wishes to the dignitaries, participants, especially the organizing team and the publishing committee in making this event a great success.

Sincerely,

Dr. R.SURESH PREMIL KUMAR

Principal,

Stella Mary's College of Engineering.

MESSAGE FROM CONVENER

Dear Esteemed Participants and Distinguished Guests,

It is a great honor and privilege to welcome you all to the 1st International Conference on “Recent Trends in Engineering, Technology & Management ICRTEM – 2K23” organized by the Department of Mechanical Engineering at Stella Mary’s College of Engineering. This conference serves as a platform to pursue knowledge, innovation, and international collaboration in the field of Engineering, Technology & Management.



As the Convener of this conference, I am deeply humbled by the opportunity to bring such a diverse and accomplished group of scholars, researchers, practitioners, and visionaries around the globe. Conferences like these are not just gatherings of individuals; they are the catalysts for progress and transformation. They offer us a unique chance to exchange ideas, challenge the status and explore uncharted territories in respective fields. I would like to express my sincere gratitude to our dedicated organizing committee, our esteemed keynote speakers, generous sponsors and most importantly, to all of you who have chosen to be a part of this event. Your commitment and enthusiasm have been instrumental in making this conference a reality.

The theme of the conference encapsulates the essence of the challenges and opportunities that lie ahead. It reflects our collective determination to address critical issues and explore innovative solutions. Together, we have the capacity to drive positive change and make a meaningful impact on society. I hope this conference inspires you, encourages you to push the boundaries of your research and provides a fertile ground for collaboration and innovation. May it be an unforgettable journey of discovery, learning and networking.

Thank you for being an integral part of this extraordinary event. Your presence here is a testament to your commitment to the advancement of knowledge and the betterment of the global community. I look forward to engage with each of you, sharing insights, and collectively shaping the future of your field.

Warm regards,

Dr. F. MICHAEL RAJ

Convener & Head of the Department,
Stella Mary’s College of Engineering.

MESSAGE FROM JOINT DIRECTOR AND R & D CONVENER

As the Joint Director and R & D Convener of Stella Mary's College of Engineering, I extend a warm welcome to all participants of the International Conference on Recent Trends in Engineering, Technology and Management (ICRTETM – 2K23).



This conference serves as a crucial platform for scholars, researchers, and industry experts to come together and share their knowledge, insights, and innovative ideas in rapidly evolving fields.

In today's ever-changing world, staying updated on recent trends and advancements is paramount. Our conference, featuring a diverse array of topics and esteemed speakers, offers a unique opportunity to gain valuable insights into the latest developments and future prospects in engineering, technology and management.

I wish to express my heartfelt gratitude to the organizers, keynote speakers, session chairs, and all participants for their unwavering dedication and contributions that have made this conference a resounding success. Your active participation and intellectual input are instrumental in shaping the future of these disciplines. I wish you a productive and enlightening experience during the Conference.

Warm regards,

Dr. R.K.MADHUMATHI

Joint Director and R & D Convener,
Stella Mary's College of Engineering.

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Principal, SMCE.

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Characterization and Production of Bio ethanol from Manila Tamarind Leaf through Fermentation

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Abstract

The production of bio ethanol from bio waste and the investigation of its thermal characteristics are the driving forces behind this research. The suitability of bio ethanol in spark-ignition engines can be determined by studying the thermal properties. After extraction, pretreatment, enzymatic hydrolysis and fermentation, bio ethanol was created. The raw material was screened prior to this procedure using thermogravimetric analysis (TGA) to determine the rate of mass loss versus temperature. The biggest percentage mass loss of TGA, up to 34%, was seen in the leaves of the Manila tamarind. Cellulosic ethanol was produced as a result of the enzymatic degradation of cellulose into fermentable sugars. For Manila Tamarind leaves, the highest yield was about 29% by weight. The thermal parameters of the extracted ethanol, including calorific value, density, viscosity, octane number and Cetane number, were analyzed. Blends of tire oil, bio ethanol and gasoline performed better for all these properties. Additionally, Fourier Transform Infrared Spectrometry spectra were used to validate the functional group concentrations of alcohol, alkynes, carbonyl, amide, and aromatic molecules.

Keywords: Bio ethanol, Fermentation, FTIR, Hydrolysis, Manila Tamarind Leaf, TGA.

Modal and Spectrum analysis of vibration-free transportation system using Finite Element Analysis

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Abstract

The transportation trailer system consists of many sensitive components which are to be handled properly during transportation. During the transportation, the system will experience the vibration and shock load due to road profiles, trailer acceleration and deceleration. If the transportation load is felt by the system, it may deteriorate the health of many elements of the system at resonance. To isolate such vibration loads on system, the vibration isolation system is designed and analyzed. The system transportation is modeled and analyzed by finite element method. The Power spectral density (PSD) for random road profiles based on ISO-(8606) standard is considered for FEA spectrum analysis and mathematical calculations. The results of finite element analysis using ANSYS software and mathematical calculated values are correlated for validation and error percentage are reported.

Keywords: Vibration isolation, Spectrum analysis, Random vibration, Road profile.

Pneumatic Operated Polymer Composites Casting Machine

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Abstract

A pneumatic casting machine for polymer composites is designed and built in this article. Due to its desirable mechanical qualities and lightweight features, polymer composites are widely used in many sectors. The suggested equipment makes use of pneumatic actuators to enable precise and effective casting. To regulate the casting process, the machine design incorporates pneumatic parts such actuators, valves, and pressure regulators. Operators can enter casting parameters like pressure, flow rate, and mould specs using a user-friendly interface. To ensure longevity and lightweight operation, the fabrication process entails the integration of structural components utilizing high-strength polymer composites. The efficiency and dependability of the casting machine are improved by the pneumatic control and polymer composites combination. The proposed design is a promising solution for industries seeking better ways to create high-quality polymer composite products. It is used to cast polymer composites in a variety of sizes.

Keywords: Composite, Pneumatic, Polymer, Longevity.

Pneumatic Powered Clamping using Toggle Mechanism

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Abstract

In the pneumatic unit, the toggle operation is performed. Toggle clamps are also named quick clamp, quick release clamp over-centre clamp, etc. A toggle clamp is a fastening device that usually consists of a handle to control the device, a holding bar to grip the work piece, and a linkage system of pivot pins and levers to boost the applied force. Once engaged, the toggle clamp essentially becomes locked. A toggle clamp typically serves to secure an object tightly in order to prevent it from moving or separating when inward pressure is applied. Toggle mechanism is used widely in the mechanical industry for various applications ranging from injection moulding machines to tools & fixtures. Toggle clamps are available for different types to suit the desired application.

Keywords: Pneumatic, Toggle clamps, Moulding.

Pick & Place Robot with Pneumatic Power for Commercial Applications

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Abstract

An industrial pick-and-place robot powered by pneumatic control is described in this abstract. Pneumatic actuators are used in the robot's design to precisely manipulate objects, providing a flexible answer to a variety of jobs. In order to properly recognize target objects and carry out effective pick and place operations, the system integrates cutting-edge sensors and control algorithms. In comparison to its electric rivals, the robot uses pneumatic mechanisms to demonstrate improved agility, cost-effectiveness, and system simplicity. This study shows how pneumatic control can be used effectively, offering a possible path toward revolutionizing automation in manufacturing and assembly processes across industries. Pneumatic control has the ability to optimize robotic automation and increase efficiency in contemporary manufacturing settings, as demonstrated by the suggested pick and place robot.

Keywords: Robot, Automation, Manufacturing, Actuators, Algorithms.

Design, manufacturing, mechanical testing, and in vitro assessment of 3D printed ZrO₂ reinforced polylactide scaffolds

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Abstract

In the current study, the design and manufacturing of 3D-printed polylactide/ZrO₂ composites using a fused deposition modeling (FDM)-based technique is demonstrated. ZrO₂ created using the sol-gel method and polylactide (PLA) purchased commercially were utilized as the sources for the extrusion of composite filaments, which were then 3D printed using the FDM process. The investigation's findings guaranteed a maximum of 20 weight percent ZrO₂ loading in PLA matrix for easy and smooth filament extrusion and subsequent defect-free 3D printing of required shape and geometry. The morphological investigations confirmed that ZrO₂ particles were uniformly dispersed throughout the PLA matrix, and the structural study of the 3D printed specimens demonstrated the phase stability of PLA and ZrO₂ in composites. Furthermore, the 3D-printed specimen's infill thickness pattern was found to be 400 µm, suggesting improved consistency with the 0.4 mm printer nozzle that was used for printing. There is discussion over a progressive decrease in PLA/ZrO₂ composite's mechanical strength as ZrO₂ content is increased. The 3D-printed PLA/ZrO₂ composite specimens showed very little Cytotoxicity, according to the results of in vitro experiments.

Keywords: 3D Printing, PLA/ZrO₂, FDM Process.

Manufacturing and Testing a Novel Mechanical Hand Design

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Abstract

Safety concerns rank among the top issues in science labs and industrial plants. The mechanical hand is a safety device that replaces a human hand in moving goods. The aim of this research is to determine the appropriate material, design, and fabrication process for a mechanical hand. With the use of CAD software, the proper material is chosen and a new mechanical hand design is produced. The crucial parts of the mechanical hand have been examined using ANSYS software, and analytical calculations have also been performed for the parts to produce a more precise outcome. After comparing the analytical and finite element results, it was determined that the mechanical design used in this study achieves all of its goals. Experiments on the mechanical hand are conducted to examine its performance in terms of comfort, motion, maximum load, and heat after the manufacturing process and finite element analysis. The strength of the material can be increased and it can be utilized in high temperatures by choosing the right material. In the new design, the material's strength and safety are raised, and the likelihood of key component failure is reduced. The findings provide fresh design concepts to enhance the mechanical hands' functionality and appearance.

Keywords: ANSYS, CAD Software, Finite element analysis.

Design and Fabrication of Mechanical Maize Decobber

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Abstract

The grain maize, also referred to as corn in many English-speaking nations, was cultivated in prehistoric times by native people. It was farmed in many types throughout central and southern Mexico by the Aztecs and Mayans, who used it for grinding or cooking. The crop eventually reached every corner of the continent, having first expanded throughout America circa 1250 BC. Any sizable or dense population in the area created a robust trading network by utilizing the abundance and diversity of maize crops. Following the late 15th and early 16th centuries, when Europe first made contact with the Americas, explorers and traders brought maize back to Europe and used trade to spread it to other nations. The popularity of maize and its adaptability to a variety of climates caused it to expand throughout the rest of the world. The two current approaches of maize dehiscence in the agriculture sector—hand breaking the grains or utilizing heavy gear for deseeding—are inefficient for a developing nation like India where farmers have limited capital to invest. For this reason, an inventive concept or product that is workable, secure, economical, and fruitful for Indian farmers is required.

Keywords: Aztecs, Mayans, Maize, Dehusking.

Analysis of Human Factors Engineering Industries

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Abstract

Human factors engineering is currently gaining popularity, originates from the requirement to take into account people and their interactions with materials, equipment, data, practices, and surroundings in such advances as well as in the creation of a technological framework. The objective is to guarantee that people and Technology and humankind cohabit in uneasy coexistence, with tasks and equipment suited to human characteristics. The combination and utilization of scientific ideas to the research, development, implementation, and enhancement of interconnected networks of people, resources, and machinery using data to provide the most effective and The term effective operating and work environment as engineering for industry. Regarding this, this analytical investigation explores relevant data on specifics of the human aspect, the multidisciplinary character of Human elements and the effects of human elements of industrial design and engineering. Additionally, it talks about the basic relationship between industrial and human factors engineering, in addition to the significance of education the importance of human elements to an industrial engineer, as an industrial engineer with experience in human resources factors is perfect as he may examine several create substitutes for equipment and procedures, trade-offs when choosing equipment, and come to a superior resolution.

Keywords: Research, Development, Implementation, Enhancement.

Analysis of Vehicle Vibrations Caused by Both Smooth and Uneven Road Conditions

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Abstract

In reality, the goal of this study is to determine the vibrational analysis of various vehicle steering systems for various road profiles. Furthermore, our goal is to determine or gather vibration measurements in order to understand steering vibration under various road situations. In this study, we have determined the steering vibrational values in various road profiles using an accelerometer sensor. Additionally, we used a digital to analog converter to transform the information that the sensor was reading into analog values. Our approach is the standard procedure for determining the vibrational values of both power and normal steering on both smooth and uneven roads. We input the values obtained from the sensor readings into the DEWE program for analysis. This allows us to determine which steering will cause the most vibration in various road profiles. The goal of this experiment is to determine which steering, under various driving circumstances, will cause greater vibration.

Keywords: Steering, Accelerometer, Sensor, Analog, DEWE program.

Characterization Studies of Aluminium with Nano Graphite, Boron Carbide and Silicon Carbide Hybrid Composites

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Abstract

The high strength aluminum alloy 5083 which is highly resistant to heat and corrosion, very strong, malleable and ductile, at various compositions are used. Boron carbide and silicon carbide reinforced composite with boron carbide addition of 1 wt%, 1.5 wt% and 2 wt% and silicon carbide 2 wt%, 2.5 wt% and 3 wt% addition was successfully fabricated with Aluminum 5083. Hardness studies indicate that lower hardness values are seen for the as-cast alloy whereas improved hardness value for the alloy reinforced with boron carbide and silicon carbide addition. Composites reinforced with 2 wt% boron carbide and 3 wt% silicon carbide addition exhibits the highest hardness value. The wear test results show that the composites reinforced with 2 wt% boron carbide and 3 wt% silicon carbide exhibit higher wear resistance. It can be concluded that composite which contain 2 wt% boron carbide and 3 wt% silicon carbide composite is suitable for the marine application. By using the aluminum 5083 along with 2 wt% boron carbide and 3 wt% silicon carbide the hardness and the wear strength is improved. Hence the hardness and wear strength of the composite material has been improved for marine applications.

Keywords: Aluminum alloy 5058, Boron carbide, Silicon carbide, Reinforced.

Characteristics of Bio Oil Production From Coconut Leaf Stalk

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Abstract

Due to envisaged fossil depletion as a result of increasing energy consumption per capital and environmental degradation resulting from its global warming, there is necessity of long-term alternative energy sources. In this project we are going to investigate the properties bio oil from coconut leaf stalk. The bio oil of coconut leaf stalk is produced by the pyrolysis method. Pyrolysis bio-oil is a second-generation biofuel that could be used in mobile and stationary applications or as source of valuable oxygen-containing chemicals. Currently, bio-oils have been produced commercially in several countries. In the industrial-scale tests, bio-oils have been demonstrated to be a good option to replace heavy petroleum oils in distinct heating applications. In this project we are going to test the physical properties and ultimate analysis of coconut leaf stalk oil. The physical properties such as density, flash point, fire point, pH value and kinematic viscosity were found out for this shell oil. The ultimate analysis is done to determine the carbon, sulphur, moisture, nitrogen oxygen content present in the coconut leaf stalk oil. For the extraction of oil, the slow type pyrolysis is taken account to produce the high yield of oil from the coconut leaf stalk. The maximum yield of extraction of oil is at the temperature range from 300°C to 500°C. In this report, the detailed discussion about the coconut leaf stalk oil properties for any further application for Engineering Application.

Keywords: Fossil, Coconut leaf stalk, Pyrolysis, Bio fuel, Flash point, Fire point.

Morphological Study of Glass Fibre and Nylon Fibre with Epoxy Composites

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Abstract

In this study, composite plates were manufactured by Compression molding process with epoxy matrix reinforced with Glass fiber plain fabric and Nylon fiber, using to an innovative architecture. Results of the mechanical properties of composites were obtained, after the tensile tested samples were analyzed with scanning electron microscopy, x-ray diffract gram, and energy dispersive x-ray, with these methods are used to observe reinforcement and matrix fractures.

Keywords: Composite, Epoxy matrix, X-ray diffract gram.

Evaluation of Mechanical behaviour of Glass Fiber and Nylon Fiber Epoxy Composites

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Abstract

In this study, the mechanical properties of glass fiber reinforced epoxy composite were to be fabricated and tested. Composite were fabricated using glass fiber and nylon fiber with epoxy resins at three different compositions. Glass fibers are having excellent properties like high strength, flexibility, stiffness and resistance to chemical harm. The Nylon fiber has outstanding durability and excellent physical properties. The main features are exceptional strength, high elastic recovery, abrasion resistance, lustre, washability, resistance to damage from oil and many chemicals, high resilience, colourability, relatively insensitive to moisture, smooth, soft and long lasting fibers from filament yarn, light weight and warm fabrics from spun yarn. The different compositions are three glass fiber with two nylon fiber, four glass fiber with one nylon fiber and five glass fiber only. The tests to be conducted are tensile test, compression test, impact test and water absorption test.

Keywords: Composite, Epoxy resin, Abrasion, Lustre, Washability, Resilience.

Synthesis and Analysis of Bio Oil from Tamarind Shell

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Abstract

There is a need to find an alternative fuel energy sources for the future fuel demand. Biofuel production is an important method to utilize the biomass that converts it into bio-diesel. The recent research is going towards this. Pyrolysis is one of the methods to extract bio-oil from the biomass. Pyrolysis converts the biomass into bio oil, char and gases by the absence of oxygen. In this paper we have taken the tamarind shell biomass and extracting the oil from it and analyzed the various composition and functional group present in the oil. The physical properties such as density, flash point, fire point, pH value and kinematic viscosity were found out for this shell oil. For the extraction of oil, the slow type pyrolysis is taken account to produce the high yield of oil from the tamarind shell. The maximum yield of extraction of oil is at the temperature range from 300°C to 500°C. Production of oil is based on the factor of size of raw material and the range of temperature which is given as input to the pyrolysis reactor. In this report, the detailed discussion about the tamarind shell oil properties for any further application for Engineering Application.

Keywords: Pyrolysis, Tamarind Shell, Bio Oil

Design and Modifications of Sensing Robot for Safety Applications

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Abstract

Intelligent machines and robotics system with different level of complexity are used today for performing various processes in industries and in day today life. This project is specially designed to save of inspection time in construction and industry fields which are an unmanned ground vehicle. This robot is capable of performing multiple functions in the industry field, since it comprises a sensor and camera in it. It can easily move on working area and send us the video information about the floor with the help of camera attached to the sensor in the rover.

Keywords: Design, Sensing Robot, Industrial Applications

NDT from Deformed Nano Aluminium, Aluminium, Silicon Carbide and Magnesium Composites

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Abstract

This project is mainly based on the acoustic emission to find the defects on the specimens by testing radioactive waves. In this paper aluminium metal matrix composite is prepared using stir casting process with aluminium 6061 alloy as matrix metal and Silicon carbide as reinforcement with different proportions. Aluminium possesses excellent properties such as low density, good plasticity and ductility. Composite materials are important engineering materials due to their outstanding mechanical properties. Composites are materials in which the desirable properties of separate materials are combined by mechanically or metallurgical binding them together. After tensile testing the specimens are tested under Nondestructive test. Then it undergone to the nondestructive test like Radiographic test, Ultrasonic test and Penetration test.

Keywords: Metal matrix composite, Plasticity, Ductility, Ultrasonic test, Penetration test.

Dynamic Mechanical Analysis of Glass Fiber and Nylon Fiber with Epoxy Composites

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Abstract

Nowadays the strength of materials goes on decreases and the cost of these materials is also increased so in order to increase material strength and properties we choose the composite material. In this project we are perform Dynamic Mechanical Analysis on Glass fibre and nylon fibre with Epoxy Composites. Glass Fiber and Nylon Fiber layers are stick together with epoxy to make a sandwich and make the composite materials. Analysing the mechanical properties of composite materials is by using Dynamic Mechanical Analysis as per ASTM Standard. Composite materials are generally used for buildings, bridges, and structures such as boat hulls, swimming pool panels, racing car bodies, shower stalls, bathtubs, storage tanks, imitation granite and marble sinks and countertops.

Keywords: DMA, Glass fiber, Nylon fiber, Hybrid composites.

CFD Analysis of Different Shell Tubes in Heat Exchanger

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Abstract

The experimental investigation of heat transfer of water flowing in a rifled tube was explored at different pressures and at various operating conditions in a rifled tube heat exchanger. The specifications for the inner and outer diameters of the inner tube are 25.8 and 50.6 mm, respectively. The working fluids used in shell side and tube side are cold and hot water. The rifled tube was made of stainless steel with 4 ribs, 50.6 mm outer diameter, 0.775 mm rib height, 58° helix angle and the length 1500mm. The effect of pressure, wall heat flux and friction factor were discussed. The results confirm that even at low pressures the rifled tubes has an obvious enhancement in heat transfer compared with smooth tube. Results depicts that the Nusselt number increases with Reynolds number and the friction factor decreases with increase in Reynolds number and the heat transfer rate is higher for the rifled tube when compared to smooth tube, because of strong swirl flow due to centrifugal action. It also confirms that, the friction factor obtained from the rifled tube is significantly higher than that of smooth tube.

Keywords: CFD, Heat Exchanger, Shell tubes.

Analysing the Mechanical Properties of Nano Aluminium, Silicon Carbide, Magnesium and Aluminium Hybrid Composites

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Abstract

This project is mainly based on the improvement of the mechanical properties of aluminum by adding the additives of magnesium and Silicon carbide. Aluminum possesses excellent properties such as low density, good plasticity and ductility. Composite materials are important engineering materials due to their outstanding mechanical properties. Composites are materials in which the desirable properties of separate materials are combined by mechanically or metallurgical binding them together. The tensile testing the specimens are tested under Nondestructive test. Then it is tested by non-destructive test like Radiographic test, Ultrasonic test and magnetic particle test.

Keywords: Mechanical Properties, Nano Aluminum, Silicon Carbide, Magnesium, Aluminum.

Wear, Corrosion and Micro structural Behaviors of Al, Nano Graphite, B4c and Sic Hybrid Composites

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Abstract

Aluminum composites are one of the most widely used composites because of its light weight and weight to strength ratio. They possess important tribological properties and are used in manufacture of disc pads, break drums etc. Traditional life tests under normal operating condition would be a time-consuming process due to the longer expected life of the composite and hence accelerated wear testing, corrosion testing and micro-structural behavior was carried out to evaluate the life characteristics of the composite. This work focuses on evaluation of tribological performance of stir casted Al-B4C-SiC with nano graphite composite under accelerated wear testing methodology using a high temperature pin-on-disc tribometer. The dispersion of the reinforcement in the matrix of the composite and the microstructures were carried out using optical microstructure. Analysis on life characteristics were performed on the time-to-failure data using the temperature-non-thermal (T-NT) accelerated life-stress model and time to failure obtained from the accelerated wear testing was extrapolated to normal usage condition. The significant parameters affecting the performance were temperature and pressure.

Keywords: Wear, Corrosion, Al, Nano Graphite, B4c, SiC.

Performance Analysis of Bio Diesel from Karanja Oil and Rubber Seed Oil using CI Engines

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Abstract

As fossil fuel are depleting in the recent years due to modernization and industrialization we are in the need to find the alternative fuel for diesel engine. The research shows that the vegetable oil can be used directly as an alternative fuel for diesel engine. For prolonged use of vegetable oil directly in diesel engine causes engine choking. So the vegetable oil should not be used directly to the diesel engines due to its higher viscosity and higher free fatty acid content so by the transesterification process the free fatty acid content and the viscosity is reduced. As the mixed feedstock has higher free fatty acid content two stage catalytic transesterification is done as FFA is higher than 7% in the raw oil. In the present work for biodiesel extraction the process parameters such as oil/methanol ratio, H₂SO₄ or KOH, time and temperature were optimized using design of experiments. Reducing the acid value is the primary objective for process optimization in acid esterification process, whereas, maximizing the monoester yield is the objective for the alkaline-esterification process. The FFA of the mixed feedstock oil is reduced from 40.9 mg KOH/g to 2 mg KOH/g.

Keywords: Transesterification, Karanja Oil, Rubber Seed Oil.

Uninterrupted Location Tracking in Dead Spot Terrains using Smart Transportation Tracking and Management System

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Abstract

The intelligent vehicle technologies have been one of the most widely studied emerging technologies recently. Its backbone, the vehicular grid (V-grid), allows information sharing among vehicles with IOT components interconnected through a beacon that can receive signals (or data) from moving objects. These interconnected “things” in the V-grid constitutes the Internet of Vehicles (IOV). The IOV enables better traffic management, road safety services, quick emergency response and efficient logistics management. The Global Positioning System (GPS) is currently the most trusted technology to track a vehicle’s location. For real-time positioning, the GPS satellites receive data from a sensor, like a GSM module, inside the vehicle. Furthermore, this research paper aims to develop a Smart Transportation Tracking and Management System (STTMS) with uninterrupted location tracking of vehicles using IOV sensors and modules for real-time data collection and processing. STTMS aims to benefit vehicle drivers, transport companies, their customers and economic sector. The main goal of this research is to design, develop and implement a Smart Transportation Tracking and Management System (STTMS) using IOV technologies to enable uninterrupted transport route monitoring of delivery trucks in our country.

Keywords: Smart City, Smart Transport, Vehicular Network, IOV, GSM, Real-time Location Tracking.

Design of Multipurpose Agricultural Machine Fabrication

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Abstract

The majority of agricultural laborers in India do not have very good living conditions. The pay rates are pushed below the levels of subsistence as a result. In most parts of India, farming practices are still archaic. The majority of farmers still utilize their traditional plough and other implements. That being said, the issue is not a lack of contemporary machinery. The actual issue is that the current technology is larger and the cultivation units are too tiny to allow the usage of such machinery. We so believe that advanced technology may replace human and animal labor, and that this will be economically and labor-efficient for small-scale farmers. Therefore, we are creating equipment that will meet all of these objectives while also solving the labor shortage and being less bulky. With this equipment, we were able to operate the tilling and weeding with a 98 cc bike engine and the seeding with a 12V battery. Plow and leveling are the next two manual base procedures. This equipment is used in small-scale farming and can do five farming operations: plowing, tilling, weeding, sowing, and leveling. Utilizing the aforementioned attachments in a modular fashion allows one to complete different farming tasks more quickly and affordably.

Keywords: Machinery, Plow, Weeding, Sowing.

Design & Fabrication of Agriculture Equipment

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Abstract

Humans seek comfort, safety, and simplicity together. Our goal has been to make both happen. Our efforts have culminated in the creation of new "BIKE AGRO EQUIPMENT." The project offers a thorough and professional presentation of the subject, taking into account the current state of knowledge and learning capacities according to various levels. The gadget is easy to use and cozy. The project involves basic drawing, designing, and computation. The most notable aspects of our device are as follows: it requires no special skills to operate, and the mechanism is quite straightforward. To assemble a whole mechanical apparatus: To create a fully autonomous device that can perform several tasks such as weed eradication and plowing, the objective is to create a gadget that runs entirely without electricity.

Keywords: Gadget, Plowing, Computation.

Design and Analysis of Areca nut tree climber and harvesting machine

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Abstract

India's primary source of income is agriculture. In the globe, its agricultural output ranks second. Agriculture generates 50% of our nation's employment and contributes 10% of our GDP annually. Around 10.33 lakh tons of areca nuts were produced worldwide in 2009–10, covering an area of around 8.29 lakh hectares. The diameter of the bark on an areca nut tree ranges from 10 to 20 centimeters, making it a medium-sized tree. The diameter of the tree is greater at the base and less at the summit. That is, the tree's diameter gets less as it grows. Three or four harvests occur annually. Harvesting these calls for skilled labor, and trained labor is hard to come by. A device that runs on electricity and doesn't require any expertise to use was created in order to address this issue.

Keywords: GDP, Areca, Agricultural.

Design of Solar Distillation

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Abstract

After 20–25 years, there won't be much water on Earth that is safe to drink without being purified. Although this seems like a bold statement, it is regrettably accurate. Merely 1% of the water on Earth is fresh and liquid, and almost all of it is contaminated with harmful substances and diseases. Purification of water supply is crucial because of this. With these considerations in mind, we have developed a model that uses solar energy, a renewable energy source, to transform saline, unclean water into pure, potable water. Convection, conduction, and radiation are the three main ways that heat is transferred in this situation. By allowing the saline, unclean water to evaporate and extract the pure, drinkable water, the desired outcomes are achieved. In six hours, the developed machine turns 14 liters of unclean water into 1.5 liters of pure water. The plant's efficiency is 64.37%. Total Dissolved Solids (TDS) in clean water is 81 parts per million.

Keywords: Convection, Conduction, Radiation, Saline.

Design and Fabrication of Floor cleaning Machine

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Abstract

Cleaning floors in colleges, hospitals, airports, auditoriums, shopping centers, and workshops is the aim of this project. The project's goal is to design and build a machine that can clean both wet and dry floor surfaces. Both dry and wet floor cleaning can benefit greatly from its use. Our health depends greatly on keeping our floors clean, and this floor cleaning machine makes cleaning easier. For this reason, this initiative is quite helpful in today's world. The machine is really easy to operate and has a simple build, making it accessible to anyone. A DC motor, an AC to DC converter, a foam rolling brush, a foam wiper, and a sponge make up a floor cleaning machine. The main technologies and procedures are examined, and the dramatization and intelligence gaps that currently exist are outlined. By utilizing the advanced technological infrastructure of wealthy nations, we identify the root cause of the issue and suggest a course of action for India's automated and intelligent cleaning machinery development. This business endeavor oversees the design and production of floor cleaning machines. The goal of this project is to develop a wet and dry floor cleaning procedure that is more modern. It works on both dry and wet surfaces. Our first goal is to bring down the price of the existing machine that is on the market. Therefore, in comparison to the other machines, we have built a new machine that is offered at a very low cost. In comparison to other floor cleaning machines now on the market, our equipment uses a very low power source as its single input. It requires less upkeep and is simple to use.

Keywords: Foam, Wiper, Sponge.

Power Generation using Smart Speed Breakers

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Abstract

Designing a technique for producing energy without causing pollution is very important. The newest method to generate electricity with less input is the speed breaker power generator (SBPG). This report describes an experimental study to generate electricity through SBPG. The technology generates power through the use of a rack and pinion mechanism. Similar to solar technology, the rotating motion is transferred to a DC generator, which produces DC power that is stored in batteries. The produced electricity is available close to the speed breaker for both residential and business use. We can use the speed breaker as a power generating unit to harness the generated energy and produce power. The angular speed of the generator gear is found to be precisely related to the generated voltage. Additionally, it is discovered that, on a 12-hour basis, the total power produced by the translational induction generators is 8.2922 kW each day, compared to 691 kW by the rotating induction generators. Every day, more and more cars are going over the speed limit on the road.. To increase efficiency, there are numerous practical and small devices available. With just one push of a 65 kg weight, it produces roughly 43 watts of energy, which a generator can then convert into electric power and store in batteries. The experimental setup in this particular study gear was constructed using a rack and pinion system. Under static loading and using finite element analysis, the contact stresses of the rack and spur gear were examined.

Keywords: Rack, Speed breaker, Ratchet, Pinion.

Design and Fabrication of Mechanical Power Generation Systems using Footsteps

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Abstract

It is common knowledge that the population of our planet is always growing and that this trend will continue in the years to come. As a result, there is a greater need for electric power for residential, commercial, and industrial uses. At the moment, fossil fuels are the primary source of electricity production, but their supply is steadily running out. Furthermore, they still lack the quantitative and qualitative stability needed to be regarded as the primary energy source. An alternate technique for producing power utilizing human footstep was put out in this study. Using SolidWorks software, a new mechanical footstep power generation system was designed, constructed, and tested. This work included the stress-strain analysis and safety factor computations for the suggested product. An estimated 34 W were produced for each stage. Every crucial element attained a minimum safety factor of 2. Furthermore, SMART Technology was included into the product to enable the performance monitoring of the suggested system. This is also done in order to comply with the most recent international technology requirements.

Keywords: SolidWorks software, SMART Technology.

Design and Fabrication of Electric Power Generator, using the Road as a Clean Energy Source

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Abstract

The energy market has seen a significant elevated. There is not enough energy available from the sustainable energy sources that are available now. As such, fossil fuels continue to be extensively utilized in numerous nations. They are detrimental to the surroundings. Moreover, their sources are also worn out over time. As a result, it is necessary to investigate fresh renewable energy options to address this dilemma. As part of our project, we created a apparatus capable of producing electricity from the vehicle motion energy. We've just unveiled a new configuration for the MMR mechanical motion rectifier. It is demonstrated that a rack system that makes use of both the action of moving downward and upward to drive a pinion extend a generator's rotational duration by 89.2% in contrast to gadgets that make use of the downward motion alone. We've reached our maximum power output with masses varying from 6.268W to 7.596W. The weight range for the speed bump was 26 to 40 kg. As such, study provides helpful data that will support future research on comparable gadgets and clean generation of energy.

Keywords: Mechanical motor rectifier, Pinion, Fossil fuels.

Design, fabrication and operation of Fishing Gears

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Abstract

The purpose of the study was to record the development, manufacturing, and use of fishing gear along the coastal area. Along the four sites under study, thirty-three (33) distinct fishing gears were identified and recorded. The fishing equipment that has been recorded consists of eight nets, eight lines, five hand instruments, two (2) one (1) aggregating device, one (1) supplementary fishing device, and barriers and traps. Line and hook, several hooks, line, and troll line are the most often utilized fishing tools by fishermen along the four areas of study. Kitang (set bottom long line) fishing lines were the most costly, while the least expensive. The bakulkol (hook and line) was the manufacturing method used for fishing equipment. Fishermen from the coastal regions Payaws, or fish aggregating devices are used by the municipalities of Dinapigue and Palanan to boost tuna catch rates several lines and hooks.

Keywords: Fishing gears, Hooks.

Design and Fabrication of Emergency Braking System in automobiles

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Abstract

Because IC engines are so sophisticated, their speed can be disastrous. Cars with improved brake systems have better braking methods. Complete automotive braking systems are replaced, and the idea of an automatic braking system that offers a solution is covered. An ultrasonic transmitter, ultrasonic receiver, Arduino UNO R3 board with PIC microcontroller, DC gear motor, Servomotor, and mechanical brake arrangement are used in the construction of the project. A frequency signal (0.020–20) KHZ is produced by the ultrasonic sensor. An ultrasonic transmitter is used to transmit it. Vehicle wavelengths that have been pre-displayed are picked up by the ultrasonic receiver. The reflected waves are then supplied into the ultrasonic wave generating unit, where the incoming wave is amplified and compared to reference signals in order to keep the rate consistent. When a DC gear motor and/or servomotor are running on this signal, which is delivered to a microcontroller, brakes may need to be applied. The model was tested in accordance with the simulated circumstances and was intended to show expertise. Depending on its availability, a genuine model may be constructed in the future.

Keywords: Arduino UNO R3 board, PIC microcontroller, Ultrasonic transmitter.

Construction and Analysis of Mobile Toilet with a Bio-Toilet System

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Abstract

The proper disposal of human waste is a major issue in high elevation regions. Waste is gathered and applied to fields as fertilizer in non-glacier regions. It defines a biodigester toilet through the breakdown of human waste. Destroying and additionally, attempts have been made to treat human waste chemically for solving the issue. Nevertheless, none of these methods are hygienic or not very workable substitutes. A biological therapy is an appealing method for resolving the issues, but reduced microorganisms' metabolic processes.

Keywords: Biodigester, Metabolic processes.

Heat Transfer Enhancement Techniques: A Review

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Abstract

This paper embodies research that aims at advancing the state of the art in heat transfer enhancement, specifically heat transfer characteristics. The various industrial and commercial applications of heat exchangers are evaporators, boilers, condensers etc. Numerous heat transfer augmentation techniques have been introduced by researchers considering the different issues associated with heat transfer characteristics. The benefits of the different augmentation techniques is that it reduces the heat resistance in a traditional heat exchanger by endorsing increased convective heat transfer coefficient when the surface area increases. The persistent advancement in the area of heat transfer system is made in order to decrease the cost and size of industrial and commercial heat exchangers. An enhancement in the measurement of heat transfer coefficient is needed for the effective and efficient functioning of heat exchangers. The heat transfer characteristics are generally low for smooth tubes. The rifled tube has the ability to augment the heat transfer coefficient and has been getting attention from scholars. To enhance the heat transfer effectiveness of heat exchangers rifled tubes were developed.

Keywords: Heat Exchangers, Evaporators, Boilers, Condensers.

Blockchain Facilitated Secured E-Voting System

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Abstract

Being a democratic nation voting an immutable and secure voting system, powered by blockchain technology, provide a secure, transparent, and verifiable voting process. A platform that allows users to cast their votes with confidence, knowing their vote is safe and secure. This project discuss about the many flaws and issues in the current voting system. To overcome the issues an online voting system using blockchain is presented here. Online voting is a trend that is gaining momentum in modern society. It has great potential to decrease organizational costs and increase voter turnout. Voters can vote from wherever there is an Internet connection. Despite this benefit there may be a lot of vulnerabilities in online voting system. The transparency in this process is limited. A single vulnerability can lead to large-scale manipulations of votes. Blockchain technology came into the ground to overcome these issues and offers decentralized nodes for electronic voting and are used to produce electronic voting systems mainly because of their end-to-end verification advantages.

Keywords: Blockchain, Nodes, Internet.

Smart Attendance Management System for Educational Institutions

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Abstract

Due to the outbreak of the COVID-19 epidemic also known as Serious Acute Respiratory Syndrome Corona virus-2 is a contagious disease that occurs in a sick person. This spreads rapidly by close contact with anyone who is infected. Research studies use in-depth study techniques to distinguish facial recognition and to determine whether a person has followed the rules of covid, body temperature. The system develops real-time monitoring based on the Raspberry Pi as well as personal recognition, temperature and facial institutions have a strict code of conduct. The student must keep the percentage in attendance to complete the final examination. Naming each student's name and marking his or her presence are common. The problem with this method is it takes time to call each student. Another problem is the fact that the student may respond to a friend's call. The purpose of this is to provide a system of visual inspection and an effective method of identifying covid rules. In this work an open CV library is used to process a photo from a webcam and visualize a person's face in real time with an in-depth machine-based reading strategy called Conventional neutral network algorithm. Unattended learning algorithms include integration, confusing discovery, neural networks, etc.

Keywords: Covid, Raspberry Pi, Conventional neutral network algorithm.

Experimental Studies on the Interfacial Bond Formation of Bimetallic Composites Fabricated by Insert Molding Process

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Abstract

Metal Matrix Composites (MMCs) depending on aluminium is the principal element utilized by all industries in the material management specialization. Owing to their slight volume, Aluminum (Al), as well as Silicon Carbide (SiC), is favored in substantial investigatory aspects. Aluminum and Silicon Carbide alloy. For this analysis, bimetal composite materials from aluminium-silicon carbide (Al-SiC) have been developed through the process of insert molding. Fabrication processing variables including certain volume proportion with 2:1 (Al matrix: SiC insert) as well as insert temperatures of 725°C, 750°C, 775°C have been evaluated to enhance strong metallurgical interaction among SiC inserts and Al matrix. The maximum tensile strength produced via insert molding has been 217 MPa. The shear analysis also suggested that its crack formation in the weakest region of casted Al alloy initiated while performing the tensile loading of the bimetal composite. The findings obtained in this current study suggest that the insert molding fabrication is an effective and practical platform for the production of sophisticated bimetal SiC/Al7050 composite materials for broadening the implementations of aluminum alloys.

Keywords: Aluminum alloys, Metal Matrix Composites, Silicon Carbide alloy.

Experimental Investigation on Heat Transfer Characteristics of Potassium Nitrate for High Temperature Latent Heat Storage

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Abstract

This study presents the findings of material investigations on sodium nitrate (KNO₃), a phase change material (PCM) with a melting temperature of 334 °C. Long-term oven experiments were used to investigate the thermal stability. These tests included monitoring of nitrite production. Results reveal that despite some nitrite production being discovered in the melt, KNO₃'s thermal stability is suitable for PCM applications. Additionally, the compatibility of graphite foil with molten KNO₃ was investigated. The molten KNO₃ oxidizes graphite according to the results. Additionally, measurements of KNO₃'s thermos physical characteristics are provided. The density, heat capacity, diffusivity, and conductivity are determined by reliable temperature dependent thermo physical measurements. The findings indicate that the solid phase lacks reliable conductivity and diffusivity data

Keywords: Sodium nitrate, Phase change material, Heat flux.

CFD analysis of shell and tube heat exchanger for low temperature applications

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Abstract

For applications including chemical reactions, high pressure technologies, and oil refinery operations, a shell and tube device is used. While the cold fluid passes through the shell part, the heated fluid travels to the heat exchanger's tubes. As a result, heat is transferred from the heat exchanger's tube section to its shell section. The modeling and analysis of small shell and tube heat exchangers (MSTHE) for low temperature applications—those below 250°C—are the topics of this article. The nine tubes in the heat exchanger's design have a diameter of 6 mm, while the shell has a diameter of 41 mm. Since internal heat transfer is not produced by conventional design, the improved heat exchanger is designed using a computational fluid dynamics approach that takes pressure drop and tube fluid velocity into account. Pro/E is used for MSTHE modeling, whereas ANSYS is used for CFD analysis. The contour derived from the analysis demonstrates that MSTHEs have the potential to transport heat effectively and are appropriate for temperatures below 250°C.

Keywords: Heat exchangers, Refinery, Computational fluid dynamics.

A Review of Flat Plate Solar Collectors and Photovoltaic Systems Using Nanofluids

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Abstract

In this review, the evolution of thermal performance in flat plate solar collectors (FPSCs) is examined empirically and numerically. In general, when working temperature rises, photovoltaic (PV) module production decreases. As a result, several categorized and then thoroughly addressed in the current review. A higher overall performance can be obtained by using nanofluids in such collectors because of the enhanced thermal conductivity of suspended nanoparticles inside a base fluid. Research demonstrates the use of several nanofluids in FPSCs, including 24% alumina oxide, 12% multi-walled carbon nanotubes (MWCNT), 10% copper oxide, and others. Analyzing the data from both numerical and empirical investigations, it was found that using 0.2 weight percent of alumina oxide, 0.05 weight percent of copper oxide, and 1.0 weight percent of MWCNT, respectively, increased performances by about 29, 9, and 20–30%. Additionally, the investigation of heat transfer rates in plates is done while varying other parameters. Hence, in the studied systems, nanofluids are used to represent some discoveries and suggestions for future research. For the benefit of all parties involved in solar energy, the current review article offers a thorough overview of the most recent advancements, techniques, important economic factors, the importance of solar water heating, and the difficulties encountered in implementing such systems.

Keywords: Photovoltaic, Nanofluids, MWCNT, Alumina oxide, Copper oxide.

A Survey on Challenges in Energy Storage Techniques

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Abstract

The use of intermittent renewable energy is growing in popularity as long as there is a need to store both mobile and fixed energy. While there is no way to store electricity on any type of scale, it can be transformed into other forms of energy that can be stored and then converted back into electricity when needed. Batteries, supercapacitors, flywheels, thermal modules, compressed air, and hydro storage are a few examples of such energy storage devices. This survey article investigates a number of energy storage-related topics. Firstly, we outline the main challenges and objectives related to energy storage. Second, we go over a few energy storage options and the standards by which the best technology is chosen. We also discuss the existing problems and constraints with energy storage methods. Thirdly, we clarified the battery technologies that are most commonly employed in various energy storage applications. The types and applications of batteries are discussed, as well as their market shares and environmental and societal implications. A overview of current developments in cell-balancing techniques and battery state estimates is also included.

Keywords: Super capacitors, Investigates, Cell-balancing

Design and Fabrication of Multipurpose Agricultural Machine

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Abstract

India is an agricultural nation where 70% of the people depend on the output of agriculture. However, as the population grows, farms become more dispersed among families; as a result, Indian farmers often held just two acres of land. Additionally, farmers are extremely impoverished, which prevents them from affording tractors and other expensive equipment; as a result, they farm using ancient ways. In essence, a large number of Indian farmers also work with horses, buffaloes, and oxen. The energy requirements of agriculture in comparison to other nations will not be met by this. Therefore, we believe that advanced technology that is tailored to small farms from an effort and economic perspective can replace the labor of humans and animals. Therefore, we are creating this equipment to fulfill all of these requirements and find a solution to the job problem.

Keywords: Agriculture, Dispersed, Impoverished

Design and Fabrication of Automated Bed Control System for Patients

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Abstract

Worldwide, hospital beds are produced, and each country contributes special features and characteristics to the beds. Upon conducting study, we categorized hospital beds into two primary categories: intensive care unit beds and medical and surgical hospital beds. Every personality type has evolved a different method for raising the backrest. In order to create a high-quality bed, we have researched different hospital beds. Healthcare personnel typically have to manually manipulate hospital beds, which causes discomfort for both patients and staff. An automatic approach takes the place of the manual method to tackle the obstacle. Nowadays, a variety of bed lifting techniques are employed, including worm gear mechanisms with threaded joints, screw jacks, spring lifting, hydraulic systems, and more. A new swiping motion mechanism is included from our area of concept. An automatic bed control system, which includes a fixed frame and a mattress support with a head, center, and foot portion that are hinged and connected, is specifically designed for the treatment of patients in hospitals. The opposing ends of a lift arm are pivotally attached to the mattress support center portion and the frame, respectively.

Keywords: Intensive, Backrest, Manipulate, Swiping Motion, Treatment

Design and Fabrication of Solar Tracking System

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Abstract

In this project, a new micro-controller based solar-tracking system is proposed, implemented and tested. The scheme presented here can be operated as independent of the geographical location of the site of setting up. The system checks the position of the sun and controls the movement of a solar panel so that radiation of the sun comes normally to the surface of the solar panel. The developed-tracking system tracks the sun both in the azimuth as well as in the elevation plane.

Keywords: Solar-Tracking, Geographical, Radiation

Design and Fabrication of Solar Wireless Palm Tree Robot

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Abstract

The design and fabrication of a solar-based drainage cleaner is a project aimed at developing an eco-friendly solution for maintaining clean and free-flowing drainage systems. The proposed system utilizes solar energy to power a cleaning mechanism that is capable of removing debris and blockages from the drainage system. The system consists of a solar panel, a DC motor, a cleaning mechanism, and a control circuit. The cleaning mechanism is designed to be adjustable to fit different types of drainage systems, and the control circuit provides automatic operation and monitoring of the system. The use of solar power eliminates the need for external power sources and reduces the system's carbon footprint. This project offers a practical and sustainable solution for maintaining clean drainage systems, especially in areas where access to electricity is limited.

Keywords: Drainage, Blockages, Adjustable, Solar power, Eliminates

Design and Fabrication of Agricultural Equipment for Tendril Plants

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Abstract

In the next few decades, it is anticipated that emerging nations like India will continue to rely increasingly on hand tools for agriculture. India still uses many hand tools to cultivate its land since tractors and draft animals need resources that many Indian farmers cannot easily access. Therefore, a more profound comprehension of smallholder farmers operations must be considered when evaluating India's need for agriculture mechanization.

Keywords: Anticipated, Cultivate, Comprehension

Design and Fabrication of Bio-gas Discentration

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Abstract

There are two hostels for boys and girls at Stella Mary's College of Engineering, each having its own mess where a lot of cooking garbage is collected every day that can be used for better things. Anaerobic digestion is required to produce biogas. With the help of this project, an organic processing facility will be built to produce biogas, which will be more affordable, environmentally friendly, and produce high-quality renewable fuel while lowering carbon dioxide and methane emissions. Overall, it will be advantageous to build a biogas reactor on campus, in the backyard of the dorm mess. The boy's dorm at SMCE will provide kitchen (food) waste for the reactor, which functions as an anaerobic digester system to generate biogas electricity. This generates biogas energy and functions as an anaerobic digestion system. Biogas, a priceless energy source, is produced by the anaerobic decomposition of kitchen waste. Biogas is created by the microbial process of anaerobic digestion, which predominantly produces methane (CH₄) and carbon dioxide (CO₂). In addition to being used as a fuel, biogas has many other uses. However, understanding of the composition and quantity of elements in the generated biogas is necessary for any potential uses. Sodium hydroxide (NaOH) must be added to continuously fed digested biogas in order to keep the alkalinity and pH at 7. The reactor receives 60% of the biogas produced by the digester. Kitchen garbage may be used in this project to produce methane.

Keywords: Anaerobic, Biogas, Renewable, Methane, Alkalinity

Design and Analysis of Electro Magnetic Braking System

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Abstract

The aim of this project is to Design and Fabrication of Electromagnetic Braking System using IR switch. By means of this project we can avoid the accident of the vehicle. It also saves the life of the driver and passenger. The aim of this project is to design and develop a control system based on electronically controlled automatic vehicle stopping by IR switch.

Keywords: Electromagnetic, Braking, Accident, Control, Automatic

Design and Fabrication of Pyrolysis System for Biomass

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Abstract

Biomass pyrolysis is considered as a promising technology of producing valuable biochemicals. Now-a-days production of Bio-fuel is a prime concern in the world due to decrease other fuel source. A fixed bed pyrolysis system has been designed and fabricated for obtaining liquid fuel from biomass solid wastes. Biomass has some advantages in front of fossil fuels like low sulphur and nitrogen content and it is a way to produce energy without contributing to greenhouse effect. In this study, the design improvement was done in a reactor, shell and tube condenser for improved heat transfer and condensation of bio-oil vapour. The novelty of this work is development of improved condenser and reactor with movable setup.

Keywords: Bio-chemicals, Pyrolysis, Fabricated, Greenhouse, Energy

Design and Fabrication of Multipoint Seed and Plant Sower

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Abstract

Agriculture being one of the major occupations in India, Agriculture plays a vital role in the Indian economy. Multipurpose agriculture or farming machine is basic and major machine involved in agriculture for maximum yielding. We are developing this machine which will satisfy all this need and to solve labour problem. This will not satisfy need of energy requirement of the farming as compared to other countries in the world. It is unfortunate that, these ideas are not being implemented properly in actual field.

Keywords: Agriculture, farming, machine, Requirement, Problem

Design and Fabrication of Regenerative Braking System

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Abstract

Regenerative braking system is the system in which the kinetic energy of the vehicle is stored temporarily; during deceleration and is reused as kinetic energy. Regenerative braking is a step to reduce the use of fossil fuels. While braking, a large amount of energy is lost the form of heat. A regenerative braking system aims to utilize this energy instead of getting it wasted. Energy is recovered by using electric motors as generators in most regenerative braking systems.

Keywords: Regenerative, Vehicle, Braking

Design and Fabrication of Mechanical Robotic Arm

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Abstract

The primary objective of the robotic arm is to provide dexterous motion and efficient load handling. The two degrees of freedom allow for increased flexibility and improved reach ability in accomplishing tasks within its workspace. The arm can execute a wide range of movements, including reaching, lifting, rotating, and placing objects with high accuracy. The mechanical robotic arm finds applications in diverse industries, such as manufacturing, assembly lines, warehousing, and research laboratories. Its ability to handle various objects of different shapes, sizes, and weights makes it suitable for tasks like pick-and-place operations, sorting, packaging, and repetitive operations that require precision and consistency.

Keywords: Robotic, Motion, Flexibility, Accuracy, Warehousing

Design and Fabrication of Motorized Flywheel Operated Slotting Type Hydraulic Jack For Four Wheeler

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Abstract

This project work titled Fabrication of Motorized Flywheel Operated Slotting Type Hydraulic Jack for Four Wheeler has been conceived having studied the difficulty in lifting the any type of light vehicles. Our survey in the regard in several automobile garages, revealed the facts that mostly some difficult methods were adopted in lifting the vehicles for reconditioning. Now the project has mainly concentrated on this difficulty, and hence a suitable device has been designed. Such that the vehicle can be lifted from the floor land without application of any impact force. The fabrication part of it has been considered with almost case for its simplicity and economy, such that this can be accommodated as one of the essential tools on automobile garages.

Keywords: Slotting, Garages, Impact force

Design and Fabrication of Pulley Based Movable Crane

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Abstract

Here we put forward the design and fabrication of a motorized pulley-based crane robot. The system consists of a movable frame chassis which consists of a pulley mechanism using a shaft used to handle the rope. The pulley shaft is mounted in a frame to hold it in at 45 degree angular position for lifting. Also our system consists of motors mounted at bottom of vehicle to drive it in desired directions. Also it consists of another motor used to drive the rope pulley mechanism. The top motorized mechanism is used to drive the lifting logic while below motors are used to drive the vehicle. The vehicle frame and pulley frame are designed to support maximum weight in a small structure for demonstration of mini movable pulley robotic system.

Keywords: Motorized, Fabrication, Mechanism, Vehicle, structure

Design and Fabrication of a Flour Filtering Machine

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Abstract

The research presents improved design of a flour milling machine. It is a machine used for the milling of flour (dough) to a higher degree for food production without damaging the nutrients. In the construction of the design it is expected to use indigenous technology and to increase efficiency, minimize cost and maximize profit. The machine was designed to use the main drive shaft as means of speed reduction. It is very cheap to maintain. Idea to develop of flour filtering machine has come from the supervisor that gives a task and the title for this project. This project is focused on design and fabrication of machine part to achieve this project objective, this filtering machine body structure. This project flow has been started from the design, analysis, lastly fabrication process before developing the flour filtering machine. It must be compared with other products in the market it is because to study the customer needs and to create a new design with new features. To overcome the old method of flour filtering manually by simple meshing or by vibrating motion imparted to a simple mechanical part.

Keywords: Milling machine, Nutrients, Technology, Filtering, Structure

Performance and Emission Analysis of CI Engine Using Biodiesel from Neem Seed Oil

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Abstract

Biodiesel, an alternative fuel is derived from the fats of animals and plants. As energy demands increase and fossil fuels are limited, research is directed towards alternative renewable fuels. The main advantages of using this alternative fuel are its renewability, biodegradability and better quality of exhaust gases. It is technically competitive and environmentally friendly alternative to conventional petro-diesel fuel for use in Compression Ignition (CI) engines. The use of biodiesel reduces the dependence on imported fossil fuels which continue to decrease in availability and affordability. An experimental investigation has been carried out to evaluate the combustion, performance and emission characteristics of a diesel engine with the effect of using neem oil methyl ester and its diesel blends at different loads. The results showed that maximum cylinder pressure and maximum rate of heat release increased with the increase in bio diesel blends. The carbon monoxide (CO) and smoke emissions were found significantly lower when operating on biodiesel-diesel blends, but Nitrogen Oxide (NOx) emissions are found to be higher at full load.

Keywords: Milling machine, Nutrients, Technology, Filtering, Structure

Examining the Influence of Bends in Cryogenic Pipelines

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Abstract

Aerospace vehicles need to be lighter, stronger and more reliable. The elements of cryogenic engineering in space applications that accumulate maximum damage are known to represent pipeline system. Cryogenic Systems and plants use multiple cryogen transfer lines of many sizes and complexities to transfer fluids from plants to various applications. These transfer lines comprise many critical sections like tee section, elbows, other components etc. and they need to be designed for multiple constraints like line layout, support locations and space constraints. In this project work the influence of bends in cryogenic pipeline will be analyse under various configuration. Generally, a material expands when heated up and contracts when cooled. The shape, volume, and area of the material changes as the temperature fluctuate. The fluctuation of molecular positions will result in the changes. As temperature increases, the molecules' kinetic energy increases. This results in more molecular spacing. Hence, shape and size changes. The coefficient of thermal expansion is the fraction of the degree of expansion to the change in temperature. It describes the size change with temperature change. In major, the effect of contraction because of low temperature in cryogenic pipeline will be reduces with the presence of bends. Coupled structural analysis of cryogenic pipeline would be taken against various bend angles. The aim of piping stress analysis is to ensure safety against failure that could result from loading conditions both external and internal – that are expected to occur in the lifespan of a piping system.

Keywords: Cryogenic, Accumulate, Fluids, Analyze, Coefficient

Characterization and Thermal Behavior of Bamboo and Nylon Fiber Epoxy Composites

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Abstract

The use of composite materials in engineering field is increasing day by day. A composite material is a materials system composed of a combination of two or more micro or macro constituents that differ in form and chemical composition and which are essentially insoluble in each other. It consists of mainly two phases i.e. Matrix and fiber. The fibres may be polymers, ceramics, metals such as nylon, glass, graphite, Aluminum oxide, boron, Aluminium etc. Now a day's Jute, Coir, Silk, Banana, Bamboo fibres and animal feathers are also utilized as a fiber. In the present work, composites were prepared with bamboo and nylon fiber reinforced with epoxy resin. Most of studies show that the material used for component should possess better mechanical properties. The present research work is undertaken to investigate the Characterization and Thermal Behavior of bamboo and nylon fiber epoxy composites. The test pieces of different proportion are made and they are tested to find out the thermal properties.

Keywords: Composite, Chemical, Aluminum, Fibers, Proportion

Analysis of Corrosion Behavior of Mild Steel Coated with Ni-Cu for Marine Structure

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Abstract

Corrosion is a natural process, which converts a refined metal to more chemically-stable form, such as its oxide, hydroxide, and sulfide. It is the gradual destruction of materials usually metals by chemical or electrochemical reaction with their environment. Corrosion in metals occurs mainly due to air, water and other environmental aspects. The marine hull structure of mechanized metal boat gets corroded due to the sea water and atmospheric conditions. The marine hull structures are made up of mild steel with the thickness ranges from 6mm to 20mm depends upon the usage in marine applications. The mild steel easily gets corrodes, so the paint was coated above the mild steel to prevent corrosion. Even though within few months this paint reacts with seawater and starts corrode. This project reveals that the coating was carried out on the surface of the base metal with the Ni-Cu metal powder which has higher tensile strength and corrosion resistance in sea water and chemical environments. The Ni-Cu metal was synthesized using ball milling method and 40µm size was obtained. Plasma Spray technique is used to coat the surface. These specimens was cut according to ASTM standards by an EDM wire cutting to perform various hardness behaviors like Brinell, Rockwell, Vickers etc, corrosion behaviors like Salt Spray corrosion and General weight loss method (sea water, acids). The result reveals that Ni-Cu coating enhances the strength, corrosion resistance properties and improves the life span of the marine hull structures.

Keywords: Corrosion, Ni-Cu, Mild steel, Marine structure

Over Speed Monitoring in Two Wheelers by RF Sensor to Engine Power OFF for Road Safety

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Abstract

Nowadays people are driving very fast; accidents are occurring frequently, we lost our valuable life by making small mistake while driving (school zone, hills area, and highways). So in order to avoid such kind of accidents and to alert the drivers and to control their vehicle speed in such kind of places the highway department have placed the signboards. But sometimes it may not be possible to view that kind of signboards and there is chance for accident or driver doesn't slow the speed of their vehicles even after seeing the sign boards. Accidents are occurring frequently in highly traffic areas. Drivers drive vigorously without caring the traffic. Intimation of driver about speed and accident prone zone is necessary. It can be done by using automatic technology with the help of embedded system and sensors. This project is focused on “automatic speed control of vehicles” by detecting the accident-prone zone. The main objective is to design a Smart Display controller meant for Vehicle's speed control and monitors the zones, which can run on an embedded system.

Keywords: Over Speed Monitoring, RF Sensor, Road Safety

Structural Analysis on Automobile Truck Chassis with Various Cross Sections and Loading Condition

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Abstract

For commercial vehicles a rolling chassis consists of an assembly of all the essential parts of a truck to be ready for operation on the road. The design of a pleasure car chassis will be different than one for commercial vehicles because of the heavier loads and constant work use. The aim of the project is to analyse of chassis frame for improving its payload of I channel at maximum stress region of chassis frame. Chassis consists of an internal framework that supports a man-made object in its construction and use. This project analysed the backbone frame for static load condition with the stress deflection bending moment on the chassis frame. The finite element analysis over ansys is performed by considering the load cases and boundary conditions for the stress analysis of the chassis. The chassis is being modelled in PROE and then it is being imported in the finite element analysis software-ANSYS. Analysis will be carried out by changing the cross section of the frame. The necessary design changes required to enhance the load carrying capacity of the vehicle has been recommended successfully.

Keywords: Structural Analysis, Automobile Truck Chassis, Loading Condition

Flow Analysis and Uniformity Improvement in the Catalytic Convertor Using Computational Fluid Dynamics

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Abstract

This paper presents CFD analysis of a catalytic convertor. Environmental considerations have resulted in increasingly strict norms on vehicle emissions. To meet these demands, after-treatment systems have become a necessity in modern vehicles. The essential constituents of an after-treatment system are catalytic converters and filters. While these components reduce soot and harmful gases from the exhaust, they end up generating huge resistance to the flow of exhaust gases. This increases the EBP in the exhaust system. A higher EBP in the exhaust system requires more work to be done by the engine to expel the exhaust gases. It could also cause more exhaust to be mixed with fresh inlet air into the engine causing issues in the performance of the engine. It is therefore essential to design exhaust systems such that the pressure drop across the system is lower than the recommended limit for the engine and to increase the uniformity of flow inside the catalytic convertor.

Keywords: Flow Analysis. Catalytic Convertor, Computational Fluid Dynamics

Evaluation of Mechanical Behavior of Polyurethane and Polyester Composites

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Abstract

The polyurethane was used in the ropes which are mainly used for fishing. These ropes cannot be used after specific periodic time, it becomes a waste. The lifetime of this ropes are less 1 than year. By using this ropes along with polyester resins and glass fiber. A new composite was made by the methodology of moulding and it was tested as per the ASTM standards D3039, D526 and D790. Polyurethane is composed of organic units joined by carbamate links. Most polyurethanes are thermosetting plastics. Polyester is a category of polymers that contain the ester functional group in their main group. It is commonly refers to a type called polyethylene trephthalate.

Keywords: Mechanical Behavior, Polyurethane, Polyester Composites

NDT Analysis on Hybrid Metal Matrix Composite after Tensile Test

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Abstract

Ultrasonic methods are widely used in the non-destructive testing of all manner of welded joints. However, due to the practical difficulties involved in the NDT of incomplete or hot welds, much of this testing is undertaken after a joint is completed. Alternatively, if defects could be detected between weld runs and cast products, then potentially large cost savings would result from reduced wastage of materials and gouging/repair times. In addition, if the NDT results could be interpreted fast enough (e.g. by an automated system) then cast process control may also be possible. This short article describes some of the problems to be encountered when using Ultrasonic Testing, Radiography and Liquid Penetrant Testing. As an alternative, Time of Flight Diffraction methods are proposed and image processing techniques for automatic defect detection are described.

Keywords: NDT analysis, hybrid metal matrix, tensile test

Performance and Emission Analysis of CI Engine Using Biodiesel with Oxidation Inhibitor

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Abstract

This experimental study focuses on investigation of performance, emission and combustion characteristics of a standard diesel engine fueled with pongamiamethyl ester. Researches revealed that usage of biodiesel leads to increased emission of nitrogen oxide because of its oxidation capability. So this study aims to reduce the emission of nitrogen oxide by adding an oxidation inhibitor tertButylhydroquinone (TBHQ). The analysis of performance and emission and combustion characteristics for each sample is to be carried out in compression ignition engine (standard diesel engine). The engine is tested with standard diesel, pongamia methyl ester biodiesel without any additives. Then the analysis is to be carried by adding nano additive copper oxide for about 50 ppm in the above mentioned fuels. From this the best combination is found out and test is again carried out by adding the oxidation inhibitor. Performance parameter includes Brake thermal efficiency and brake specific fuel consumption and emission characteristic includes the emission of Hydrocarbon (HC), Carbon monoxide (CO), and nitrogen oxide (NOx).

Keywords: CI Engine, performance, emission, bio-diesel

Implementation of Hydraulic System for Increasing Efficiency in Jigger and Jolly in Pottery Industry

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Abstract

Pottery is the ceramic material which makes up pottery wares of which major types includes earthenware, stoneware and porcelain. Pottery making is the oldest technology and this field was down due to people switch over to aluminum & plastics. Now due to health consciousness people are again changing into pottery vessels. In this project we have selected pottery industry “Center for Social Development”, Thalakulam, Kanyakumari dist. Main objective of this project is to study the various steps involved in pottery making and energy consumption during this process. After studying to improve the production rate and reduce the energy consumption and man power we introduced mechanical linkages and hydraulic system in jigger and jolly.

Keywords: Hydraulic System, Jigger and Jolly, Pottery Industry

Design and Fabrication of a Wireless Palm Tree Robot Powered by Solar Energy

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Abstract

An inventive use of robotics and renewable energy can be seen in the design and construction of a solar-powered wireless palm tree robot. The purpose of this project is to design a visually beautiful robot that imitates the swaying motion of a palm tree and runs on solar power and wireless control. By including a solar panel, the robot is able to capture solar energy and transform it into electrical energy, decreasing its dependency on conventional power sources and fostering sustainability. Using a smart phone or other Bluetooth-capable devices, users may control and observe the motions of the robot wirelessly thanks to Bluetooth technology. In order to produce precise and lifelike motion, this work uses cutting-edge technology like gear motors, Arduino microcontrollers, motor drivers, and Bluetooth modules. The project work's adaptability makes it suitable for use in environmental education, exhibitions, gardening, entertainment, and marketing. Overall, the development of a solar wireless palm tree robot project demonstrates how renewable energy and robotics can be used to build engaging, green systems.

Keywords: Wireless Palm Tree Robot, solar energy, design, fabrication

Design and Fabrication of Tomato Seed Extraction Machine

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Abstract

Tomato seed extraction equipment was created, manufactured locally, and assessed. Based on factors like seed loss, extraction efficiency, cleaning efficiency, and energy needs, the developed extraction machine's performance was assessed. The evaluation was computed under various operating conditions, such as varying input rates from 6 to 240 kg/h, extraction unit inclination angles from 0 to 12 degrees, and crushing/separation speeds from 1.31 to 3.66 m/s. The results obtained indicated that: It was found that altering the crushing/separating drum speed by more or less than 2.88 m/s and the extraction machine's inclination angle by more or less than 8 deg would result in a rise in seed losses, which would then lower the efficiency of both seed extraction and cleaning at all feeding rate sat feeding rates of 60, 120, 180, and 240 kg/h, respectively, the variable combinations of 2.88 m/s crushing/separating drum speed and 8 deg inclination angle. At a feed rate of 60 kg/h and an inclination angle of 8 degrees, increasing the crushing/separating drum speed from 1.31 to 3.66 m/s reduced the amount of energy used per ton from 11.04 to 16.90 kWh. The cost of extraction was able to be reduced by over 37% by using the specially developed tomato seed extraction machine.

Keywords: design, fabrication, tomato seed extractor

Design and Fabrication of a Simple Pedal Operated Cassava Grater Suitable for Rural Dwellers

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Abstract

The majority of food crops grown in Nigeria are grown by farmers in rural areas lacking access to electricity, fuel (diesel) for engines, and equipment for processing agricultural produce. As a result, agricultural produce is typically lost on the farm both before and after harvest. The purpose of this project was to create a basic pedal-operated cassava grater for people who live in rural areas. Locally accessible materials, primarily hardwood, were used to mild steel iron rod for the shaft, three roller bearings, driven and driver pulleys, belt, bicycle pedal, and a 2 mm thick galvanized sheet for the grating surface. The grater is portable and has dimensions of 540 mm in width, 1200 mm in length, and 1050 mm in height. The grating chamber measured 420 by 440 mm at the top, where the cassava is fed into the grater, and 220 by 440 mm at the bottom, where the cassava is crushed into g efficiency were 103.7 kg/h and 90.91%, respectively. In rural areas without access to power or gasoline, cassava tubers could be grated with a cassava grater.

Keywords: design, fabrication, Simple Pedal Operated Cassava Grater, Rural Dwellers

Design and Fabrication of Tri-Cylinder Air Compressor

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Abstract

This project's research has been done on tri-cylinder air compressors, which can produce 40–50 PSI of air pressure in storage tanks. The eccentric mechanism reciprocates each cylinder mounted over the frame at a 120° angle, producing compressed air. The D.C. motor provides the mechanical power input needed to operate the compressed air production assembly. With the aid of hoses and connectors, the output of each cylinder is connected to the storage tank. According to the results of an experiment conducted for this project, it takes less time to generate a certain amount of pressure the more cylinders there are. A longer cylinder stroke length allows the compressor to operate at maximum capacity. This arrangement has the advantages of being lightweight, portable, and simple to make. Batteries make it simple to generate D.C. power, and once it's finished, compressed air can be utilized for low pressure industrial tasks like painting, cleaning, and fumigation.

Keywords: design, fabrication, tri-cylinder air compressor

Design and Fabrication of Pneumatic Suspension System in Two Wheelers

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Abstract

The suspension system plays a major role in every automobile to maintain comfort, vehicle position and ride quality. The commercial vehicles nowadays use helical coil type suspension system in two wheelers. This type of suspension system provides only low solace to the riders. The replacement of coil type suspension with an air suspension system in two-wheeler will provide better solace and maintain the ride height and ride quality. Considering the suspension system, air suspension is way better than the coil type suspension system. So we are going to use air suspension system in our project for the two wheelers will provide better solace to the riders. By using the compressor, the compressed air is made to pass into the rubber tube which serves as a better suspension system.

Keywords: design, fabrication, Pneumatic Suspension System, two sheeler

Design and Fabrication of Solar Dryer System for Food Preservation of Vegetables and Fruits

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Abstract

For thousands of years, people have preserved a variety of items, such as fruits, vegetables, meat, cereals, and grains, in various parts of the world. Canning, freezing, pickling, curing (soak or salt), and drying are methods of food preservation. As a result of moisture-induced food spoiling, mold, yeast, bacteria, and enzymes proliferate within the food. Food that has been dried enough loses moisture through the procedure so the possibility of these negative effects from humidity levels is greatly decreased. The amount of moisture in the material is determined by its composition. Depending on the kind of food eaten, fresh food might have moisture content of anywhere from 20 to 90 percent. When food has been completely dried out before being chopped, there won't be any indicator of moisture present. We developed a mathematical model based on the experimental analysis conducted in this work to ascertain the most crucial parameter in the solar dryer design. Under load and overload scenarios. Conditions such as the distance between the absorber plate and glass and the effect of hole size have been simulated for a solar dryer system. The ideal hole dimensions and distance between the absorber plate and glass are established.

Keywords: design, fabrication, solar dryer system, food preservation, vegetables, fruits

Design and Fabrication of Materials with Desired Deformation Behavior

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Abstract

In order to develop and fabricate materials with desired deformation behavior, a data-driven process is presented in this study. The first step in our method is to measure the underlying material's deformation properties. We obtain a collection of representative deformations for every base material, and we use a finite-element model to represent the material as a non-linear stress-strain relationship. By comparing observed deformations of produced material stacks with simulations of random stacks of base materials, we have validated our material measurement process. Our technique involves designing stacked layers of base materials after material measurement. Using example deformations, we present an optimization procedure that discovers the optimal set of stacked layers that satisfies user requirements. Several techniques are used by our method to eliminate subpar solutions from the combinatorial search space. We use contemporary multi-material 3D printers to design and create items using complicated heterogeneous materials in order to illustrate the entire process.

Keywords: Design, Fabrication, Materials, Deformation Behavior

Design and Fabrication of Combination Fixture for Reducing Production Time in Pump Manufacturing Industries

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Abstract

For executing machining operations such as milling, drilling, and tapping on the components such as the front cover, rear cover, suction bracket, and casing, three fixtures are often utilized in the pump manufacturing industry. They cause the loading, setting, machining, and unloading times to rise. In the current work, the three fixtures are replaced by a single fixture in order to greatly minimize the manufacturing time. The SOLID WORKS program was used in the design of the new fixture and its supporting plates. With the use of this fixture, manufacturing rate is greatly increased and overall production time is decreased to 78.6%.

Keywords: Design, Fabrication, Combination fixture, reducing production time

Design And Fabrication of Miniature Combination Lock

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Abstract

Design and fabrication of a miniature combination lock is reported. The prototype's outline size is less than 15mmx20mmx25mm, with the function of 24 steps single-try discrimination. Two miniature application-specific electromagnetic motors are used to drive a counter meshing gears (CMG) mechanism. Ratchet-pawl mechanism is respectively attached to each CMG gears assembly, to insure it step forward at accurate angles in company with motor driving circuit. Main functional components of the lock are fabricated by UV-LIGA micromachining process, including the motor's stator with 4-level planar coils. Handcraft assembling process and control circuit design are also briefly introduced. The prototype had already endured more than 1000 times of unlocking and 100 times of manually unlocking. It is proved that micro-motor and micromachining technologies are very useful in miniaturization of such a surety device.

Keywords: Design, Fabrication, Miniature combination block

Design And Fabrication of Very-Low-Cost Engineering Experiments Via 3-D Printing and Vacuum Forming

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Abstract

A novel method for creating inexpensive, adaptable experiments that provide undergraduate students with practical experience with engineering principles has been devised. The method, which is based on design for production, creates a variety of straightforward and user-friendly experimental hardware by utilizing new manufacturing technologies like computer-aided design, 3-D printers, and vacuum forming machines. Four generations of experimental hardware evolution are documented to show the design and fabrication process. Two fluid mechanics-related topics have inspired the development of experimental hardware: a pipe flow experiment that emphasizes mass and energy conservation and a venturi nozzle experiment that demonstrates the application of the Bernoulli equation. Those who participated in the experiment, however, did not score any higher on questions about fluid velocity than those who watched the lecture. The efficiency of the educational interventions to promote a full cycle of experiential learning including the targeted engineering concept—a critical component of the experimental hardware design—appears to be the cause of these diverse learning outcomes.

Keywords: design, fabrication, low-cost engineering experiments, 3D printing, vacuum forming

Design, Fabrication and Applications of Soft Network Materials

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Abstract

The well-organized micro-architectures of soft network materials, an emerging class of cellular materials, are modeled after the network microstructures seen in a variety of soft biological tissues.. These fascinating characteristics have made it possible for a number of exciting applications in cutting-edge technology, including regenerative medicine and bio-integrated electronics. The most recent developments in the design and production of soft network materials are outlined in this overview, along with some examples of their representative uses in tissue engineering, biomedical devices, and other fields. It focuses on the basic ideas, design concepts, and manufacturing methods of soft network materials, which are made up of microstructures that are dispersed either randomly or periodically. These soft network materials' rational designs produce tailored mechanical properties that are comparable to, or even better than, those of soft biological tissues. Lastly, viewpoints on the unfinished business and available opportunities are given.

Keywords: design, fabrication, applications, soft network materials

Design and Fabrication of Paper-Based Electronic Interfaces for the Water Environment

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Abstract

Underwater device manufacture is a prerequisite for investigating aquatic environments and interactions within the Human-Computer Interaction (HCI) domain. Nevertheless, there aren't as many methods for prototyping support in aquatic situations. The current prototype techniques offer inadequate software for balancing and buoyancy analyses as well as a lack of comprehensive waterproof treatments. We introduce ElectroPaper, a novel method for designing and creating paper-based electronic interface prototypes that can be used in water environments (above or below). It has a crease layer, a hardware distribution layer, and a hollow-out layer to support physical properties like waterproofing, foldability, and conformability. This approach aims to overcome these limitations. A computational design tool is included in the method to help with circuit drawing, three-dimensional (3D) model unfolding, and balance analysis. We outline the process of design and fabrication and offer multiple examples of applications to demonstrate the practicality and efficacy of our methodology. An efficient and reasonably priced method for creating personalized digital prototypes for usage in the aquatic environment is ElectroPaper.

Keywords: design, fabrication, paper based electronics interfaces, water environment

Lean Implementation in TCL Cell

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Abstract

This project deals about the lean production system where the method study of seven CNC machines of a cell is done and analyzed to find out the Non Value-Added activities (NVA's) time consumption. The required steps are then taken to reduce those time consuming activities. The main objectives of this project are to reduce the Non Value Added activities (NVA's) by rearranging the CNC machines through the method of Value Stream Mapping (VSM).Through this VSM method we have performed different combination of operation to find the suitable one for the best output. Results obtained from the VSM method is applied in the TCL cell and according to that we have re-arranged the CNC machines.

Keywords: Lean, Implementation, TCL Cell

Experimental Investigation on Water Treatment using Cascade Filter

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Abstract

Water is a very important natural resource which is very important for our day to day life. Our present study is the removal of iron (Fe) and manganese (Mn) using aeration system for groundwater. This study presents the usage of waste materials (ashes and non ashes) to treat the turbid water for safe drinking for reuse. The properties of the water sample is tested for both physical and chemical properties like pH, turbidity, TDS, TSS, Electrical Conductivity, and total solids are estimated by suitable laboratory procedures. Turbidity is measure by intensity of light scattered by the water sample. They give an undesirable taste and odour. Use of natural products to reduce turbidity in water sample is a technique that has been repeated from many years and the material used are safe and effective, like Cause Nut Shell and very fine Sand (300 Micron). Also, the effect of flow rate on the still productivity is investigated during five sunny days. The results show that the maximum productivity is obtained in the lowest possible flow rate.

Keywords: Experimental Investigation, Water Treatment, Cascade Filter

Experimental Investigation on Effect of Partial Replacement of Marine Fouling in Concrete as Fine Aggregate

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Abstract

River sand is most common fine aggregate used in concrete. Due to excessive need of river sand, several materials are used as fine aggregate. Number of research works is done in various materials for example waste glass powder, crumb rubber powder, biogases ash, walnut shell powder and etc. Marine fouling is available in our environment abundantly, which is produced from rock, under ships and boats. It is also a waste material and recycled as construction materials. Therefore it is essential that a useful method of utilization of this grab waste should be found. This study focus the optimization of marine fouling to fine aggregate mix proportion and suitability of marine fouling as a fine aggregate replacing material to minimize the degradation of environment due to fine aggregate demand. Marine fouling has wet ability, super hydrophobic surface. The marine fouling of concrete used for the investigation is under the grade of M20. Density of marine fouling is 1325Kg/m³. Workability properties and Mechanical properties like compressive strength investigated by replacing the fine aggregate with marine fouling in the ratio of 2%, 4% and 6% by weight of fine aggregate.

Keywords: experimental, partial replacement, marine fouling, concrete-fine aggregate

Study on Effect of Replacing 100% Natural Coarse aggregate with Recycled Concrete Aggregate in Concrete

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Abstract

Demolition of old structural concrete solid elements is quite common practice nowadays. This type of task generates a ton of concrete debris. Reuse of this solid structural concrete elements received from demolition activity is an important and also challenging task (Nagaraja B et. al, 2017). The suitability of replacing Recycled Concrete Aggregates (RCA) in Parent Concrete (PC) is assessed in this report. The main aim of this present research work has been performed to access the impact of RCA on the mechanical strength characteristics of Recycled Aggregate Concrete (RAC). Initially, PC with strength grade of M40 was prepared without RCA (Shi-cong Kou et. al., 2015). For the findings of effect of RCA in concrete, One concrete mixes were prepared with 100% of RCA replacement. From this 100% replacement value of RCA, silica fume (SF) was added in 0%, 5%, 10%, 15% and 20%. At the initial stage, the workability test was performed for all the mixes. The experimental result shows that the output of RAC varied greatly, and good quality RCA can be used to manufacture good quality concrete with acceptable hardened properties comparable to natural aggregate concrete (NAC) (Zhen HuaDuan et. al., 2014).

Keywords: replacement of 100% Natural Coarse aggregate, Recycled Concrete Aggregate, study

Design and Fabrication of Hydraulic Press

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Abstract

The Hydraulic drive system is a quasi-hydrostatic drive or transmission system that uses pressurized hydraulic fluid to power hydraulic machinery. The term hydrostatic refers to the transfer of energy from pressure differences, not from the kinetic energy of the flow. A hydraulic drive system consists of three parts: The generator (e.g., a hydraulic pump), driven by an electric motor or a combustion engine, or a windmill; valves, filters, piping etc. (to guide and control the system); and the actuator (e.g., a hydraulic motor or hydraulic cylinder) to drive the machinery. Pascal's law is the basis of hydraulic drive systems. As the pressure in the system is the same, the force that the fluid gives to the surroundings is therefore equal to pressure area. In such a way, a small piston feels a small force and a large piston feels a large force. The same principle applies for a hydraulic pump with a small swept volume that asks for a small torque, combined with a hydraulic motor with a large swept volume that gives a large torque. In such a way a transmission with a certain ratio can be built. Most hydraulic drive systems make use of hydraulic cylinders. Here the same principle is used-a small torque can be transmitted into a large force.

Keywords: quasi-hydrostatic, hydraulic drive system, hydraulic press

Development of Soft Robotics for Medical Applications

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Abstract

The development of soft robotics for medical applications presents a multifaceted set of obstacles. One critical challenge is ensuring the biocompatibility and safety of soft materials within the human body to prevent adverse reactions. Achieving precise control and dexterity with these robots is another hurdle, demanding the creation of reliable control algorithms and systems. Developing soft robotics for medical applications are a complex. Additionally, miniaturizing soft robotics for confined spaces or microsurgery applications, establishing accurate sensing and feedback mechanisms, managing development costs, navigating stringent regulatory approval processes, and addressing ethical and privacy concerns further complicate this multifaceted endeavor. Overcoming these obstacles demands interdisciplinary collaboration, inventive design solutions, and a thorough understanding of both mechanical engineering and the unique demands of the medical field.

Keywords: development, soft robotics, medical applications

Development of Sustainable Transportation Solutions using Hydrogen Fuel Cells

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Abstract

Developing sustainable transportation solutions using hydrogen fuel cells presents a multifaceted array of challenges. Firstly, the production of hydrogen in a sustainable and cost-effective manner, as well as finding safe methods for its storage and transportation, remains a significant hurdle. Building the necessary infrastructure for hydrogen refueling stations is a formidable undertaking that demands substantial investment. Safety concerns regarding the highly flammable nature of hydrogen must be addressed rigorously. Moreover, hydrogen's lower energy density compared to traditional fuels poses challenges in achieving sufficient vehicle range. Navigating regulatory approvals and ensuring compliance with safety and environmental standards adds complexity. Convincing consumers to adopt hydrogen-powered vehicles and addressing infrastructure availability concerns is essential for market acceptance. Careful consideration of the environmental impact of hydrogen production methods is imperative for sustainability. Lastly, hydrogen fuel cell vehicles face competition from well-established battery electric vehicles in the market. Addressing these obstacles demands a concerted effort involving interdisciplinary collaboration, technological advancements, and policy support to make sustainable transportation with hydrogen fuel cells a practical reality.

Keywords: development, sustainable transportation solution, hydrogen fuel cells

Development of Autonomous Agricultural Robots for Precision Farming

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Abstract

The development of autonomous agricultural robots for precision farming encounters a range of formidable obstacles. These robots must operate effectively in dynamic, unstructured environments, demanding robust navigation systems capable of adapting to variable conditions such as changing weather and uneven terrain. Additionally, ensuring a stable and efficient power supply for robots operating remotely for extended periods is a significant concern. The management of extensive data generated by sensors and cameras on these robots presents challenges in terms of data processing, storage, and meaningful analysis. Privacy concerns regarding farm-related data collection must also be addressed. Cost-effectiveness is a significant hurdle, as the development and deployment of autonomous agricultural robots can be costly, potentially limiting accessibility for smaller farms. Navigating agricultural regulations and standards further complicates the landscape. Ultimately, gaining farmer trust and acceptance of autonomous robots hinges on demonstrating their tangible benefits, such as increased crop yields, resource efficiency, and improved profitability. Agronomists and policymakers is essential to drive progress in autonomous agricultural robots for precision farming, revolutionizing modern agriculture practices.

Keywords: development, autonomous agricultural robot, precision farming

Front Wheel Steering System with Movable Head Light

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Abstract

Front wheel Steering system with movable headlights with latest technology. The most conventional steering arrangement is to turn the front wheels using a hand-operated steering wheel which is positioned in front of the driver, via the steering column, which may contain universal joints to allow it to deviate somewhat from a straight line. Conventional headlights and auxiliary lights are generally fixed at a certain angle to the front of a car body for lighting up the area in front of the car. Therefore, upon turning the wheel to change the direction of travel of the car, the front-wheel forms an angle corresponding to the angle at which the steering wheel was turned in relation to the direction of travel of the car. Thus, the car body moves in a direction which is not being illuminated by the headlights and therefore poses a danger because it is turned into a dark area. More specifically, the movable car headlight device of the present invention comprises a perpendicular main axis fixed to a bracket mounted on an appropriate part of the car body; a receiving table through which the main axis passes; a rotating body with balance weights on either side attached to the main axis the body rotatable resting on the receiving table; and a casing with a lamp at its rear part rotatable supported at the upper end of the main axis.

Keywords: Front Wheel Steering System, Movable Head Light

Design and Fabrication of Revolving Gate Power Generation System

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Abstract

The revolving gate is mounted on the shaft. The gear arrangements mounted on the bottom of the shaft to increase the speed. A dynamo is fitted to the driven gear. The dynamo converts the mechanical energy of the system into electrical energy. The rectifier converts A.C. to D.C. The rectified voltage is given to the filter circuit to remove the ripple voltage. After filtration pure D.C. voltage is given to the battery through the charging circuit. The stored D.C. is used for different applications. Through this way electric energy is generated and electrical demands may be compensated. It is applicable in houses, hotels, shopping complex. The advantages of the system are It is simple in design, it is reliable and maintenance cost is less.

Keywords: revolving gate, power generation, A.C, D.C

Structural Investigation and HOMO-LUMO Analysis Of Theophylline (A Bronchodilator Drug) Through Picrate Salt

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Abstract

Crystallization of an active pharmaceutical ingredient (API) with pharmaceutically acceptable molecule strives to improve the physical properties of pharmaceutical products. Theophylline is considered to be the first line drug used in the treatment of asthma. Theophylline Picrate (THPI) has been successfully crystallized. The arrangement of THPI molecules resembles layers, and Density Functional Theory (DFT) was utilized to optimize its geometry. Within the structure, dimers are present, and chains align in a zigzag pattern along the crystallographic a-axis, parallel to planes indexed as (1 0 -3) and (-1 0 3). The monoclinic crystal structure, characterized by space group P2₁/n, underscores its stability, attributed to intricate hydrogen bonding networks involving N-H...O and C-H...O interactions. Also HOMO-LUMO analysis of the compound was investigated. It is high for hard molecules and is small for soft molecules. A small HOMO-LUMO energy gap automatically means small excitation energies to the manifold of excited states. This multidimensional investigation highlights the robust stability and intricate molecular interactions within THPI, making it a promising candidate for diverse applications in chemistry, materials science, and beyond.

Keywords: Structural investigation, HOMO-LUMO analysis, Theophylline, picrate salt

Landscapes in Romesh Gunsekera’s Novels

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Abstract

Literature is a self-contained entity, and categorize the social, historical, and cultural background of the different periods or ages, it’s a kind of catharsis which purifies the mind of the readers and relieve them from the pressure of emotions. Gunsekera's books feature his conviction that the changing scene of Sri Lanka mirrors the impact of human societies. Since the 1970s, numerous social geographers have considered culture-nature relations, and subsequently, scene. land and its assets among various ethnic gatherings, the military, and patriots and the liberationists Gunsekera's way of seeing and feeling of chapter is that of a basic and socially cognizant outsider—of an expatriate—who wants to annual the progressions in the scene made by friendly and political conditions and to legitimize his choice never to get back to his origin. Gunsekera’s idea of Sri Lanka, therefore, would perhaps not match an insider’s (someone who has lived there and has come to understand the landscape) opinion of Sri Lanka. Romesh Gunsekera’s work deals with issues of home, the migrant experience, and their connection with time, nostalgia and loss. He is concerned in the disjuncture’s, firmnesss and conflations of the past with the present, mainly as it relates to Sri Lanka and the encounters post decolonization. Ethnicity and Culture is the fulcrum around which Romesh Gunsekera’s narratives move.

Keywords: Landscapes, Romesh Gunsekera’s Novels, Literature

Design and Fabrication of Electrical Power Generation from Revolving Door

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Abstract

Menial world requires a lot of energy in different phases to run their livelihood. So this factotum describes the conversion of muscular energy into mechanical energy which can be again converted into useful electrical energy. The renewable energy and some unconventional source of energy also provide reinvigorate economy for climate stabilization and reduce the consumption of fossil fuel. The main goal of this project is to design & fabricate a miniature revolving door which can generate energy by amplifying the initial RPM of door shaft that harnesses human motion and change it as electricity

Keywords-: Energy, Conversion, Stabilization

Implementation of KY Converter in a Grid Tied Solar PV Inverter

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Abstract

As a next-generation energy source that can address the problems of global warming and energy exhaustion brought on by growing energy use, photovoltaic (PV) energy has recently grown in favors. The solar cell can lower maintenance and management expenses and has a lifespan of more than 20 years. There are no mechanical vibrations or noises because the components of power generation based on PV energy employ semiconductors. An unconventional source of energy is solar energy. Only a small amount of the solar energy that is accessible is actually consumed. In this paper, a grid-tied solar PV inverter would use a KY converter. So that an effective DC-DC KY converter and a PI controller with Elephant Herding Optimization (EHO) based Fuzzy Logic Control are recommended. The inverter receives voltage from the solar system using the KY converter. One phase VSI, which changes the DC voltage to AC voltage, feeds the converter's output into the grid. DSPIC30F4011 Controller is the hardware used to control the voltage and the output of the inverter is increased using the LC filter

Keywords: DC-DC KY Converter, PI Controller, Fuzzy logic control

A Unique Machine Learning Approach for the Design and Performance of Intelligent Covid-19 Attendance Devices

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Abstract

For students' academic success, attendance is extremely crucial. The dedication to their academics is evident from this. The majority of educational institutions still mark students' attendance manually. The issue with this approach is that calling each and every student takes time. Authentication is another issue because a student might respond on his friend's behalf during roll call. Therefore, intelligent attendance marking systems must be used in place of conventional attendance marking. In order to ensure that attendance is reliably recorded and to decrease the COVID-19 spread, this study presents a system in which a facial recognition component is integrated into the attendance monitoring system. The research ensures that facial recognition and temperature are both used for efficient attendance control.

Keywords: COVID-19, intelligent attendance, facial recognition component, attendance monitoring system..

IOT Based Fire Detection System With Remote Alert Switching

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Abstract

Fire poses a significant threat to life due to its serious hazards and ability to spread rapidly. Fire poses a huge threat to human life. Fire detection systems, especially vision-based systems, identify flames before they are lost or destroyed. In this model, a new vision-based technology is created that uses a camera to detect flames (the visible part of a fire) at long distances. An instant notification is generated in the Android app. The goal of the proposed system is to alert a remote user when a fire occurs. This system can be installed in any remote area where there is a risk of fire. Using this system, we can detect fire using a fire sensor next to the camera. After the fire is detected, the camera is used to take a fire photo and goes to the microcontroller. Using the camera method, a report is automatically generated and delivered to the person immediately after a fire is detected in any part of the scene using Wi-Fi/GSM. To prevent major damage, the detector detects the flames caused by the fire and activates the water sprinkler. The appliance system includes components such as buzzer for alarm, display of temperature, humidity and we use to extinguish the fire.

Keywords: COVID-19, intelligent attendance, facial recognition component

A Comparative Study on Human Error Algorithms in Indian Fireworks Industry

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Abstract

The hazards involved in every process of the firework industries were identified using Job Safety Analysis (JSA). It is known that ninety percentages of the accidents are due to unsafe acts and hence probable human error in each process is calculated by using Standardized Plant Analysis Risk Human Reliability Analysis (SPAR H) technique. Comparing the probability of human errors with HEART and SPARH techniques, the highest probability of human error occurred in three processes such as mixing of chemicals, filling of chemicals and material handling in magazine room. Considering the error producing conditions HEART has superiority, While SPAR H is better due to its extensive task evaluation. Finally, in detecting errors in task which requires working conditions such as stress, complexity and ergonomics SPAR H has high sensitivity. Suitable preventive techniques were also suggested to reduce human error. The manufacturing process of firework products is a critical phase where workers come in direct contact with hazardous chemicals leading to greater risk. Furth more hazard rating and health hazards associated with each chemical was determined and preventive measures were given for the safe handling of the chemicals.

Keywords: Analysis, critical, error, HEART, SPAR H,

Determining the Root Causes of Accidents Using Fault Tree Analysis to Improve Rail Transport Safety in India

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Abstract

The aim of Indian railways is to safeguard people's lives and property through the administration, regulation, and technological advancement of all modes of rail transportation. Maintaining the safety of railways depends on identifying hazards from rail accidents. Nowadays the frequency of railways accidents is increasing due to human error. Determining the actual reason of a train accident is challenging and it is significant to minimize the accidents. In this study, fault tree analysis (FTA) is used to identify the possible causes of a system failure. In order to get the professional's viewpoints on the influencing causes for rail accidents in Indian Railways, a questionnaire survey was performed among the railway workers. The risk of train accidents due to numerous contributing factors was ranked using the analytical hierarchy process (AHP) method. It is identified that thorough track maintenance and rail problem identification techniques was proved to be a phenomenally successful way for lowering the danger of train derailling.

Keywords: Accidents, Analysis, Hazards, Railway, Significant

Hazard and Operability Studies for Gas Flow Line in a Manufacturing Industry Transport Safety in India

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Abstract

For any industry to succeed in safety performance, the hazards must be identified, associated risks must be evaluated, and it must be reduced to levels that may be tolerated. There are various techniques to quantify the risk, but the applicability of those methods must be carefully chosen. It has been determined that handling and storing propane in the wheel manufacturing business is hazardous. As the process involves flow of liquid, changes in temperature & pressure, Hazard and Operability Studies (HAZOP) is used for evaluating the risk. The aim of this work is to conduct a qualitative risk analysis on the propane flow line. Furthermore, during the manufacturing of wheels, they are placed in an oven for instant drying where the heat produced is greater than the ambient temperature. As a result, the workers are exposed to larger amount of heat during the work shift. Each worker's heat stress is computed using their metabolic rate and atmospheric variables. A reasonable course of action is suggested to less the exposure of heat stress based on the calculated heat stress values.

Keywords: Associated, Business Evaluating, Storing, Variables

Assessing the Risk and Probable Human Error in Indian Fireworks Industry

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Abstract

Firework industries are mostly located in and around Sivakasi, Tamil Nadu. Firework industries are well known to be a hazardous industry. Right from the initial phase of manufacturing till the transportation and storage of fireworks in the stores, risk to life and property is high. Fire is one of the major hazard which occur due to natural or man-made causes. The hazards in firework industry are identified using checklist method and risk is quantified using Hazard Identification & Risk Assessment (HIRA) technique. The parental risk assessment technique is used as it has extensive risk evaluation in terms of quantification & categorization. Most of the firework industries are in remote areas and the people working in the factories are illiterate. The major cause of accidents is only due to human error in every process. Human probable error occurred during all activities is identified using Human Error Assessment and Reduction Technique (HEART). From the analysis, the possible range of high risk and human error occurred in every process is calculated. The high level of risk and human error associated with each process were reduced to as low as reasonably practicable (ALARP) by conducting frequent safety trainings.

Keywords: Assessment, Firework, Industry, Natural, Technique.

Damage Quantification using Fire & Explosion Index in Fertilizer Industry

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Abstract

The risk involved in the fertilizer industries is high as it involves larger amount of fertilizers, hazardous chemicals, liquid and gases. There is a need to minimize the risk of chemical exposure and fire explosions to create a healthy workplace. Using Dow's chemical exposure index and Dow's fire and explosion index, the present study set out to evaluate the risk of chemical exposure and fire explosion in the fertilizer industry and investigate the effects of the regulating techniques. To calculate fire explosion at process subunits, the most recent DOW fire and explosion index guideline was used. Based on significant influencing characteristics including process pressure, temperature, and material value, the main process subunits in the fertilizer industry were identified. Ammonia synthesis reactor's fire and explosion index was calculated. For the ammonia storage tank, the chemical exposure index was also determined. In the meantime, each case's controlling strategies were identified, and their influences were determined. Furthermore emergency evacuations, suitable preventive measures have been recommended for a safer workplace.

Keywords: Fertilizer, Investigate, Synthesis

Experimental Investigation on Axially Loaded Passive Piles

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Abstract

Pile is a slender member which transfers the load from soil of low bearing capacity to soil of high bearing Capacity. They are also designed to provide resistance against lateral soil movements. These piles are also known as passive piles and can be found in deep excavation activities, tunneling operation, Pile driving operation and settling embankments. Pile foundations designed to support tall buildings and services are often subjected to lateral soil movements and axial loads simultaneously. In this study 1g model tests are conducted on single and group pile embedded in medium sand behind the retaining wall. The parameters varied are the distance between pile and sheet pile wall, number of piles, pile group configuration, stiffness of pile and soil. It is observed that the deflection of single pile is more than the deflection of pile group for the various L/d ratios tested. Also the deflection of axially loaded pile group is more than the deflection of passive pile group. The pile head deflection is found to decrease exponentially with increasing distance between the pile and the wall. The deflection of piles is more for piles placed at 2d distance from the wall than the pile at 4d and 6d from the wall. Design charts are plotted for the prototype piles which will be useful in the construction field.

Keywords: Buildings, Capacity, Passive, Parameters, Slender

Electrical Power Generation from Revolving Door

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Abstract

Meniel world requires a lot of energy in different phases to run their livelihood. So this factotum describes the conversion of muscular energy into mechanical energy which can be again converted into useful electrical energy. The renewable energy and some unconventional source of energy also provide reinvigorate economy for climate stabilization and reduce the consumption of fossil fuel. The main goal of this project is to design and fabricate a miniature revolving door which can generate energy by amplifying the initial RPM of door shaft that harnesses human motion and change it as electrically.

Keywords: Factotum, Muscular energy, Renewable energy, Unconventional source

Computerized Fluid Dynamic Analysis of Ship-to-Ship Hydrodynamic Interaction

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Abstract

Utilizing a CFD code, a numerical analysis of ship-to-ship interaction forces is carried out, and the results are compared with experimental data and panel method analysis findings. In the analysis of interaction forces, two ship models—a tug and a tanker—moving parallel to one another at two distinct fluid depths and lateral distances were used. Four alternative flow models are used in the computations, including inviscid and viscous flow with a deformable free surface and inviscid and viscous flow with the free surface described as a rigid wall. With the experimental data that was available and the panel method's results, a fair level of agreement was attained. When the horizontal clearance is narrow, the wave-making effects may be significant, but viscosity's influence on the calculations is shown to be quite minor.

Keywords: FEA, CFD, interaction force, Numerical Method

Design and Implementation of Solar Based Pest Controller

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Abstract

The majority of people in India are employed in agriculture. The damage caused by insects and other pests kills the crops and results in an annual loss in production, despite the fact that it is the farmers' main source of revenue. Use of insecticides is one solution that is frequently employed for this. Pesticides can harm people, animals, and the environment when they are applied in high quantities. A solar-powered insect pest trap is used to stop this. In this model, a night time insect capture technique makes use of an automatic control system. The model's findings suggested that the proposed solar-powered insect pest trap may effectively get rid of a variety of insect pests. The majority of farmers can use it because it is the most efficient instrument for monitoring insect pests, causes no harm to the environment, and is also inexpensive.

Keywords: Agriculture, Solar Energy, Solar Panel, Pest, Pesticide.

Design and Development of IOT-based Pest Monitoring Approach for Smart Agriculture

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Abstract

The human race has found that agriculture is the most reliable and long-term source of subsistence. This is because the methods used to produce crops and animals are eco-friendly and regenerative. Pest birds and rodents are a major cause of agricultural losses; the desire to create a more effective, humane, and environmentally friendly system for pest control stems from the fact that current pest control technologies present environmental and health risks to both humans and the entire ecosystem. This work is focused on the construction of a solar-powered automatic pest management system that will leverage the three fundamental signals of motion, sound, and light used by people to frighten rodent and avian pests away from farms.

Keywords: Pest Monitoring, Arduino, Acoustic, IOT

Design and Fabrication of Pedal Powered Water Pump Filtration (Wpf)

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Abstract

This study shows a prototype and conducts an experimental investigation into the operation of a Pedal Powered Water Pump Filtration (WPF) and its purification, which has been utilized for watering of gardens and the delivery of pure drinking water. WPF will have a centrifugal pump that is pedal-driven. The most fundamental requirement for existence is water, but around 1 billion people worldwide lack access to it. Reliability is one of the key elements integrated into the design because our demography must encompass some of the poorest locations in the globe. The pump and filter system's operation should need the least amount of upkeep feasible. Because it will be assumed that people have never used a vehicle of this sort, the design must also be user-friendly. After the design is optimized, the materials used in the construction will be taken into account to determine the manufacturing process that is the most affordable. The findings show that the WPF will discharge and head a considerable quantity.

Keywords: Pedal operated power, Design, Optimization, and Purification.

Aerodynamic analysis of Fishing Boat using CFD

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Abstract

Offshore fishing boat performs significantly better or worse depending on their aerodynamics. This sort of boats' separate components' aerodynamic drag forces were put to the test. The calculations were performed using the solid model of the boat created in CAD software. The boundary conditions, the turbulence model, and the computational grid were all developed. The CFD technique was used to do the numerical computations based on these hypotheses. The fluctuation of the drag force with respect to speed in the range of 0 to 40 m/s was also shown. Seven different angles of attack between 0° and 14° between the boat and the water's surface were tested. The research's scope enabled the creation of a drag force map based on the specified parameters. In order to minimize the aerodynamic drag produced on each of the boat's various components, the form of the structure may be optimized using the test findings.

Keywords: Boat, CFD, Aerodynamic analysis, Drag force.

Analysis of an Economic Pyrolysis Plant to Convert Plastic Waste to Liquid Fuel

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Abstract:

Plastic is a high molecular weight substance that is used in our everyday lives and is now posing a significant danger to the environment. Tanzania produces approximately 60 thousand tonnes of plastics each year, and old items have become a familiar sight in overflowing bins and landfills. Despite efforts to develop future biodegradable polymers, there have been little definitive advancement towards eradicating the present problem. The method of transforming waste plastic into value-added fuels is described here as a possible alternative for plastic recycling. Plastic waste (low density polyethylene) will be pyrolyzed in this project to produce liquid fuel with the same qualities as crude fuels. Pyrolysis occurs in the absence of oxygen and at high temperatures of around 300°C, which is why I built a reactor to generate the necessary temperature for the process. Waste plastics will be depolymerized to produce various value-added fuels for instance diesel, kerosene and petrol, lubricating oil and so on. The conversion of plastic waste into gasoline benefits both the environment and the economy. The conversion of plastics to fuel will now transform the difficulties into an opportunity to create income from trash.

Keywords: Paralysis, Plastic Waste, Liquid Fuel, polyethylene, gasoline

Experimental Investigation on Water Treatment by Using Cascade Filter

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Abstract

Water is a very important natural resource which is very important for our day to day life. Our present study is the removal of iron (Fe) and manganese (Mn) using an aeration system for groundwater. This study presents the usage of waste materials (ashes and non ashes) to treat the turbid water for safe drinking for reuse. The properties of the water sample are tested for both physical and chemical properties like pH, turbidity, TDS, TSS, Electrical Conductivity, and total solids are estimated by suitable laboratory procedures. They give an undesirable taste and odor. Use of natural products to reduce turbidity in water samples is a technique that has been repeated from many years and the materials used are safe and effective, like Cause Nut Shell and very fine Sand (300 Micron). Also, the effect of flow rate on the still productivity is investigated during five sunny days. The results show that the maximum productivity is obtained in the lowest possible flow rate.

Keywords: Water Treatment, Turbidity, pH, TDS, TSS

Solar Tracking System for Efficient Power Generation

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Abstract

The emerging era is energy demanding and there is a drastic need to shift to more eco-friendly methods for power generation. The non-renewable resources generate 86% of the world's power. Around the world, coal and gas power plants are shutting down due to lack of fuel. With more and more industries and governments joining the Green Movement, the demand for cost effective renewable energy has surged. Solar power can be easily harnessed as compared to other eco-friendly methods, using solar panels and the conventional process of converting solar energy to electrical energy. Since solar panels can only be utilized up to their full potential in clear sky and sunny conditions, its usage is affected by geographic location. Using the same concept, we make the panels follow the sun resulting in significant increase in energy production. The system can further be made cost effective by modifying the existing panels. The concept is simple yet very efficient, robust and scalable. This method can be used for domestic as well as industrial applications. In optimal conditions, this method can generate up to 40% more energy than a conventional solar panel system of the same size. In conclusion, just by learning from nature, using only a gearbox and controller in addition to panels, we can generate significantly more electricity. In addition to this method, using most efficient solar panels that give maximum power output even in overcast conditions can further increase power output.

Keyword: Renewable Energy, Solar Energy, Tracking System.

Automatic Braking System

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Abstract

An automatic Braking system is an intelligent mechatronic system includes an Ultrasonic wave emitter provided on the front portion of a car producing and emitting Ultrasonic waves. An Ultrasonic receiver is also placed on the front portion of the car operatively receiving a reflective Ultrasonic wave signal. The reflected wave (detected pulse) gives the distance between the obstacle and the vehicle. Then a microcontroller is used to control the speed of the vehicle based on the detection pulse information to push the brake pedal and apply brake to the car stupendously for safety purpose.

Keyword: Braking system. Mechatronics system, UV

Fabrication of Multi Purpose Agricultural Machine

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Abstract

Agriculture being one of the major occupations in India, Agriculture plays a vital role in the Indian economy. Indian agriculture has registered impressive growth over last few decades. It is very essential to discover and implement new detain this field, though lot of work has been done in this area. It is unfortunate that, these ideas are not being implemented properly in actual field. This is due to high cost and is complicated for rural people. Multipurpose agriculture or farming machine is basic and major machine involved in agriculture for maximum yielding. The Conventional method of weeding, seed so wing and pesticide spraying is a laborious process and hence for that reason there is a scarcity of labour sand basically, many farmers in India also use bullocks, horses and buffalo for farming operation. This will not satisfy need of energy requirement of the farming as compared to other countries in the world. This result in delayed agriculture crop production practices to overcome these difficulties, we are thinking that human and animal efforts can be replaced by some advance mechanism which will be suitable for small scale farmer from economical and effort point of view. So, we are developing this machine which will satisfy all this need and to solve labour problem. A solar powered multipurpose agricultural machine is designed for weeding, seed sowing and pesticide spraying purpose.

Keyword: Agriculture, Design, Fabrication, weeding

Electricity Power Generation from Revolving Door

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Abstract

Menial world requires a lot of energy in different phases to run their livelihood. So this factotum describes the conversion of muscular energy into mechanical energy which can be again converted into useful electrical energy. The renewable energy and some unconventional source of energy also provide reinvigorate economy for climate stabilization and reduce the consumption of fossil fuel. The main goal of this project is to design & fabricate a miniature revolving door which can generate energy by amplifying the initial RPM of door shaft that harnesses human motion and change it as electricity.

Keyword: Electricity power, Design, Fabrication.

Pulley Based Movable Crane Robot

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Abstract

Here we put forward the design and fabrication of a motorized pulley based crane robot. The system consists of a movable frame chassis which consists of a pulley mechanism using a shaft used to handle the rope. The pulley shaft is mounted in a frame to hold it in at 45degree angular position for lifting. Also our system consists of motors mounted at bottom of vehicle to drive it in desired directions. Also it consists of another motor used to drive the rope pulley mechanism. The top motorized mechanism is used to drive the lifting logic while below motors are used to drive the vehicle. The vehicle frame and pulley frame are designed to support maximum weight in a small structure for demonstration of mini movable pulley robotic system.

Keyword: Design, fabrication, pully based robot.

Fabrication of Pick and Place Arm

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Abstract

This system is very beneficial for places where there is a need to pick an object move it and place it to some other place safely. If the object is being picked by a human, there is a risk of damage to the object which is avoided by this system. The system provides a robotic arm that is controlled by remote. This system also includes a vehicle so that the robotic vehicle can be moved to pick and place object with the help of robotic arm. As soon as the user presses the push buttons, the commands are sent to the remote, which makes the arm move in the specified up or down direction or grip open or close. Thus this Remote Controlled Pick and Place Robotic Arm Vehicle project can be used to safely pick up an object, move it and place it anywhere you want. The robot uses the 4 motors to control the movement of the vehicle via remote.

Key word: Robotic, fabrication, Design, Remote controlled

Cloud data storage and security: A systematic look at problems, current solutions, and where things are going in the future

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Abstract

Microsoft, Amazon, and Google, among others, are leading the way in creating and offering advanced cloud computing systems at a low cost. Cloud computing's largest security issue prevents people from embracing it. Cloud computing infrastructure security is crucial. Cloud infrastructure security research has addressed certain holes, but new issues keep arising. This systematic literature review (SLR) examines research on security, availability, integrity, confidentiality, network security, and cloud security concerns. This SLR assessed prominent digital libraries' 2017–2022 research studies. After careful screening, we chose 115 publications to address the study questions. Secure communication may be achieved by encrypting cloud data. This research also examined some key issues that make cloud security engineering difficult.

Keywords: Cloud computing, Decryption, Encryption, Network security, Cloud database.

Decentralized Voting System Using Block chain

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Abstract

The purpose of this Decentralized Voting System Using Blockchain is to provide a secure, transparent, and immutable platform for conducting elections. The system employs the use of smart contracts on the Ethereum blockchain to automate the voting process and ensure that all votes are counted accurately. The system was developed using Solidity, a programming language for smart contracts, and Truffle, a development framework for Ethereum. The system's frontend was developed using HTML, CSS and JavaScript. The system's security was ensured through the use of encryption techniques and private keys to secure users' identities and their voting records. The system's architecture allows for the registration of voters, the creation of ballots, the casting of votes, and the tallying of results, all on the blockchain. The system's decentralized nature ensures that votes cannot be tampered with, and the results are transparent and available for all participants to verify. This project report concludes that a decentralized voting system using blockchain technology has the potential to revolutionize the way elections are conducted, by providing a secure, transparent, and immutable platform that can be trusted by all participants. The system can be used in various settings, including governmental and non-governmental elections, corporate boardroom elections, and more.

Keywords: Ethereal, Block chain Voting, Decentralization, Election.

Fresh and hardened properties of concrete with the incorporation of recycled aggregate towards enhancing constructions and demolition waste management

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Abstract

This work discusses about the fresh and hardened properties of concrete containing construction and demolition wastes. Construction and Demolition waste (C&DW) were normally disposed into landfills and in low lying areas and seems to be gradually engaged in construction. The use of recycled aggregate from C&DW materials rather than conventional aggregate has double environmental benefits: it reduces the use of natural resources while also reducing the amount of land require for waste disposal. The goal of this experiment is to highlight the efficiency of C&D based recycled aggregate in concrete in order to improve waste management on construction sies. So, it was concluded that 50% RCA replacement would be better strength of concrete mix and was used for various constructive elements. These findings indicate that RCA could be used in concrete preparation in area where natural aggregate is few and expensive. The use of recycled aggregate will achieve cost reduction and environment friendly.

Keyword: Construction, Demolition, Waste Management, Recycled Aggregate

Weld Bead Quality Prediction in MIG Welding of ASTM 106 Grade B Pipes for High Temperature Applications Using the Response Surface Methodology

Michael Raj.F¹, Bravin Daniel. E², Starlin Deva Prince. J³, Rakesh.I.P⁴, Ajith Kumar. S⁵

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Corresponding Author: michaelrajf@yahoo.com

Abstract

Boiler tubes, heat exchanger pipes, and gas and oil pipe lines need complicated welding. High temperatures during welding affect the weld, HAZ, and base material. Pipe welds' mechanical, metallurgical, and residual thermal stresses limit their use in industry, particularly for high-temperature applications. Heat from welding and thermal gradients impacts pipe metallurgy and weld dependability. Industry uses metal inert gas welding (MIG) to connect metals for pipe manufacturing of various diameters and lengths. This study uses ASTM A106 grade B seamless pressure pipe, which transports high-pressure and high-temperature fluids and gases in power plants, boilers, petrochemical facilities, oil and gas refineries, and ships. The experimental setup's MIG welding equipment automatically welds the specified pipe material as it slowly spins. MIG welding settings are changed to butt weld. After welding, samples are examined for tensile strength, beam geometry, microstructure, and weld flaws. This study uses response surface methodology (RSM) to forecast weld bead quality by determining the best process parameters for welding quality and process optimization.

Key words: Bead geometry; MIG Welding; Response Surface Methodology

Coating Material Model Development for Low Carbon Steels Using MCDM Criteria

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Corresponding Author: michaelrajf@yahoo.com

Abstract

Propellers, impellers, pumps, and other fluid handling equipment found in warships and submarines are all susceptible to flow-based erosion and corrosion. Amorphous coatings based on iron are believed to be more successful than other coating materials in mitigating erosion, corrosion, and damage in the aforementioned components. The choice of coating material for AISI 304L SS is the main topic of this study. In this study, MCDM methods were used to generate a WC-10Co-4Cr coating on a stainless steel substrate. The method used to determine the weights of the criteria is called the fuzzy analytic hierarchy process (FAHP), and the method used to rank the alternatives is called the combination of the distance-based assessment method (CODAS).

Key words: Erosion-corrosion; Fuzzy Analytic Hierarchy Process; AISI 304L SS

Multifilament Waste Fishnet at T90° with Glass Fibre and Polyester Matrix: Dynamic Mechanical Analysis

Michael Raj.F¹, Bravin Daniel. E², Starlin Deva Prince. J³, Vijayan.P⁴

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Corresponding Author: michaelrajf@yahoo.com

Abstract

Composite material is stronger, lighter, longer-lasting, and cheaper to maintain. These qualities have led to several engineering applications that minimise energy use and environmental effects. Multifilament waste fishnet at T90° and glass fibres were employed as reinforcement in an unsaturated polyester matrix to assess static and dynamic mechanical characteristics. Composite specimens were hand-laid. Nylon fishnets are strong and grid-woven. Composites made from discarded nylon fishnet and glass fibre improve their characteristics. A positive shift in Tan δ peaks and a composite peak height decrease were seen at higher temperatures. The waste nylon fishnet and glass fibre composites with loading dampened best. Hybridization improves static and dynamic mechanical characteristics. This composite's characteristics are compared to those of waste fishnet or glass fibres. The standard glass fibre composite offers qualities equivalent to those of glass fibre and fishnet-integrated composites, expanding its use in light-weight marine and automotive components. Reusing discarded fishnet to make composites reduces trash dumping.

Keywords: Fishnet, composites, DMA, SEM, mechanical characteristics

Optimisation of the Mechanical Characteristics of a Polyester Matrix with Multifilament Discarded Fishnet/Glass Fibre

Michael Raj.F¹, Bravin Daniel. E², Starlin Deva Prince. J³, Dhayananth Jegan.C⁴

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Corresponding Author: michaelrajf@yahoo.com

Abstract

This research analyses waste multifilament fishnet and glass fibre composites for mechanical qualities and acceptable combinations using the grey relational technique. Fishnet nylon has great impact strength, flexibility, and gloss. They withstand chemicals and abrasion well. This study compares multifilament waste fishnets with glass fibre included in three mesh sizes (16, 32, and 60 mm) at T90° orientation to typical layers of glass fibre composites. ASTM requirements were followed for water absorption, tensile, impact, and flexural characteristics. Eight-layer glass fibre composites almost matched waste fishnet composites. SEM inspection of cross-section and fishnet-layered polyester and glass fibre composites revealed flaws on the fibre-resin matrix interface. Waste fishnet fibre-reinforced composite laminates were hand-laid. The findings propose using waste fishnet in composites for marine, automotive, and aeronautical applications. Reusing leftover fishnet composites reduces trash dumping.

Keywords: Fishnet, Glass Fibre, Composites, Mechanical Properties, SEM, Grey relationship technique

Cooling and Deep-Freezing Seafood in Mechanized Trawlers with Phase-Change Materials

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Corresponding Author: michaelrajf@yahoo.com

Abstract

In order to maintain the container's temperature within the necessary range without the need for a refrigeration unit, eutectic plates are often employed in refrigerated trucks. Eutectic is a phase-changing substance that doesn't change when heated or cooled repeatedly. Eutectic plates are composed of a combination of two or more compounds, each of which has a lower melting point than the others. A solution that has a phase transition temperature lower than 0°C (32°F) is called eutectic. During the day, tectonic plates function to maintain the storage container at a consistent, predetermined temperature by absorbing and dispersing a significant quantity of thermal energy without using energy. During the night, they need energy to freeze. High-density polyethylene, aluminium, and stainless steel pipes are used to hold the eutectic substance. Eutectic plates on chilled boards replace heavy refrigeration units, simplifying the system and lowering the possibility of component failure from vibrations during transit. Additionally, there is a larger contraction in CO₂ emissions.

Keywords: deep-freezing, mechanised trawlers, phase-change Materials

IOT Based Sewage Safety Monitoring System

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Abstract

A smart solution is designed for the safety of the workers as well as the public in waste water management system. The emission of poisonous gas from the drainage and wastes can be detected by the gas sensor by setting the proper threshold limits. Pulse oximetry sensor is used to monitor the pulse of the workers working. Sound absorbers are used to find the noise inside the working area. The air medium in the working area is checked frequently for the presence of poisonous contents which cause skin irritation, explosions and humidity is sensed. Every parameter sensed is compared with the threshold limits and if any variation is found, the alarm is set to operate. Also warning messages and warning calls are end to the working persons as well as to the control room. The temperature and heart beat sensor is also set with the worker in order to track the slip or fall of the working personals. All the data from the sensors are collectively given to the control room every now and then.

Keywords: Internet of Thing, Gas monitoring, Noise Monitoring, Temperature and Heart Beat Monitoring

Efficient Age Estimation using Face-Based Dynamic Patch Fusion

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Aruthenganvillai, Kanyakumari District, Tamil Nadu, India

Abstract

Human faces serve as a crucial means of visual communication, providing a wealth of nonverbal information, including identity, gender, emotional expression, and age. With the increasing popularity of convolution neural networks (CNNs), recent works on face-based age estimation employ these networks as the backbone. In this paper, we propose a face-based age estimation framework, called Attention-based Dynamic Patch Fusion (ADPF). In ADPF, two separate CNNs are implemented, namely the Attention Net and the Fusion Net. The Attention Net dynamically locates and ranks age-specific patches by employing a novel Ranking-guided Multi- Head Hybrid Attention (RMHHA) mechanism. The Fusion Net uses the discovered patches along with the facial image to predict the age of the subject. Since the proposed RMHHA mechanism ranks the discovered patches based on their importance, the length of the learning path of each patch in the Fusion Net is proportional to the amount of information it carries (the longer, the more important). ADPF also introduces a novel diversity loss to guide the training of the Attention Net and reduce the overlap among patches so that the diverse and important patches are discovered. Through extensive experiments, we show that our proposed framework outperforms state-of-the-art methods on several age estimation benchmark datasets.

Keywords: Age estimation, convolutional neural networks, attention mechanism, feature fusion.

Active Noise Cancellation in VTOL Aircrafts

Elaya Perumal Annamalai^{1*}, Prithviyeet Saha², Varun Vashisht³, Vishwesh Sadanand Yardi⁴,
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Department of Aerospace Engineering, Lovely Professional University, Phagwara, Punjab, India¹²³⁴

Abstract

Active Noise cancellation (ANC) is an emerging technology and is mainstream in high-end headphones and earphones. With the advancements in recent technologies, it sees a potent future in the field of surveillance and airlifting in medical emergencies. Air medical services equipped with ANC will benefit patients by reducing the strain on their ears. Few researchers have addressed the question of the implementation of ANC in an open space, especially a vertical take-off and landing (VTOL) aircraft. In our research, a technique for applying active noise cancellation (ANC) is explored to reduce the noise pollution from a propeller of a drone.

Keywords: Active Noise Cancellation (ANC), Vertical Take-off, and Landing (VTOL), drones.

Simulation on various parameters of fluid injection Shock Vector Control in C-D Nozzle

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Assistant Professor^{1*}, Final year Aerospace student^{2,3,4}

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Elaya.26681@lpu.co.in^{1*}, bandaprathamesh@gmail.com²,
sneha789maity@gmail.com³, satyamsagar321@gmail.com⁴

Abstract

Research has been performed to analyse the nozzle flow field of Secondary Injection Thrust Vector Control (SITVC) or Shock Vector Control (SVC) and to estimate the impacting parameters of SITVC. In this article, factors like injection port angle, injection location and pressure ratios of secondary fluid or nozzle pressure ratio are represented which influence the SVC. We changed the parameters of location, angle of the secondary fluid injection port and observed the effects on the exhaust gases. It is observed that if the injection port is too close to the throat or the Secondary Pressure Ratio (SPR) is too high, the oblique shock formed in the divergent part of the C-D nozzle touches the opposite wall resulting in a low pitch thrust vectoring at the outlet. Also, the graphs also represent when the boundary layer separation occurs right before the oblique shock.

Keywords: Injection, SITVC, divergent

Numerical Simulation and Comparative Analysis of NACA 0012 and RAE 2822 Supercritical Airfoils

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Abstract

The aerodynamic performance of airfoils is crucial for the optimization of aircraft design. This proposed paper aims to conduct numerical simulations of the flow over variable supercritical airfoils, specifically NACA0012 and RAE2822, using Ansys The computational dynamic of the aerodynamic characteristics of the supercritical airfoil is analyzed by measuring the pressure and velocity distribution in the airfoil. The results show different values of lift and drag coefficients for the two airfoils, indicating their unique aerodynamic characteristics. Overall, this study provides valuable insights into the aerodynamic performance of the NACA0012 and RAE2822 airfoils and their suitability for specific applications. The results could assist in the design and optimization of aircraft, providing a foundation for further research in this area. This paper highlights the importance of numerical simulation in studying the aerodynamic characteristics of airfoils and its potential applications in aircraft design.

Keywords: Supercritical airfoil, NACA0012, RAE2822, Coefficient of Drag, Angle of Attack, Pressure,

Consumer Involvement and Purchase Pattern of Organic Food Products in Chennai City

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Contact number:9841875556.

Abstract

Individual consumer behaviour and their transcendental involvement in the purchase shows their perception towards product need identification, risk involved in the purchase, product values, perceived prestige and the product satisfaction. The main aim of this research is to identify the impact of consumer involvement on the purchase pattern of organic food products. The researcher collected 614 samples using purposive sampling method and exploited confirmatory factor analysis and linear multiple regression analysis and structural equation model to test the hypotheses. It is found that the consumer involvement in the purchase of organic food products is not a unique phenomenon whereas it is a combination of five important predominant factors product needs to purchase organic food products and their risk involved in the purchasing of organic food products. It is also concluded from the research that product value and perceived prestige of consumers of organic food products motivate them to involve deeply in the purchasing process of organic food products.

Keywords: Consumer involvement, Purchase pattern, structural equation model.

An Efficient secure data storage and sharing using Re- Encryption Approach in IoT based on Blockchain

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²Assistant Professor, Department of Computer Science and Engineering, Stella Mary's College of Engineering, Tamilnadu, India, Email: mamithasuyambu@gmail.com*

Abstract

The evolution of the Internet of Things has seen data sharing as one of its most useful applications in cloud computing. As eye-catching as this technology has been, data security remains one of the obstacles it faces since the wrongful use of data leads to several damages. In this article, we propose a proxy re-encryption approach to secure data sharing in cloud environments. Data owners can outsource their encrypted data to the cloud using identity-based encryption, while proxy re-encryption construction will grant legitimate users access to the data. With the Internet of Things devices being resource-constrained, an edge device acts as a proxy server to handle intensive computations. To increase the reliability in secure data storage and satisfy the basic requirements related to IoT-related smart computing networks. So, propose and implement a Novel Artificial Intelligence based Blockchain Secure Model (NAIBSM) to provide efficient secure data storage in IoT-related smart computing systems. This model flexibly captures each user authentication for the detection of different user-related attacks (i.e. distributed denial-of-service (DDOS))

in the storage of data via applying Artificial Intelligence (AI) calculation method i.e. Leverage Bat algorithm to explore complex features. Build a blockchain at the server side to provide secure communication and reliability of storing data on the terminal of IoT. This approach provides random hash values to each data to ensure blockchain for the integrity of data and uses a weight-based data storage procedure to arrange/store and classify data to each user with secure and unsecured storage in smart computing networks. Also, we make use of the features of information-centric networking to deliver cached content in the proxy effectively, thus improving the quality of service and making good use of the network bandwidth. Further, our system model is based on blockchain, a disruptive technology that enables decentralization in data sharing. It mitigates the bottlenecks in centralized systems and achieves fine-grained access control to data. The security analysis and evaluation of our scheme show the promise of our approach in ensuring data confidentiality, integrity, and security.

Keywords: Blockchain, Encrypt, Proxy.

Email Spam Detection using Optimized Machine Learning Technique

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Abstract

The internet has provided numerous modes for secure data transmission from one end station to another, and email is one of those. The reason behind its popular usage is its cost-effectiveness and facility for fast communication. In the meantime, many undesirable emails are generated in a bulk format for a monetary benefit called spam. Despite the fact that people have the ability to promptly recognize an email as spam, performing such task may waste time. To simplify the classification task of a computer in an automated way, a machine learning method is used. Due to limited availability of datasets for email spam, constrained data and the text written in an informal way are the most feasible issues that forced the current algorithms to fail to meet the expectations during classification. This paper proposed a novel, spam mail detection method based on the document labeling concept which classifies the new ones into ham or spam. Moreover, algorithms like Naive Bayes, Decision Tree and Random Forest (RF) are used in the classification process. Three datasets are used to evaluate how the proposed algorithm works. Experimental results illustrate that Naive Bayes has higher accuracy when compared with other methods.

Keywords: SPAM, HAM, Naive Bayes, Random Forest, False Positive, False Negative.

An Optimized Deep Learning Technique for the Early Detection of Deep Vein Thrombosis

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²Assistant Professor, Department of CSE, Stella Mary’s College of Engineering, Nagercoil, India. Email: senthilc1983@gmail.com

³Assistant Professor, Department of CSE, Arunachala College of Engineering for Women, Nagercoil, India. Email: mulli0205@gmail.com

Abstract

Deep vein thrombosis (DVT) is a serious condition that occurs when a blood clot forms in a deep vein in the body. DVT can happen to anyone and can cause serious illness, disability, and in some cases, death. DVT can happen in the lower leg, thigh, or pelvis, but they can also occur in the arm. Diagnosis of ipsilateral recurrent deep vein thrombosis (DVT) is difficult because persistent intravascular anomalies after previous DVT prevent ultrasound from diagnosing compression. Magnetic resonance direct thrombus imaging (MRDTI) with a detection time of 10 minutes accurately distinguishes recurrent acute DVTs from chronic thrombotic debris. In this review, a prospective, international, multicenter diagnostic management study was performed in which patients with clinically suspected recurrent acute ipsilateral DVT participated. Patients were treated based on the MRDTI result, which was achieved within 24 hours of the start of the study. Industry experts have tried to robotize the path to identify and diagnose diseases where the healthcare system can benefit from DVT innovation. Accordingly various tests have suggested a one-sided framework for predicting and diagnosing internal cerebral DVT for disease using a safe and unambiguous optimization algorithm. Extensive studies were conducted to obtain a variety of research papers from all disciplines of Cerebral DVT and to examine key commitments and their priorities. The proposed image analysis model uses image super resolution (SR) for pre-processing. The telangiectasia in the skin on the legs is detected using hessian matrix-based image detection approach. The experiments were done with the globally available DVT and Varicose vein images as well as the photographic images captured through smart phones. The proposed robust approach produces excellent results without requiring any restricted environment for capturing the images.

Keywords: Deep Vein Thrombosis, Hessian Matrix, Internet of Things, Pulmonary Embolism, Super-resolution, Varicose Vein, Low-Cost Screening, green computing, edge computing.

AERIAL VIEW OF STELLA MARY'S COLLEGE OF ENGINEERING



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Aruthenganvilal, Kallukatti Junction, Azhikal Post, Kanyakumari District - 629 202

Campus Activity Intimation Form

Date: 27.03.2024

From,
Mr/Ms I. Sabareesa Priya
The Head/ Campus Activity Coordinator
Department of Electrical & Electronics Engineering
Stella Mary's College of Engineering
Dear Sir,

To,
The Authorities Concerned,
Stella Mary's College of Engineering
Kanyakumari District.

Modern Trends in Engineering and Management
Regarding.

Sub: Intimation of International Conference on

As per the Approval of the Management the following campus activity will be organized in the campus in general/by the Department of Electrical & Electronics Engineering. The details are as follows,

1	Name of Campus Activity:	<u>International Conference on Modern Trends in Engineering & Management</u>
2	Date/s of Campus Activity:	<u>02.04.2024</u>
3	Time of Campus Activity:	<u>9.30 AM to 2.00 PM</u>
4	Venue of Campus Activity:	<u>New Conference Hall</u>
5	Campus Activity coordinator/contact person:	<u>Mrs. I. Sabareesa Priya</u>
6	Campus Activity requested by:	<u>Mrs. I. Sabareesa Priya</u>
7	Name of the Guest (if any) :	<u>Dr. Jothi Manohar</u>
8	Date & Time of Arrival :	<u>02.04.2024</u>
9	Venue of Reception & Refreshment for Guest:	<u>New Conference Hall</u>
10	Target audience	<u>Other college participants & EEE students</u>
11	No. of participants expected	<u>200</u>
12	Facility Required	<u>New Conference Hall</u>

27/3/24

Thanking you,

Yours faithfully,

27/3/24

Campus Activity coordinator/ Staff in-Charge

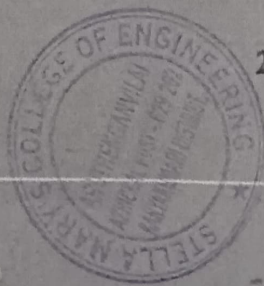
The Principal

Information to:

1. Admin Team

2. All Hends

3. All Staff





SMCE/CSAY-CCR-01/ FM-01/AYPL/R01

Stella Mary's College of Engineering

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC, NBA (MECH & CSE))
Aruthengavillai, Kallukatti Junction, Azhikal Post, Kanyakumari District-629202

Conference/Symposium/Workshop/Faculty Development Programme(FDP)/Seminar Proposal form

Date:06/03/2024

From
Dr.A.R.Gayathri,
Head,
Department of Electrical And Electronics Engineering
Stella Mary's College of Engineering

To
The Chairman
Stella Mary's College of Engineering

Dear Sir

Subject: Permission to hold a **International Conference -2024** & Submission of Proposal form-Regarding

The Department of Electrical And Electronics Engineering is planning to organize an International Conference on **02 April 2024** in the Venue: New Conference hall . The detail of the event is enclosed herewith for your perusal.

We hope you will give us the permission requested.

Thanking you in anticipation,

Yours faithfully,

(Dr. A.R. Gayathri)



1. Name of the Department : Electrical And Electronics Engineering

2. Activity:

Seminar	Symposium	Conference	Workshop	FDP
		✓		

(Please tick mark the appropriate box)

3. Geographical Coverage

State	National	International	Campus
		✓	

4. Title of the Conference :International Conference on Modern Trends in Engineering and Management-2024

5. (i) From 02/04/2024 To: -

(ii) Total No. of days:1

6 Venue (write complete address):
New Conference Hall

7. No. of participants expected to participate:

Students	Local	Outstation	Foreigner	Total
50	20	20	10	100

8. a). Objectives and importance of the Event.

b). Topics will be Discussed.

Recent Trends in Electrical and Electronics

c). Future outcome.

9. Details of proposed Event

a) Details of proposed sessions:

FN& AN:Paper presentation,

b) Name, address of resource persons delivering

Keynote:

Dr.Joshi Manohar Dean & HoD,Presidency
University,Bangalore..

10. Name and designation of Chairperson and Members of the organizing committee.-EEE Association

11. Name and address of Collaborating Registered/Professional bodies/National agencies / registered societies etc. (if any)

12. Total proposed expenditure (in figures) Rs.2,50,000/ (In words) Two lakhs and Fifty thousand only

12.1Details of Expenditure: Enclosed



13. Financial Assistance & facilities to be provided by the Institution (Enclose Budget - ANNEXURE-1 & Facility Requirement Statement- ANNEXURE-2)
14. Details of Grants planned to receive (Enclose Statement-ANNEXURE 3)
15. Technical programme of the Conference (Please attach the symposium announcement brochure).
16. Name of the Staff Member responsible for submitting the audited statement of accounts for the present grant, if sanctioned. Mrs.I.Sabareesa Priya/AP/EEE
17. Total grant requested from The Institution (in figures) Rs.10000 for Expert remuneration
(In words) Ten Thousand only.
18. Recommendation of the competent authority of the institution / Head of the institution

Name & Signature of the

HEAD OF THE DEPARTMENT
DEPT. OF ELECTRICAL & ELECTRONIC ENGINEERING
STELLA MARY'S COLLEGE OF ENGINEERING
ARUTHENGAL
Recommendations of Chairman

Head of Institution with Seal

This is to certify that

- a). Institution has no objection in permitting the Department of EEE to
organize the Conference/ Symposium on 02/04/2024 in the
Institute's premises from _____ to _____
- b). Space and other infrastructural facilities would be extended for organizing the aforesaid
Conference / Symposium .
- c). the fund allocated Rs. _____ shall be utilized for the purpose for which they are sanctioned.

Signature of Vice Chairman

Chairman

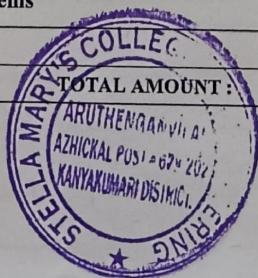




STELLA MARY'S COLLEGE OF ENGINEERING **ANNEXURE-1**
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai, Accredited by NAAC, NBA (MECH & CSE))
ARUTHENGANVILAI, KALLUKATTI JUNCTION, AZHIKAL POST, KANYAKUMARI DISTRICT-629202
Department of Electrical and Electronics Engineering

1. **BUDGET FOR SYMPOSIUM/WORKSHOP/FDP/CONFERENCE**

		YEAR	2023 - 2024 (ODD/EVEN)
INVITATION, POSTER DESIGN and DISPATCH			
Items	Quantity	Amount	Total Amount
Invitation		100	2000
Invitation Printing Charge		100	2250
Brochure Design		-	750
TOTAL AMOUNT :			5000
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE			
Items	Quantity	Amount	Total Amount
Shawl	-	-	500
Chief Guest Memento	-	-	1500
Chief Guest Travelling Charge,	-	-	-
TOTAL AMOUNT :			2000
STAGE AND DECORATION COMMITTEE			
Items	Quantity	Amount	Total Amount
STAGE AND DECORATION COMMITTEE(Stage Decoration with flowers)	-	-	7000
Banners	2x750 1x500	1500 500	2000
TOTAL AMOUNT :			10000
TECHNICAL COMMITTEE			
Items	Quantity	Amount	Total Amount
Remuneration to Chair Persons(From Institution)	5	2000	10000
Kit (File, Scribbling pad & Pen)Photo album,Proceedings	100	500	50000
A4 Sheet Papers (Bundle)			
TOTAL AMOUNT :			60000
CERTIFICATE COMMITTEE			
Items	Quantity	Amount	Total Amount
Certificate Printing & Design	100	20	2000
Cash Prize	-	-	-
Prize (Poster presentation, Paper presentation, Technical quiz)	200	10	2000
TOTAL AMOUNT :			4000
REFRESHMENT & FOOD COMMITTEE			
Items	Quantity	Amount	Total Amount
Tea, Snacks for Participants and Our Students (FN & AN)	200	60	12000
Food (Participants and Our Students)	200	240	48000
TOTAL AMOUNT :			60000
OTHER EXPENSES			
Items	Quantity	Amount	Total Amount
Miscellaneous Expenses	-	5000	5000
TOTAL AMOUNT :			5000



Summary

Committee Proposed Expenses	Amount(Rs)
INVITATION, POSTER DESIGN and DISPATCH COMMITTEE	5000
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE	2000
STAGE AND DECORATION COMMITTEE	10000
TECHNICAL COMMITTEE(Magazine)	10000
PROCEEDINGS WITH CONFERENCE KIT	50000
JOURNAL PAPER PUBLICATION	160000
CERTIFICATE COMMITTEE	4000
REFRESHMENT & FOOD COMMITTEE	60000
OTHER EXPENSES	5000
TOTAL AMOUNT	306000
Amount Collected from Participants (250000)	250000
Amount Collected from our Students (56000)	56000
Expected Sponsorship from supplier-	N/A
Balance Amount Required	N/A

2. Enclose-Facility Requirement Form- ANNEXURE-2

3. Details of Grants planned to receive ANNEXURE-3

3.1 Contribution from Students (Upon approval from Management)

Sl. No.	Semester	Amount per Student	Total (in Figures)	(In words)
1	S1/S2	-	-	56000/-(Fifty six Thousand only)
2	S4	500	25000	
3	S6	500	13500	
4	S8	500	17500	

3.2 Participant fee in case of Conference/Symposium/Workshop/FDP

Sl. No.	No. of Participants Expected	Amount to Receive (in figures)	(In words)
	100	2500	250000/-

3.3 Details of grant from Sponsors

Sl. No.	Name & Address of Sponsor	Grant to Receive (in figures)	(In words)
	-	-	-

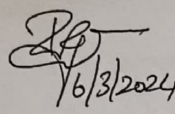
3.4 Details of grant planned to get from Professional Societies for the conduct of the event

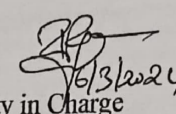
Sl. No.	Name & Address of Professional Societies	Grant to Receive (in figures)	(In words)
	-	-	-

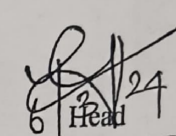
3.5 Total Grant planned to receive

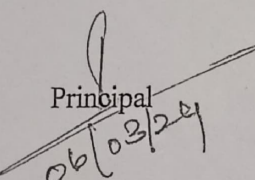
Sl. No.	Cumulative total of all the incomes	Grant to Receive (in figures)	(In words)

3.1	Contribution from Students	56000	Three Lakhs sixteen thousand only
3.2	Participant fee	250000	
3.3	Details of grant from Sponsors	-	
3.4	Details of grant planned to get from Professional Societies	-	
3.5	Contribution from Institution	10000 ✓	
3.6	Total Grant planned to receive	316000 ✓	


 Signature of Secretary
 Association of EEE


 Faculty in Charge
 Department of EEE


 Head
 HEAD OF THE DEPARTMENT
 DEPT. OF ELECTRICAL & ELECTRONICS E.
 STELLA MARY'S COLLEGE OF ENGINEERING
 ARUTHENGANVILAI, AZHICKAL
 KANYAKUMARI DISTRICT


 Principal
 06/03/2024





International Conference on Modern Trends in Engineering and Management



Date
02
APRIL 2024

icmtem2024@gmail.com
www.icmtem.in



Stella Mary's College of Engineering,
Department of Electrical and Electronics Engineering,
Aruthengavilal, Kallakudi Junction, Aruthengavilal Post,
Kanyakumari District-629282, Tamil Nadu, South India.

Organized by



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING,
STELLA MARY'S COLLEGE OF ENGINEERING
in association with AB TECHNOLOGIES



ABOUT CONFERENCE

The International Conference on Modern Trends in Engineering and Management (ICMTEM-2024) aims to provide an International forum for the Industry professionals and researchers to deliberate and discuss their research findings and explore the future directions in the emerging area of engineering, management and technology.

PAPER SUBMISSION

The ICMTEM-2024 covers a wide range of topics from the following departments,

- ✓ Artificial Intelligence and Data Sciences
- ✓ Bio-Medical Engineering
- ✓ Civil Engineering
- ✓ Computer Science and Engineering
- ✓ Electronics and Communication Engineering
- ✓ Electronics and Instrumentation Engineering
- ✓ Electrical and Electronics Engineering
- ✓ Mechanical Engineering
- ✓ MCA and MBA

PAPER FORMAT

Each paper must follow the format as prescribed in the website.

PAPER PUBLICATION

All the accepted papers will be published in any one of the following journals.

1. International Journal for Modern Trends in Science and Technology (IJMTST) ISSN: 2455-3778.
2. International Journal of Advanced Trends in Engineering and Management (IJATEM) ISSN: 2583-7052.

REGISTRATION DETAILS

Important details about conference registration are given in the website-www.icmtem.in

REGISTRATION

- Last Date to apply : 26.03.2024
- Acceptance Intimation : 28.03.2024
- Registration last date : 30.03.2024
- Camera ready paper submission : 31.03.2024
- UG Students : *Rs 2500/-
- PG Students, Research Scholar and Staffs : *Rs 2500/-
- Co-Author : *Rs 500/-

* Including Conference Kit and Food
For more details kindly refer www.icmtem.in

CONFERENCE AND ORGANIZING COMMITTEE

CONVENER

Dr. A.R. Gayathri

Associate Professor & Head,
Department of Electrical and Electronics Engineering,
Stella Mary's College of Engineering.

CO-ORDINATORS

Mrs I. Sabareesa Priya

Assistant Professor,
Department of Electrical and Electronics Engineering,
Stella Mary's College of Engineering.

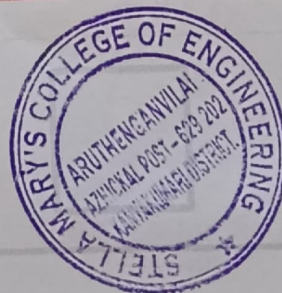
Mrs. M.E. Shajini Sheeba

Assistant Professor,
Department of Electrical and Electronics Engineering,
Stella Mary's College of Engineering.

Mr. K.S. Kevin

Managing Director,
AB Technologies, Nagercoil

Contact us **Co-ordinator- ICMTEM 2024** | ☎ +91-9840511458, +91 88070 68644, +91 93634 01105.



You

Today at 11:19 am



International Conference on Modern Trends in Engineering and Management

AB
TECHNOLOGIES

Date:
02
APRIL 2024

 icmtem2024@gmail.com
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Venue:

STELLA MARY'S COLLEGE OF ENGINEERING,
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING,
Aruthengavilai, Kallukatti Junction Arhikal Post,
Kanyakumari District-629202, Tamil Nadu, South India.



Dr. Nazerath Charles
Founder & Chairman
SMCE



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STELLA MARY'S COLLEGE OF ENGINEERING

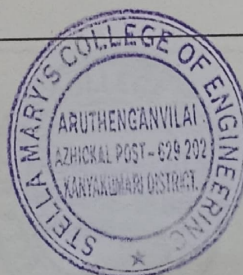
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

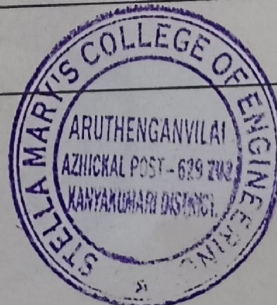
INTERNATIONAL CONFERENCE ON MODERN TRENDS IN ENGINEERING & MANAGEMENT'24

AGENDA

Date: 02-04-2024	Time: 10.00AM to 4.00PM Venue: New Conference Hall
10.00AM	Tamil Thai Vazhthu
10.05AM	Prayer Song
10.10AM	Lighting of lamp
10.15AM	Welcome Address Dr. K.Ezhil Vignesh, IQAC Coordinator, Associate Professor/EEE
10.20AM	Honoring the dignitaries on-Dias
10.30AM	Felicitation ceremony Dr. J.Jenix Reno Director Dr. R.Suresh Premil Kumar Principal Dr. R.K.Madhumathi Joint Director, Head/CIVIL
10.45AM	Annual Report Dr. A.R.Gayathri Head/EEE



10.55AM	1.Chief Guest Introduction by Ajisha A, Final Year/EEE Chief Guest Address – 2.Chief Guest Introduction by Libin ML, Final Year/EEE Chief Guest Address – 3.Chief Guest Introduction by Suvatha M, Third Year/EEE Chief Guest Address– 4.Chief Guest Introduction by Ezhil Monisa MK, Final Year/EEE Chief Guest Address – 5. Chief Guest Introduction by Jettison Acksno J, Final Year/EEE Chief Guest Address – Mr. K.S. Kavin, Managing Director, AB Technologies
11.20AM	Releasing of i) Proceeding ii) Magazine
11.30AM	Vote of thanks Mrs. J.Jasmine Assistant Professor/EEE
11.40AM	Refreshments
11.45AM to 1.00PM	Paper Presentation-Session 1
1.00PM	Lunch
1.30PM to 3.00PM	Paper Presentation-Session 2
3.00PM	Valedictory Function
3.05PM	Honoring the judges
3.10PM	Honoring the Heads
3.15PM	Certificate Distribution
3.40PM	Prize Distribution (Academic Toppers & 100% Attendance)
3.50PM	Vote Of Thanks
4.00PM	National Anthem





STELLA MARY'S COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai and Accredited by NAAC&NBA(CSE&MECH))

Aruthenganvilai, Kallukatti Junction Azhikal Post, Kanyakumari District-629202, Tamil Nadu.

Department of Electrical and Electronics Engineering INTERNATIONAL CONFERENCE ON MODERN TRENDS IN ENGINEERING & MANAGEMENT'24

The conference aimed to foster collaboration among students, faculty, and industry professionals in the field of electrical and electronic engineering. It provided a platform for sharing cutting-edge research, discussing emerging technologies, and exploring career opportunities.

"ICMTEM 2K24-Inter National Conference on Modern Trends in Engineering and Management " organized by the Department of Electrical and Electronics Engineering of Stella Mary's College of Engineering, which is scheduled on 02-04-2024 with the Presents of Dr.J.Jenix Rino Director ,Dr.Suresh Premil Kumar, Principal of SMCE, Dr.A.R. Gayathri, HoD of EEE Department, Faculty members of EEE ,Judges from various colleges, lot of participants from other colleges and Students of Electrical and Electronics Engineering.



Key note speakers

Dr.T.Raja Ram

Motivational Speaker

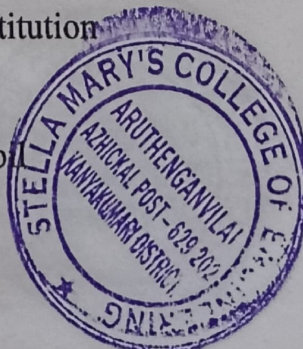
Dr.B.Vaikundaselvan

Executive Director,Nehru Group of Institution

Dr.D.Sam Harison

HoD/EEE

Rohini College of Engineering,Nagercoil



Technical Sessions

The conference featured several technical sessions covering various topics:

- Power Systems
- Power Electronics
- Bio Medical
- AI & DS and more in engineering field...

Also the selected papers were published in international journal. We released our department magazine 2k24 with the conference proceedings by the distinguished dignitaries.

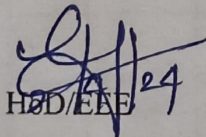
Students showcased their research through poster presentations. Notable topics included:

- Energy-efficient algorithms for smart devices.
- Design of a low-cost solar charger.

Feedback from attendees was overwhelmingly positive, with many expressing appreciation for the variety of topics and the quality of speakers. Suggestions for future conferences included:

- More interactive sessions.
- Opportunities for more student-led discussions.

The conference successfully met its objectives and strengthened the community within the EEE department. Plans for the next conference are already underway, focusing on emerging technologies in sustainability.


HOD/EEE





INTERNATIONAL CONFERENCE ON MODERN TRENDS IN ENGINEERING AND MAN
STELLA MARYS COLLEGE OF ENGINEERING
DePARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ICMTEM-2024

April | 02 | 2024

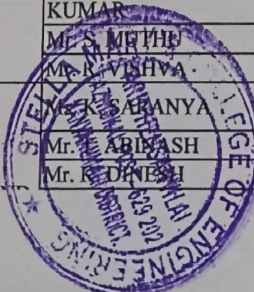
REGISTRATION FORM

Sl. No.	Paper ID	Title of the Paper	Name	College	Contact	Email
1	ICMTEM_001	CNN BASED INTELLIGENT AUTOMATED SERICLUTURE MONITORING SYSTEM	Mr. N. YUVARAAJ Mr. S. SANJAI GURU Mr. T. VAIRAMUTHU Mr. V. SRIRENGANACHIYAR	RAMCO INSTITUTE OF TECHNOLOGY	8608144613	953620106092@trjpm.ac.in
2	ICMTEM_002	A NEW SWARM OPTIMIZATION BASED MOBILITY CLUSTERING APPROACH FOR THE INTERNET OF VEHICLES	Mr. S. PRADEEP KUMAR Mr. S. VINOTHKUMAR Mr. M. YOGARAJKUMAR Mr. P. GUNASERKARAN	RAMCO INSTITUTE OF TECHNOLOGY	9360153706	vinothvno32@gmail.com
3	ICMTEM_003	A REVIEW ON SMART SHOPPING CART USING ARDUINO AND RFID	Dr. A. MANONMANI Mr. V. SAMBATH Mr. L. SOUNDHAR	SAVEETHA ENGINEERING COLLEGE	9787161976	manonmani@saveetha.ac.in
4	ICMTEM_004	DEVELOPMENT OF A SENSOR NETWORK FOR ENVIRONMENTAL MONITORING USING PIC MICROCONTROLLER: AN	DR. M. ARIVALAGAN Ms. R. DIVYA Mr. M. SANTHOSH PRABU	SAVEETHA ENGINEERING COLLEGE	7598123461	divyaravikumarpkt@gmail.com
5	ICMTEM_005	DESIGN AND IMPLEMENTATION OF AN INDUSTRIAL DATA ACQUISITION AND MONITORING SYSTEM	Dr. M. ARIVALAGAN Ms. C. AMRITHA Ms. A. SRIRAM	SAVEETHA ENGINEERING COLLEGE	9360700732	amritha0206@gmail.com
6	ICMTEM_006	EMPOWERED ECOBIN FOR WASTE MANAGEMENT THROUGH INTERNET OF THINGS	Mr. R. DEIVA NAYAGAM Mr. R. CHANDRALEKHA Mr. R. RANGITH Mr. K.	KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION	9500840194	rangith0312@gmail.com
7	ICMTEM_007	REVOLUTIONIZING ADULT WALKER MOBILITY: A CONTEMPORARY UPGRADE APPROACH	Ms. DHIPA Mr. S. PRADEEP Mr. S. KUMARESAN Mr. R. VILLIAM DAVID	NANDHA ENGINEERING COLLEGE	6379485404	mohanprasathbme@gmail.com
8	ICMTEM_008	ENHANCED IOT BASED MONITORING SYSTEM FOR COMATOSE PATIENTS	Mrs. K. THIVYABRABHA Ms. G. THARANI Ms. T. M. MOWNITHA Mr. S. NIROSHKUMAR Mr. R. HARIHARAN	NANDHA ENGINEERING COLLEGE	8778612900	gstharani01@gmail.com
9	ICMTEM_009	BRAIN GLIOMA DETECTION AND GRADING USING 3D MRI	Mr. SYED ABDALLAH ALBEEZ Dr. X. ARPUTHA RATHINA Ms. C. VIJAYALAKSHMI	B. S. ABDUR RAHMAN CRESCENT INSTITUTE OF SCIENCE & AMP;	9500191137	albeezsyedabdallah@gmail.com
10	ICMTEM_010	LOW COST COLD STORAGE FOR HORTICULTURAL PRODUCE	Ms. M. HARIPRIYAA Ms. F. ASRAF NISHA Ms. R. DEEPIKA Ms. G. INDHUMATHI	KLN COLLEGE OF ENGINEERING	9843136221	indhuganesan0@gmail.com
11	ICMTEM_011	V2V CHARGING SYSTEM IN ELECTRIC BIKE	Ms. MONICA P. PREESH Mr. JEGANVJ	SAVEETHA ENGINEERING COLLEGE	7299396957	jeganvvj@gmail.com

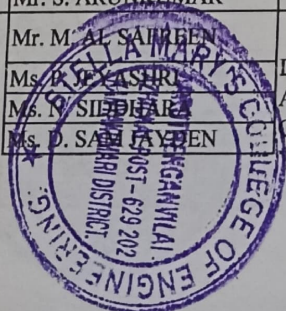




12	ICMTEM_012	NEONATAL SEPSIS PREDICTION ADVANCING	Ms. P. SOWMIYA Ms. R. PRIYADHARSHINI Ms. V. ARUNA Ms. S. HARINI Ms. A. AATHEESWARI	ARASU ENGINEERING COLLEGE	8668007116	sowmiyaperumals p@gmail.com
13	ICMTEM_013	NERVOUS BREAKDOWN PREDICTION SYSTEM USING	Ms. G. KAVITHA Ms. T. ABIRAMI Ms. H. ASHIKA PARVEEN Ms. E. SAROJINI Ms. T. SUBASHINI	ARASU ENGINEERING COLLEGE	9629024277	ashirisspm@gmail.com
14	ICMTEM_014	SIMULATION OF ELECTRIFICATION OF RAILWAY	Mr. V. VISHAB PUSHINTH FRED Mr. A. BINDU	CSI INSTITUTE OF TECHNOLOGY	9940752835	engineer vishab@gmail.com
15	ICMTEM_015	INTELLIGENT TRAFFIC CONTROL SYSTEM FOR AMBU LANCE	Mr. A. K. CHAKRAVARTHY POOJITHA BONTHU Mr. P. V. S RAMA REDDY Mr. P. MAHESH Ms. V. NAGA JAYA LAKSHMI	ADITYA ENGINEERING COLLEGE (A)	8919929960	ramareddy0329@gmail.com
16	ICMTEM_016	HEMO DETECT ADVANCING HEMATOLOGIC HEALTH THROUGH AUTOMATED LEUKEMIA DETECTION	Ms. P. SOWMIYA Ms. S. YOGASUNDARI Ms. S. KAVIYA Ms. R. CHANDRA PRITHA	ARASU ENGINEERING COLLEGE	8668007116	sowmiyaperumals p@gmail.com
17	ICMTEM_017	SMART GLOVE FOR PARALYZED PATIENTS WITH HEALTH	Ms. M. DHASARATHI Ms. R. SRUTHIKA Ms. C. SHOBANA Ms. K. UMA MAHESWARI Ms. V. VAISHALI	ARASU ENGINEERING COLLEGE	6382236520	rameshshruthi884@gmail.com
18	ICMTEM_018	HUMAN PHARYNGEAL NEOPLASM DETECTION USING	Ms. G. KAVITHA Ms. M. DEEPA Ms. A. MISHAL Ms. S. SHAHIRA Ms. S. SHARMILA DEVI	ARASU ENGINEERING COLLEGE	9789249907	ashrafmishal1112@gmail.com
19	ICMTEM_019	PREDICTION AND THERAPEUTIC DESIGN FOR DIABETIC	Ms. B. VANMATHI Ms. M. PRIYADHARSHINI Ms. B. VIDHYAVASHINI	ARASU ENGINEERING COLLEGE	9962177410	vidhyavashini30@gmail.com
20	ICMTEM_020	DIAGNOSIS OF CHRONIC VENOUS INSUFFICIENCY	Ms. B. VANMATHI Ms. M. MOHAMED RASITH Ms. G. NANDHA Ms. N. SANJAIKANNAN	ARASU ENGINEERING COLLEGE	7708155607	muralivanmathi@gmail.com
21	ICMTEM_021	REALISTIC 2D IMAGE OF THE HUMAN LUNGS FOR ELECTRICAL IMPEDANCE TOMOGRAPHY	Ms. K. SARANYA Mr. S. ABISH Mr. M. MOHAMED KAIF Mr. K. SANJAY	ARASU ENGINEERING COLLEGE	7538835903	kennadisan123@gmail.com
22	ICMTEM_022	COMATOSE MONITORING: BODY MOVEMENT RECOGNITION VIA SMART SENSOR	Ms. M. DHASARATHI Mr. K. G. ARAVIND KUMAR Mr. S. MATHI Mr. R. VISHVA	ARASU ENGINEERING COLLEGE	9626232856	dhasicandol@gmail.com
23	ICMTEM_023	PARKINSON'S DISEASE DETECTION FROM GAIT ANALYSIS	Ms. K. SARANYA Mr. S. ABINASH Mr. R. DEEPA	ARASU ENGINEERING COLLEGE	7538835903	kennadisan123@gmail.com

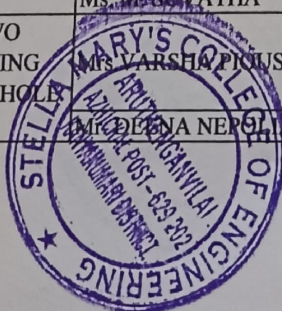


	023	DETECTION FROM SPIRAL AND	Mr. M. RAGULGANATHI Mr. K. SELVAGANAPATHI	COLLEGE		@gmail.com
24	ICMTEM_024	IOT BASED METROPOLITAN TRANSPORT SYSTEM USING	Mr. G.SIVAKUMAR Mr. U. SUDHARSANAKUMAR Mr. K. UMA MAHESWARAN	RAMCO INSTITUTE OF TECHNOLOGY	9952766718	953620106082@ri trjpm.ac.in
25	ICMTEM_025	GENERATION AND VALIDATION OF E-CERTIFICATE USING BLOCKCHAIN	Dr. M. VAMSIKRISHNA Ms. A. KAVYA SHREE Ms. CH. LEKYA SRI Mr. G. VASU Ms. K.V. N. DURGA SREYA	ADITYA ENGINEERING COLLEGE	9059745444	20A91A1208@ae c.edu.in
26	ICMTEM_026	WEARABLE DEVICE FOR PREVENTION OF CRIB DEATH USING POSITION AND HYPOXIA MONITORING	Ms. R. KEERTHANA Ms. G. SAI NIKHILA Mr. T. MANOJ PRASATH	BIST-BHARATH INSTITUTE OF HIGHER EDUCATION AND	9787264411	rkeerthana066@g mail.com
27	ICMTEM_027	IOT BASED HEALTH MONITORING SYSTEM WITH	Ms. M. BINDU PRIYA Ms. B. JAYALAKSHMI Ms. R. KARTHIKA	BHARATH INSTITUTE OF HIGHER EDUCATION AND	9392373881	bindupriya298@g mail.com
28	ICMTEM_028	A REVIEW ON ARDUINO POWERED GAS SENSOR	Ms. R. RATHIKA Ms. M. SUCHITRA Mr. T. MANOJ PRASATH	BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH	6380643781	rathikaramamoort hy12@gmail.com
29	ICMTEM_029	A REVIEW ON ELECTROMYOGRAPHY (EMG) PAIN DETECTION AND MONITORING SYSTEM	Ms. R. K. RAAGHAVI Ms. R. BRINDHA Mr. T. MANOJ PRASATH	BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH	9360464031	bringharamu26658 @gmail.com
30	ICMTEM_030	PV BASED MULTILEVEL INVERTER USING FLYBACK	Mr. P. RATHNAVEL Ms. K. VANITHA Ms. S.RESHMA Ms. S. SAI ISHA Mr. BALDWIN IMMANUEL	SRI SAIRAM INSTITUTE OF TECHNOLOGY	8072217558	sit20ee024@saira mtap.edu.in
31	ICMTEM_031	AUTOMATIC PHASE ADAPTATION IN THREE PHASE SUPPLY FOR ONLINE INVERTER SYSTEMS	Mr. R. DINESH KUMAR Mr. K. MURALI KRISHNA Mr. M. A. VIGNESH	P.S.R. ENGINEERING COLLEGE	9629436789	vigneshoff11@gm ail.com
32	ICMTEM_032	BORE WELL RESCUE SYSTEM	Ms. N. RATHIKA Mr. M. ELUMALAI Ms. K. ALAMELU Mr. S. BALACHANDRAN Ms. G. SRI DEVI	MAHENDRA INSTITUTE	9344651678	elumalaimurugan0 8@gmail.com
33	ICMTEM_033	A REVIEW ON LOWER LIMB VARICOSE VEIN PAIN DETECTION AND MONITORING SYSTEM	Ms. T. DARSHIKA Ms. D. SANGEETHA PRIYA Ms. R. VINODHINI	BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH	6383979662	priyasangeetha958 @gmail.com
34	ICMTEM_034	TRANSFORMER MAINTENANCE MONITORING SYSTEM	Dr. J. KOHILA Mr. S. KESAVAN Mr. V. RISHIKESH Mr. S. ARUNKUMAR	P.S.R. ENGINEERING COLLEGE	6369584818	srikesavan432@g mail.com
35	ICMTEM_035	WIND GENERATORS AND TURBINES USED FOR WIND POWER GENERATION - A REVIEW	Mr. M. AL SAIBEN Ms. K. J. SASHI Ms. N. SIDDHARTHA Ms. D. SAI JAYDEN	DR. SIVANTHI ADITANAR COLLEGE OF	8946066351	alsafreenrehman@ gmail.com



		REVIEW	Mr. E. FANTIN IRUDAYA RAJ	ENGINEERING		
36	ICMTEM 036	SMART SYSTEM TO PREVENT DRUNK DRIVING AND SPEEDING ACCIDENTS USING IOT	Ms. A. COLLINS VINSHA Ms. D. AMIE SHERIN Ms. M. AYSWARYA Ms. K. ADLIN BABI Dr. JERALDIN AUXILLIA	ST. XAVIER'S CATHOLIC COLLEGE OF ENGINEERING	8870233581	vinshacollins87@ gmail.com
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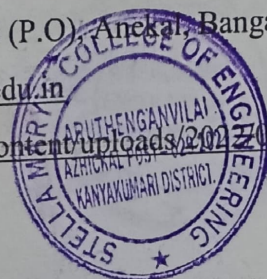
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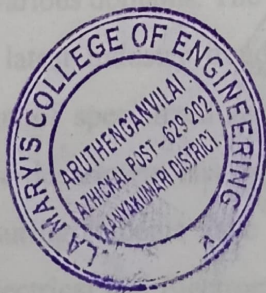
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The Department of Electrical and Electronics Engineering at Stella Mary's College of Engineering was established in 2013 with an initial intake of 60 students. Since its inception, the department has evolved into a comprehensive entity with a strong emphasis on academic excellence, cutting-edge infrastructure, and dedicated faculty members specializing in various domains. The department boasts excellent infrastructure that is in line with the latest technological advancements. Well-equipped lab facilities, modern infrastructure, and a team of experienced faculty members contribute to creating a conducive learning environment. The department is committed to meeting the growing demands of the field, ensuring students receive quality education. The faculty members of the Electrical and Electronics Engineering Department are dedicated to the teaching profession but also actively engage in research activities. Their commitment is reflected in the regular filing of patents and publication of research papers in the field.





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Stella Mary's College of Engineering is promoted by the Nova Educational Trust & established by the well-known business entrepreneur of Kanyakumari District, Dr. Nazareth Charles (Founder and Chairman) an Engineer by profession and a great philanthropist working towards the upliftment of the poor, under privileged and the women of the society and create skillful professionals to serve the nation and industry with integrity. The emphasis on outcomes, measurement of students' performance, and adherence to global standards is highlighted in your description. The accreditation by NAAC and NBA reflects the commitment of Stella Mary's to maintaining high-quality education, particularly in the fields of Mechanical Engineering and Computer Science Engineering. The achievement of accreditation within nine years of its inception is commendable and suggests a dedication to meeting and exceeding educational standards. Furthermore, the mention of Stella Mary's exceptional placement record, including international placements, indicates a strong emphasis on preparing students for successful careers. This reflects positively on the institution's efforts to provide students with the necessary skills and opportunities to excel in their chosen fields.

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international and national conference proceedings and journals. This dedication enhances the overall academic environment, ensuring students benefit from the latest advancements in the field.

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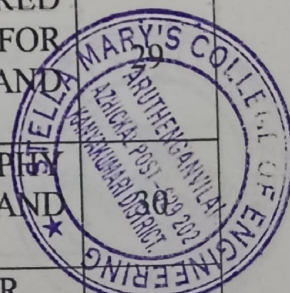
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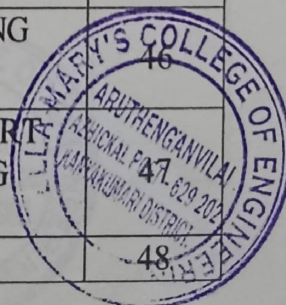




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PAPER ID: **ICMTEM/2024/001**

CNN BASED INTELLIGENT AUTOMATED SERICULTURE MONITORING SYSTEM

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ABSTRACT

Sericulture is the procedure of growing silkworms to produce silk. India is the globe's second-largest silk producer. Sericulture is crucial to India's socioeconomic, cultural, and political development. Temperature and humidity play crucial roles in the growth of healthy silkworms at all stages, particularly during larval development. We are using Arduino controllers and sensor units to forecast environmental changes in order to rescue silkworms. It refers non-identical stages, such as black and swallow worms, as well as worm-borne illnesses.



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PAPER ID: **ICMTEM/2024/002**

A NEW SWARM OPTIMIZATION BASED MOBILITY CLUSTERING APPROACH FOR THE INTERNET OF VEHICLES

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ABSTRACT

The IoV technology enables real-time communication between cars, drivers, pedestrians, and vehicle management systems and road side management. Vehicle communication on IoV networks is challenging due to high speeds and frequent topology changes. In a large network setting with challenging road conditions and a large number of cars, IoV communication performance has additional challenges. A promising approach to improve the IoV communication performance is through vehicle clustering. Identifying a dependable Cluster Head (CH) and minimising clusters are tough jobs. In this research, we offer a Swarm optimization-based, mobility-aware SOMACA is a type of clustering algorithm. SOMACA contains two phases: the clustering phase and routing phase. During the clustering phase, we use the Sparrow Search algorithm (SSA) to pick clusters with stable CHs based on mobility of transmission range, and network grid size. Swarm Optimization-based clustering is a technique inspired by the collective behavior of swarms in nature, such as ant colonies, bird flocks, or fish schools. It belongs to the broader category of metaheuristic optimization algorithms, which are widely used to solve complex optimization problems by mimicking the behavior of natural systems. In the context of clustering, Swarm Optimization algorithms aim to partition a set of data points into distinct clusters in such a way that the data points within each cluster are similar to each other while being dissimilar to data points in other clusters. This process involves iteratively adjusting the positions of cluster centroids or boundaries based on the evaluation of a fitness function that measures the quality of the clustering solution. The key idea behind Swarm Optimization-based clustering is to model the problem as a collective optimization process, where each solution (or candidate clustering) is represented as an individual agent within a swarm. These agents iteratively explore the solution space by adjusting their positions based on local and global information exchanged with neighboring agents. This collaborative exploration enables the swarm to converge towards promising regions of the solution space, gradually improving the quality of the clustering solution over time. One of the most popular Swarm Optimization algorithms used for clustering is Particle Swarm Optimization (PSO). In PSO, each agent (or particle) represents a potential solution and maintains its own position and velocity in the solution space. The particles adjust their positions based on their own experience (personal best) and the experience of the entire swarm (global best), thereby balancing exploration and exploitation to find optimal clustering solutions. Other Swarm



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Optimization algorithms, such as Ant Colony Optimization (ACO) and Firefly Algorithm (FA), have also been adapted for clustering tasks. These algorithms leverage different mechanisms inspired by natural systems, such as pheromone trails in ant colonies or the flashing behavior of fireflies, to guide the search process towards better clustering solutions. Swarm Optimization-based clustering offers several advantages, including its ability to handle high-dimensional and nonlinear data, its flexibility in accommodating various types of distance metrics and clustering criteria, and its robustness to local optima. However, like any optimization technique, Swarm Optimization-based clustering also has its limitations and challenges, such as sensitivity to parameter settings, scalability issues with large datasets, and convergence to suboptimal solutions in complex problem domains. Overall, Swarm Optimization-based clustering represents a promising approach for addressing clustering problems in diverse domains, including data mining, machine learning, and computational biology. Its ability to harness the power of collective intelligence and emergent behavior makes it a valuable tool for discovering meaningful patterns and structures in complex datasets.



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PAPER ID: ICMTEM/2024/003

A REVIEW ON SMART SHOPPING CART USING ARDUINO AND RFID

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ABSTRACT

The retail sector is characterized by ongoing transformation, wherein technological innovations assume a central role in augmenting the shopping encounter. This scholarly work introduces the notion of a "Smart Shopping Cart" that capitalizes on Arduino microcontroller technology and Radio-Frequency Identification (RFID) to revolutionize conventional shopping carts into sophisticated, interactive apparatus. The principal research objective in this endeavour is to optimize and enrich the shopping journey through the integration of RFID technology within shopping carts, with the overarching aim of delivering a shopping experience that is both seamless and highly efficient for consumers.



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PAPER ID: ICMTEM/2024/004

DEVELOPMENT OF A SENSOR NETWORK FOR ENVIRONMENTAL MONITORING USING PIC MICROCONTROLLER: AN OVERVIEW

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ABSTRACT

In order to better serve its citizens, a "smart city" can maximise its available resources. Temperature, humidity, and concentrations of carbon monoxide (CO) and methane (CH₄) are foundational factors for smart city services include weather monitoring, building automation, and air quality control. This research presents a bespoke layout for a temperature, humidity, CO, and methane tracking system that is enabled by the Internet of Things. Data is sent from the GSM transmitter to the thing-speak cloud receiver in a well-established mechanism. A Graphical User Interface (GUI) created in Thing-speak is used to monitor and save the data received at the receiver node on a personal computer (PC) in an excel spreadsheet. The development of an Android app that can transmit data from thing-speak to a mobile device has also made remote data monitoring possible. We analyse the results and assess the system's efficacy.



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PAPER ID: ICMTEM/2024/005

DESIGN AND IMPLEMENTATION OF AN INDUSTRIAL DATA ACQUISITION AND MONITORING SYSTEM

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ABSTRACT

In contemporary industrial processes, the acquisition and analysis of real-world process variables like temperature, humidity, and light intensity are vital for ensuring optimal efficiency and quality control. This paper introduces an Arduino microcontroller-based industrial data acquisition and analysis system, designed for cost-effectiveness and efficiency. The system integrates humidity, voltage, current and temperature sensors with the microcontroller, detailing the sensor module architecture, connection methods, control unit operations, and the serial communication protocol used to transmit data to the cloud for further analysis. This solution offers a practical approach to collecting, processing, and analyzing critical data in industrial environments, facilitating informed decision-making and process improvement.



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PAPER ID: **ICMTEM/2024/006**

EMPOWERED ECOBIN FOR WASTE MANAGEMENT THROUGH INTERNET OF THINGS

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ABSTRACT

The rapid expansion of the population has also led to a surge in the amount of waste generated daily. This increase in the waste generation due to ongoing urbanization and industrialization has become an issue for both local and national governments. Local authorities are facing significant challenges in managing waste disposal, particularly as it is often indiscriminately dumped in landfills, exacerbating the problem further. To minimize risks to the environment and human health, it's crucial to implement meticulous measures during the segregation and transportation of waste. In India, the process of waste segregation traditionally relies on rag pickers, a process that is both time-consuming and hazardous to the health of those handling the waste. Here, we suggest employing an Automatic Waste Segregator (AWS), a cost-effective, user-friendly and easy to use solution for segregating household waste. The system is engineered to divide waste into two distinct categories: dry and wet waste. It utilizes a rainwater sensor to differentiate between the two types and features an LCD display to showcase the segregation results. Experimental reports have demonstrated the successful waste segregation achieved through the implementation of AWS. Our solution is also a smart dustbin that autonomously monitors its fill levels, eliminating the need for constant human oversight. Commencing with innovative design, this system not only streamlines waste collection but also incorporates safety features to prevent harm to animals and other living organisms that may become trapped within the waste. By addressing ethical and environmental concerns, our smart dustbin offers a sustainable and efficient solution to enhance urban waste disposal practices, fostering a cleaner and safer living environment for all.



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PAPER ID: **ICMTEM/2024/007**

REVOLUTIONIZING ADULT WALKER MOBILITY: A CONTEMPORARY UPGRADE APPROACH

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ABSTRACT

A walker is a device which makes easier to get around after surgery or fracture in your foot or leg. A walker allows to keep weight off users feet and legs. It encourages physical activity which helps to maintain muscle strength, balance, and coordination. Walker is one of the helpful device for old age people also. This work presents an innovative walker for adults designed to meet the changing needs of people with mobility impairments. The walker has state-of-the-art features such as an adjustable glucose stand, a foldable seat and an advanced alert system, all connected together via micro and IFTTT tool. The adjustable glucose stand base offers users a unique solution for on-the-go health management, while the foldable seat adds versatility and comfort during use. The alert system integrated with IFTTT, activated by a simple push button, ensures timely help in emergency situations. This walker for adults represents a leap forward in healthcare innovation and demonstrates the possibilities of IoT and connectivity solutions. At the end, it is recommended to make improvements based on user. The featured points to the intersection of technology and healthcare, offering a promising tool to improve the daily lives of a diverse user base.



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PAPER ID: **ICMTEM/2024/008**

ENHANCED IOT BASED MONITORING SYSTEM FOR COMATOSE PATIENTS

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ABSTRACT

In order to guarantee prompt and correct assessment of the patients' health status, this project aims to develop a comprehensive monitoring and warning system designed specifically for coma patients. It does this by integrating a range of physiological markers. In addition to other crucial critical indicators, the device will continuously monitor temperature, heart rate, urine level, finger movement, and blink frequency using non-invasive sensors. To ensure prompt responses from caregivers and medical specialists in the event of substantial changes in the patient's condition, the system will also feature email and phone notifications. The eye blink monitoring module will use computer vision techniques to track and assess neurological activity by recording and analyzing blink frequency. The urine level monitoring system will employ sensors to communicate data in real time and collect information, which will facilitate the early detection of potential issues.



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BRAIN GLIOMA DETECTION AND GRADING USING 3D MRI SCAN

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ABSTRACT

The most prevalent condition affecting the brain, spinal cord, and central nervous system is brain tumors. Brain tumors are difficult to detect using medical imaging because they vary in size, form, and location depending on the patient. Therefore, precise knowledge of a tumor's shape, size, and location is necessary for its identification by medical imaging. The segmentation and grading of brain gliomas using a 3D magnetic resonance imaging (MRI) scan is done in this project using Python Jupyter software and Convolutional Neural Network (CNN) architecture. The entering picture data must first be transformed before being processed further using techniques like subset division and data visualization. Before entering data, all of these stages must be completed for the CNN deep learning model to function. The initial stage of pre-learning was converting the collection of brain tumor images into a format that could be read by a Python machine. The subset division step was used to divide the dataset because of the created Numpy arrays' size and resource limitations. Next, the dataset's patterns are made evident through the use of data visualization. An autonomous system is built to handle the glioma segmentation task in pre-operative MRI scans using a CNN-based deep learning model. The CNN deep learning technique is used to do pixel label segmentation on the tumor area. Accurately segmenting a brain tumor into smaller pieces provides more information about the tumor's condition. This algorithm has also attained excellent accuracy and performance. This efficiency indicator can be used for assessing the segmented tumor region's performance. Predicting the final image is the last stage.



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LOW COST COLD STORAGE FOR HORTICULTURAL PRODUCE

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ABSTRACT

This article presents an interesting Internet of Things (IoT) cold storage management system designed to preserve tomatoes and onions. The system provides precise environmental management to avoid rotting and prolong the shelf life of perishable products by integrating sensors for temperature, humidity, and gas. Important environmental factors are regularly monitored by sensors positioned strategically throughout the storage facility. While gas sensors identify ethylene and other ripening gases and trigger ventilation or ethylene removal systems to slow down ripening and prevent premature spoilage, temperature and humidity sensors maintain ideal conditions for both tomatoes and onions. For real-time analysis, the gathered sensor data is sent to a central IoT platform. To maintain ideal storage conditions, sophisticated algorithms dynamically modify ambient elements, including temperature and humidity. When there are anomalies, the system takes the initiative on its own to maintain freshness. The system provides real-time access to storage conditions through remote monitoring and control via web or mobile interfaces. Strong security protocols ensure confidentiality and data integrity while guaranteeing adherence to privacy laws and preventing unwanted access. The system's effectiveness in improving post-harvest storage procedures, cutting energy use, and minimizing food waste is demonstrated by extensive testing. This solution, which improves food security and sustainability in agricultural supply chains, uses IoT technology and sensor integration to offer a dependable, sustainable approach to cold storage management.



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V2V CHARGING SYSTEM IN ELECTRIC BIKE

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ABSTRACT

This research investigates the application of a Vehicle-to-Vehicle (V2V) charging system for e-bikes, concentrating on the development and assessment of a Split-Pi converter. In order to encourage the widespread use of electric bicycles as a sustainable form of transportation in urban areas, effective charging techniques are essential. An innovative and practical way to increase the range of electric bicycles is to allow them to charge one another while they are moving. This is made possible by the proposed V2V charging system. An essential part of the V2V system, the Split-Pi converter is designed and analysed in this research. The converter's capacity to effectively transfer power between electric bicycles is proved through simulations and results from experiments. The research presented here tackles the issues related to the infrastructure for charging electric bicycles and adds to the continuing efforts to create sustainable transportation alternatives. The results in this study highlight the viability of vehicle-to-vehicle (V2V) charging systems for electric bicycles, as well as how important they are for encouraging eco-friendly urban mobility and having the ability to increase range and decrease the need for a large infrastructure for charging. In order to integrate the V2V charging technology with current electric bicycle systems and put it into practice, more research is needed to develop and improve it.



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NEONATAL SEPSIS PREDICTION ADVANCING NEONATAL HEALTHCARE USING KNN ALGORITHM

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ABSTRACT

Early-onset sepsis in newborns is a critical condition that requires swift detection and intervention to prevent serious complications and improve outcomes. Machine learning (ML) algorithms, coupled with sensor data, offer a promising avenue for early prediction and intervention in sepsis cases among newborns. Here's a breakdown of how ML and sensors can aid in this endeavour. Sensors such as heart rate monitors, ECG devices, and force sensors can continuously collect data on vital signs and physiological parameters of newborns. ML algorithms require relevant features from the collected data for accurate prediction. Features may include vital signs, laboratory results, maternal health history, and other clinical indicators. ML models can analyse data from sensors in real-time, enabling continuous monitoring of newborns for early signs of sepsis. Any deviation from normal physiological parameters can trigger alerts for healthcare providers. ML algorithms can detect subtle changes in vital signs or patterns indicative of sepsis onset before clinical symptoms manifest. Early detection allows for prompt intervention and treatment. The integration of sensors and ML algorithms in predicting sepsis in newborns holds significant promise for improving diagnosis, treatment, and outcomes in this vulnerable patient population. By enabling early detection and personalized interventions, this approach has the potential to reduce mortality rates associated with early-onset sepsis in newborns. However, rigorous validation and clinical trials are necessary to ensure the safety, efficacy, and scalability of these predictive models in clinical practice.



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NERVOUS BREAKDOWN PREDICTION SYSTEM USING ARTIFICIAL INTELLIGENCE

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ABSTRACT

Stress has become a prevalent and pervasive concern in modern society, impacting individual well-being and overall public health. This project introduces an innovative approach for predicting mental disorders using Decision Tree algorithms and implementing a microcontroller-based system to indicate the severity of associated risks. Mental health disorders represent a significant global challenge, necessitating timely intervention and support. Leveraging decision tree algorithms enables the analysis of diverse datasets encompassing psychological, behavioural, and demographic factors with high interpretability and efficiency. Additionally, the integration of a microcontroller system introduces a tangible dimension to risk assessment by illuminating red, yellow, or green lights to denote varying levels of severity. This real-time visual feedback facilitates immediate intervention, enhancing the effectiveness of mental health management strategies. Our model aims to enhance predictive accuracy, enabling proactive identification of potential mental health concerns. Through empirical evaluation, our study demonstrates the superior performance of decision tree algorithms, achieving an impressive stress detection accuracy rate of 94.4%. These findings underscore the reliability and effectiveness of our proposed model in addressing the complexities of mental health disorders. Overall, this research presents a promising avenue for improving mental health outcomes through innovative technology-driven approaches. Using microcontrollers and LEDs, our stress prediction system offers real-time feedback on stress levels, with LEDs changing brightness or colour to reflect varying stress levels. This hardware-software integration empowers users to take proactive steps for stress reduction, enhancing overall well-being and resilience.



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SIMULATION OF ELECTRIFICATION OF RAILWAY LINES USING MICROGRIDS

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ABSTRACT

In order to increase the utilization rate of regenerative braking energy, reduce the operation cost and improve the power quality of traction power supply system in high-speed railways, this system proposes an economic process of energy storage by hybrid renewable energy sources in the train. The planned train station design makes use of solar and wind power, as well as batteries for an efficient storage system. The solar system provides voltage to the inverter through BUCK-BOOST converter. An energy management approach is suggested to control the DC bus by voltage and the buck-boost converter by current. The WECS with DFIG, AC-DC conversion takes place with the aid of PWM rectifier, and the control of rectifier is carried out with a PI controller. The output of converter is fed to the grid through a 3 Φ VSI, which converts the DC voltage into AC voltage. The LC filter is employed to enhance the output of the inverter. The control outputs are the output power of the PV input power sources as well as AC power injected into the power grid. The obtained results indicate that the proposed approach delivers better performance with enhanced efficiency and minimal harmonics. The entire system is validated through a MATLAB simulation.



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INTELLIGENT TRAFFIC CONTROL SYSTEM FOR AMBULANCE USING IOT

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ABSTRACT

Rapid traffic jams are one of the most critical issues in India, affecting ambulance services significantly. As a result of ambulance service delays, patients may lose their lives, and the number of these instances is increasing by the day. RFID technology will be used to operate traffic signals in smart ambulances through various sensors such as RFID readers, RFID tags, and Node MCU controllers. As the smart ambulance approaches within a few metres, the indicator will change to green if it is red, through a wireless network. Traffic density sensors strategically placed at intersections further contribute to the system's awareness of current traffic conditions, aiding in the intelligent decision-making process. Upon receiving an emergency call, the system dynamically adjusts traffic signal timings based on the ambulance's location. This dynamic adjustment creates a prioritized "green corridor" for the ambulance, optimizing its travel path and reducing response times significantly, Wi-Fi networks will be used to communicate with smart ambulances. Wi-Fi networks will be used to communicate with smart ambulances.



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HEMO DETECT ADVANCING HEMATOLOGIC HEALTH THROUGH AUTOMATED LEUKEMIA DETECTION

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ABSTRACT

Microscopic image analysis plays a significant role in initial leukemia screening and its efficient diagnostics. Since the present conventional methodologies partly rely on manual examination, which is time consuming and depends greatly on the experience of domain experts, automated leukemia detection opens up new possibilities to minimize human intervention and provide more accurate clinical information. This paper proposes a novel approach based on conventional digital image processing techniques and machine learning algorithms and deep learning algorithms to automatically identify acute lymphoblastic leukemia from peripheral blood smear images. The proposed model eradicates the probability of errors in the manual process by employing deep learning techniques, namely convolutional neural networks. The model, trained on cells' images, first pre-processes the images and extracts the best features. This is followed by training the model with the optimized Dense Convolutional neural network framework (termed DCNN here) and finally predicting the type of cancer present in the cells. The model was able to reproduce all the measurements correctly while it recollected the samples exactly 94 times out of 100. The overall accuracy was recorded to be 97.2%, which is better than the conventional machine learning methods like Support Vector Machine (SVMs), Decision Trees, Random Forests, Naive Bayes, etc. This study indicates that the DCNN model's performance is close to that of the established CNN architectures with far fewer parameters and computation time tested on the retrieved dataset. Thus, the model can be used effectively as a tool for determining the type of cancer in the bone marrow. To overcome the greatest challenges in the segmentation phase, we implemented extensive pre-processing and introduced a three phase filtration algorithm to achieve the best segmentation results.



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**SMART GLOVE FOR PARALYZED PATIENTS WITH HEALTH MONITORING AND
OBSERVATION SYSTEM**

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ABSTRACT

When the patient undergoes spinal cord injury, strokes, or a condition that affects the central nervous system (CNS) we call it as paralyzed state. Rehabilitation for this condition is difficult because his/her minute improvement is not noticed continuously by the bystanders and the hospital staffs. To prevent this situation we proposed a project, it consists of sensors that monitor the vital parameter of the body. It helps the patient to convey their message with the bystanders and hospital staffs through hand gesture recognition. It converts gesture into text and speech. The information is stored in a separate database and using an IOT platform such as a telegram application. The alert message or abnormal conditions are noted and viewed by caretaker and doctor. It also alerts the bystanders when they are not available at the emergency situation through an alarm.



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HUMAN PHARYNGEAL NEOPLASM DETECTION USING ARTIFICIAL INTELLIGENCE

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ABSTRACT

The pharynx plays a most significant role in serving both the body's air food passageway systems. Pharyngeal neoplasm happens when tissues in the throat grow and spread abnormally, destroying healthy cells. So, pharyngeal neoplasm detection plays a vital role in timely and accurate diagnostic methods for improved patient result outcomes. In this project, we propose a machine learning-based classification system for the automated detection of pharyngeal neoplasm using medical imaging data. A convolution neural network (CNN) architecture was designed and trained on the labelled dataset for classification. The CNN model demonstrates remarkable efficiency in the difference between normal pharynx anatomy and multiple neoplasm symptom performance evaluation metrics, including accuracy, sensitivity, specificity, and area under the receiver operating characteristics (ROC) curve, which was utilized to access the model's diagnostic capability. So, our motto is to provide promising accuracy in pharyngeal neoplasm detection. The pharynx serves as a crucial intersection for both the respiratory and digestive systems, making its health paramount. Pharyngeal neoplasms, characterized by abnormal tissue growth, pose a significant threat, necessitating timely and accurate detection for optimal patient outcomes. In this study, we propose a novel approach utilizing machine learning for automated pharyngeal neoplasm detection through medical imaging analysis. A convolutional neural network (CNN) architecture was meticulously designed and trained on a meticulously curated dataset, annotated by expert clinicians. The CNN model exhibits exceptional performance in discerning between normal pharyngeal anatomy and various neoplasm presentations. Performance metrics including accuracy, sensitivity, specificity, and the area under the receiver operating characteristic (ROC) curve were employed to evaluate the model's diagnostic prowess. Our results underscore the promising accuracy and efficacy of the CNN-based classification system in pharyngeal neoplasm detection. By harnessing the power of machine learning, we aim to revolutionize diagnostic methods, enabling early intervention and improved patient outcomes in the realm of pharyngeal pathology.



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PAPER ID: **ICMTEM/2024/019**

PREDICTION AND THERAPEUTIC DESIGN FOR DIABETIC RETINOPATHY USING LABVIEW

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ABSTRACT

Diabetic retinopathy (DR) is a common diabetic complication that affect eye causing damage to the blood vessels in the retina. Chronic hyperglycemia, which may be due to diabetes type 1 or type 2. LabVIEW software play as major role in predicting the diabetic retinopathy at different stages. The real time image of the affected eye is acquired using Vision Acquisition tool in LabVIEW and then it is processed using Vision assistant tool. IoT technology is used for sending the output result to the corresponding end client. Image processing and IoT, both are implemented using LabVIEW. This innovative solution leverages LabVIEW software to predict diabetic retinopathy by acquiring real-time images of the affected eye and processing them using LabVIEW's Vision Acquisition and Vision Assistant tools. IoT technology enables the transmission of results to end clients efficiently. Additionally, the integration of temperature monitoring allows for the detection of abnormal conditions, with a responsive mechanism employing a Peltier crystal to cool the eye if necessary. The aim is to swiftly and accurately classify patients' diabetic retinopathy status, crucial for timely intervention to prevent vision loss. Hardware implementation using LabVIEW and the design of specialized eyeglasses further enhance patient comfort and care by reducing eye irritation and pain.



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PAPER ID: **ICMTEM/2024/020**

DIAGNOSIS OF CHRONIC VENOUS INSUFFICIENCY AND AUTOMATIC ULTRASOUND THERAPY

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ABSTRACT

Technology has made people increasingly inactive, leading to a decrease in exercise and blood flow. This can cause varicose veins, which are swollen veins often found in the legs. They form when valves in the veins weaken and allow blood to pool. This condition, called Chronic Venous Insufficiency (CVI), causes symptoms like pain and poor blood flow. If these veins clot, it can lead to painful superficial thrombophlebitis. Data collected from surveys and sensors can help determine a person's activity levels and identify those at risk of developing varicose veins. we have developed a way to study varicose veins using sensors and an Arduino Uno board. The sensors track a person's body position, including standing, bending, and movement. The data is collected and analysed to create a personalized dataset. The Arduino board processes the temperature of the area around the veins. By monitoring temperature, we can learn more about the condition and how it affects blood flow. Through non-invasive ultrasound therapy, our project aims to improve blood flow and circulation, alleviating pain caused by varicose veins. This innovative approach provides an alternative to invasive procedures, offering patients a safe, convenient, cost-effective, and effective treatment option. The primary goal is to find a solution that enhances patient outcomes while minimizing discomfort and cost.



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PAPER ID: **ICMTEM/2024/021**

REALISTIC 2D IMAGE OF THE HUMAN LUNGS FOR ELECTRICAL IMPEDANCE TOMOGRAPHY

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ABSTRACT

Electrical impedance tomography (EIT) stands as a cost-effective, non-invasive, and secure method, widely embraced for real-time thoracic impedance imaging. This technique involves recurrently measuring surface voltages derived from a rotating injection of high-frequency, low-intensity alternating current flowing across electrodes encircling the chest. The crux of lung monitoring via EIT hinges on accurately modelling the human thorax and lungs in a true-to-life geometry, particularly in solving the forward problem. To this end, an intricate 2D numerical model of the human thorax, complete with authentic electrical characteristics, is meticulously crafted based on a single section of Computed Tomography (CT) scan data from the EIDORS library, employing a thresholding technique. Subsequently, the forward calculation is executed utilizing the pyEIT library. The resultant potential distribution is scrutinized across two breathing states: exhale and inhale. Furthermore, diverse current injection patterns are juxtaposed to assess their impact on image reconstruction accuracy, employing the regularized Gauss-Newton (GN) algorithm. This comparative analysis sheds light on the influence of forward modelling on image resolution, thereby enhancing the understanding and efficacy of EIT in lung imaging applications.



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PAPER ID: **ICMTEM/2024/022**

COMATOSE MONITORING: BODY MOVEMENT RECOGNITION VIA SMART SENSOR

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ABSTRACT

This paper proposes a novel approach for coma patient monitoring utilizing smart sensors capable of recognizing body movements. The system is designed to detect the even subtle changes in the patient's condition. By strategically placing smart sensors on the patient's body, such as the hand, leg, finger, the system can capture a comprehensive range of movements. By continuously monitoring the patient's body movements, the system can provide valuable insights into the patient's neurological state and alert healthcare providers to any significant changes or abnormalities. Our system uses smart sensors like flex sensor, accelerometer(or) MEMS body sensor and eyeblink sensor. when a person moves any finger, any eye lid or move the body to the right or left side, these three sensors detect the respective movements and an alert message send to the concerned person (doctor/guardian of the patient) through the GSM module. Our system also monitors the heart rate, body temperature of coma patients. If any of the above parameters exceed a certain threshold limit value, the smart device informs the doctors or guardians and ask for corrective actions to save the coma patient life.



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PAPER ID: **ICMTEM/2024/023**

PARKINSON'S DISEASE DETECTION FROM SPIRAL AND WAVE DRAWINGS USING CNN-RNN

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ABSTRACT

Parkinson's disease (PD) is a progressive neurological disorder that affects movement, often leading to tremors, stiffness, and impaired balance. Early detection of PD is critical for effective management and intervention. In this study, we propose a novel method for PD detection using CNN-RNN architecture applied to spiral and wave drawings collected from patients. These drawings, obtained through simple tasks, offer valuable insights into motor function and coordination, which are often impaired in PD. Our approach involves utilising a convolutional neural network (CNN) to extract spatial features from the drawings, capturing intricate patterns and shapes, followed by a recurrent neural network (RNN) to analyse temporal dynamics and sequence dependencies within the drawings. The CNN-RNN model is trained on a dataset comprising drawings from both PD patients and healthy individuals, allowing it to learn discriminative features indicative of PD pathology. Experimental results demonstrate the efficacy of our method in accurately distinguishing between PD patients and healthy controls, with promising performance metrics such as sensitivity, specificity, and overall accuracy. The proposed approach offers a non-invasive, cost-effective, and potentially scalable solution for early PD detection, paving the way for improved patient outcomes through timely diagnosis and intervention.



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PAPER ID: ICMTEM/2024/024

**IOT BASED METROPOLITAN TRANSPORT SYSTEM USING COMPUTER VISION AND
MACHINE LEARNING**

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ABSTRACT

Our innovative solution leverages computer vision algorithms and machine learning models to automate bus route number detection and provide real-time updates on bus locations, revolutionizing urban mobility. By seamlessly identifying and displaying route numbers using cameras installed on bus stops, we eliminate guesswork for passengers and ensure seamless boarding experiences. Additionally, our solution predicts and relays precise arrival times, empowering commuters to plan journeys efficiently and reduce waiting times. Through these advancements, we not only improve the daily commute but also promote sustainable transportation options, contributing to a greener, more environmentally conscious future for our cities.



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PAPER ID: **ICMTEM/2024/025**

GENERATION AND VALIDATION OF E-CERTIFICATE USING BLOCKCHAIN

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ABSTRACT

The E-Certificate system offers comprehensive management of digital certificates, spanning from their creation by administrators to their validation by verifiers. This system facilitates administrators in generating certificates through customizable templates, securely storing them on servers, and distributing them to recipients via email. Recipients can conveniently access and manage their certificates through their accounts, while verifiers can efficiently authenticate certificates to ensure their validity. The primary goal of the E-Certificate system is to automate and streamline the certificate lifecycle, reducing administrative burdens associated with traditional methods and enhancing security through digital signatures and verification mechanisms. By providing a user-friendly and reliable platform, the system aims to meet the diverse needs of administrators, recipients, and verifiers, ultimately improving the overall process of credential management.



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PAPER ID: **ICMTEM/2024/026**

WEARABLE DEVICE FOR PREVENTION OF CRIB DEATH USING POSITION AND HYPOXIA MONITORING

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ABSTRACT

Sudden infant death syndrome (SIDS) also called crib death is a tragic and unpredictable event that can occur during infancy, particularly during sleep. The exact etiology of SIDS is not clear. Studies suggest that SIDS might be associated with a combination of several intrinsic and extrinsic factors like preterm birth or low birth weight, having a history of apnea, unsafe sleeping position or environment, and exposure to smoking or alcohol during pregnancy. The most important preventable SIDS risk factor is sleeping position. In the supine sleeping position, Patho-physiological mechanisms can be avoided which may lead to hypercapnia and death in the prone position. Such mechanisms could be occlusion of airways, elevated diaphragm, rebreathing CO₂, and overheating. So, the main objective of our project is to design and implement a wearable monitoring device aimed at detecting potential indicators of SIDS and alerting caregivers in real-time. The device incorporates sensors to measure vital parameters including breathing rate, heart rate, and the position of the baby during sleep. Through continuous monitoring, any deviation from normal patterns triggers an alarm system, immediately notifying caregivers to take appropriate action, ultimately promoting infant safety and well-being.



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PAPER ID: **ICMTEM/2024/027**

IOT BASED HEALTH MONITORING SYSTEM WITH NODEMCU FOR PAIN AND HEART ATTACK DETECTION

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ABSTRACT

Heart rate monitoring is a vital aspect of maintaining heart health. People from different age groups have different ranges for maximum and minimum values of heart rate, the monitoring system must be compatible enough to tackle this scenario. This project introduces a portable heart rate monitoring system aimed at detecting and preventing heart attacks. The system consists of heartbeat sensor, accelerometer sensor, EDA sensor that is used to detect person heartbeat, body positions of the person such as sitting and standing positions, detects abnormal heart rates and transmitting data via Wi-Fi for remote monitoring. Using an EDA sensor interfaced with a microcontroller, the system alerts users and emergency contacts of abnormal heart rates, leveraging an Android Thingspeak app for communication. The heartbeat limits are set on a system that informs about the high and low rate of heartbeat. It also provides continuous data for analyzing the chance of an attack on a patient. Our prototype enhances patient mobility, enabling continuous monitoring in critical conditions. The system offers both doctors and patients an interactive platform, promoting proactive healthcare management.



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PAPER ID: ICMTEM/2024/028

A REVIEW ON ARDUINO POWERED GAS SENSOR NETWORK FOR HOSPITAL SAFETY AND ENVIRONMENTAL HEALTH

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ABSTRACT

In the past decade, the detection of hazardous substances has become increasingly intricate and crucial for ensuring safety in various environments. To address this challenge, we present a novel sensor system capable of detecting harmful gases such as smoke, benzene, and vapors, while also analyzing their concentrations with precision. The sensor integrates advanced technology to enhance sensitivity and accuracy in identifying these substances, providing real-time data for immediate action. Additionally, the system incorporates a DHT11 sensor to monitor temperature and humidity levels, enabling comprehensive environmental assessment. Utilizing Arduino microcontroller, the gathered data is processed and displayed on an LCD screen, facilitating easy interpretation for users. Moreover, an air purifier is integrated into the system to mitigate detected hazards, ensuring a safer environment. This innovative approach offers a comprehensive solution for efficient monitoring and management of air quality, enhancing safety standards across various sectors.



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PAPER ID: **ICMTEM/2024/029**

A REVIEW ON ELECTROMYOGRAPHY (EMG) PAIN DETECTION AND MONITORING SYSTEM

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ABSTRACT

The potential applications of wearable e-textiles beyond healthcare, such as in sports performance monitoring and rehabilitation. It discusses the benefits of using EMG signals for personalized training programs and injury prevention in athletes. The integration of machine learning algorithms for analysing EMG data is also explored, highlighting the potential for more accurate and efficient monitoring and control of robotic exoskeletons. The challenges and limitations of current wearable e-textile technology, such as the need for improved signal processing algorithms and sensor integration. It emphasizes the importance of interdisciplinary collaboration between engineers, healthcare professionals, and researchers to further advance the field of wearable e-textiles for healthcare and beyond. In conclusion, the text underscores the transformative potential of wearable e-textiles in revolutionizing healthcare and improving quality of life for individuals with mobility impairments or chronic pain. It calls for continued research and development in this area to unlock the full potential of wearable e-textiles for monitoring EMG signals and enhancing human performance and well-being.



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PAPER ID: ICMTEM/2024/030

PV BASED MULTILEVEL INVERTER USING FLYBACK CONVERTER

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ABSTRACT

This project deals with the implementation of inverter which is based on asymmetrical cascaded of bridge producing a 63 level output. With the help of this topology we come to know that a total of 124 switches either MOSFET switches are used. This results in usage of heavy components so to reduce it we decrease the number of DC sources to 5 which now currently as 31 DC sources by binary code we reduce it to 5 DC source and 5 switches[1]. Further the 5 DC sources are reduced to one by implying the fly back converter. This on the whole receives up to 2% of total harmonic distortion (THD).



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AUTOMATIC PHASE ADAPTATION IN THREE PHASE SUPPLY FOR ONLINE INVERTER SYSTEMS

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ABSTRACT

The project titled “Automatic Phase Adaptation in Three-Phase Supply for Online Inverter” introduces a novel solution for ensuring uninterrupted power supply, particularly in critical applications like medical equipment. Utilizing three-phase four-wire supply system, the project comprises several essential components. The “AC Supply Sensing Block” continuously monitors the voltage levels of the three-phase supply, providing real-time data on power quality. The “MATLAB Function block” interprets the data from the sensing block to control circuit breakers, regulating the online inverter battery charging process. The “Online Inverter Battery Charging Block” effectively charges the battery using a buck converter, guaranteeing a stable and dependable power source. The “Circuit Breaker Block” selects the most reliable power source, receiving commands from the MATLAB function block, ensuring seamless transitions. Meanwhile, the “SoC (State of Charge) Block” manages the battery state of charge to maintain safe operating levels. The “Inverter Block” converts DC power into AC power, making it suitable for powering high-priority medical equipment, consistent and uninterrupted power supply. This project integrated approach aims to provide a robust and intelligent solution that automatically adapts to varying power conditions, addressing the critical need for reliable, uninterrupted power in the medical field, ultimately contributing to enhanced patient care and potentially saving lives.



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BORE WELL RESCUE SYSTEM

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ABSTRACT

This project proposes an innovative IoT-based borewell child rescue system that integrates environmental monitoring and robotic intervention to enhance the efficiency of rescue operations. The system employs various components such as ESP8266, DHT11 sensor, gas sensor, ESP32 camera, servo motor with gripper, and an L298N driver controlling a DC gear motor for front and back rotation. The ESP8266 acts as the central communication hub, enabling real-time data exchange between the rescue system and the control center. The DHT11 sensor monitors environmental conditions inside the borewell, providing crucial data on temperature and humidity. The ESP32 camera facilitates live video streaming, offering a comprehensive view of the borewell interior. The servo motor with gripper, controlled by the ESP32, is equipped to handle delicate operations within the confined space of the borewell. To maneuver within the borewell, a robotic system is integrated with a DC gear motor controlled by an L298N driver. This configuration enables precise front and back rotation, allowing the robotic system to navigate through the narrow and complex structure of the borewell. The integration of IoT technologies ensures seamless communication, while the robotic system enhances the precision and effectiveness of the rescue process. Overall, this proposed system deals with the risks associated with borewell rescues, ultimately minimizing response time and increasing the likelihood of successful outcomes.



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A REVIEW ON LOWER LIMB VARICOSE VEIN PAIN DETECTION AND MONITORING SYSTEM

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ABSTRACT

Varicose veins are a common vascular condition with both cosmetic and health implications. Risk factor assessment involves analyzing genetic predispositions, lifestyle factors, and occupation-related risks using machine learning algorithms to predict an individual's likelihood of developing varicose veins. Preventive measures include lifestyle interventions such as regular exercise, leg elevation, and compression stockings, along with educational campaigns to promote healthy living and symptom recognition. Collaboration among healthcare professionals like vascular specialists, radiologists, and primary care physicians is crucial for a holistic approach to varicose vein management, supported by telemedicine platforms for remote monitoring and consultation. The effectiveness of this integrated approach will be validated through clinical trials and real-world studies, focusing on reducing varicose vein incidence, improving patient-reported symptoms, and analyzing cost-effectiveness. Overall, this comprehensive strategy aims to transform varicose vein management by combining imaging technologies, risk assessment, and targeted interventions for better patient outcomes and proactive vascular health management.



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TRANSFORMER MAINTENANCE MONITORING SYSTEM

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ABSTRACT

One crucial part of an electrical distribution system is the transformer. Thus, it's critical to keep an eye out for issues with transformers before they become defective. This system focuses on designing and implementing an embedded system to track and record important distribution transformer properties, such as temperature, voltage, and load currents. It is installed at the distribution transformer location, and the embedded system's analog-to-digital converter is used to record the aforementioned parameters. The system memory is used to process and store the acquired parameters. The system functions to prevent abnormalities or emergencies by acting promptly. The transformers will function more smoothly and this technique will assist detect issues before they become serious. The suggested system is inexpensive, simple to operate, and able to monitor and displaying data using Matlab.



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PAPER ID: ICMTEM/2024/035

WIND GENERATORS AND TURBINES USED FOR WIND POWER GENERATION – A REVIEW

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ABSTRACT

Wind energy is a crucial source of renewable energy. Harvesting wind energy in an effective manner will be very crucial. For this purpose, we are utilizing wind turbines and wind generators. There are different types of wind turbines utilized in practice. Various types of wind generators have also been used in recent years in a similar manner. The main aim behind the present work is to detail more about wind energy generation, and the types of wind turbines and generators used in recent times. It also discusses their compatibility and performance for effective wind power generation



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PAPER ID: ICMTEM/2024/036

SMART SYSTEM TO PREVENT DRUNK DRIVING AND SPEEDING ACCIDENTS USING IOT

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ABSTRACT

At the core of the project is an advanced detection capability powered by state-of-the-art sensors and prevention measures. In this project on identification of drunken or speeding the engine gets locked. The goal is to achieve real-time, accurate identification of instances involving drunken driving and speeding. The project aims to create a dynamic system that can adapt to varying road conditions and user behaviours, providing a reliable and robust detection mechanism. The project aims not only to reduce accidents but also to fundamentally shift the paradigm of road safety. As we stand at the forefront of technological innovation, this project represents a beacon of hope for a safer and more secure future on our roads.



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PAPER ID: **ICMTEM/2024/037**

ADVANCED CONTROL OF A 63-LEVEL MULTILEVEL INVERTER IN A GRID-CONNECTED PHOTOVOLTAIC SYSTEM

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ABSTRACT

This project mainly focus on the development of an advanced power conversion system for grid-connected photovoltaic (PV) installations, with a primary focus on a 63-level multilevel H-bridge inverter. The heart of the project lies in the precise control of the 63-level inverter output, achieved through a multi-carrier offset method implemented with a proportional-integral (PI) controller. This control strategy optimizes the synchronization of the inverter output with the grid, minimizing harmonics and enhancing overall system stability and efficiency. The PV panel output is efficiently processed through a fly back converter, and the resulting energy is fed into the high-performance 63-level inverter. This synergy between the control strategies for the fly back converter and the 63-level inverter ensures the seamless and reliable integration of clean energy into the grid. The proposed control methodologies promise enhanced performance, reduced harmonic distortions, and improved power quality, aligning with the global push towards sustainable and efficient renewable energy utilization. This proposed topology is simulated in MATLAB/Simulink and verified experimentally with a hardware prototype under various conditions.



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PAPER ID: ICMTEM/2024/038

EMERGENCY SYSTEM FOR HEAVY VEHICLE DRIVERS WITH HEART DYSFUNCTION USING MULTISENSOR

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ABSTRACT

Technological ways to detect and monitor driver driving abilities are constantly evolving, with several now in the development, validation testing, or early deployment stages. Previous research examined available fatigue detection and prediction devices and approaches. As the name implies, this project focuses on modern technology in automobiles to make them more intelligent and interactive in order to reduce road accidents. By combining Arduino with multiple sensors, this system becomes more efficient, dependable, and effective. There are very few technologies that detect human behavior in or with cars. In this project, we present a real-time online safety prototype that controls vehicle speed. The system's major components include a number of real-time sensors such as smoke sensor, heart rate sensor, pir sensors, alcohol sensors and IOT module.



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PAPER ID: **ICMTEM/2024/039**

COST EFFECTIVE NON-INVASIVE DIABETICS DETECTION SYSTEM

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ABSTRACT

This project presents a non-invasive diabetes monitoring system designed to track glucose levels using infrared (IR) sensors and display the detected values on an LCD screen. The system incorporates MATLAB and image processing techniques to identify individuals with diabetic retinopathy or glaucoma through machine learning algorithms, particularly Support Vector Machine (SVM). By integrating IR sensors, the system enables real-time glucose monitoring without the need for invasive blood sampling, enhancing patient comfort and compliance with monitoring routines. The LCD display provides instant feedback on glucose levels, aiding users in managing their condition effectively. Furthermore, the application of machine learning algorithms facilitates early detection of diabetic retinopathy and glaucoma, both common complications of diabetes, by analyzing retinal images processed through MATLAB. SVM algorithms offer robust classification capabilities, enhancing the system's accuracy in identifying individuals at risk. Overall, this integrated approach offers a comprehensive solution for diabetes management, providing both glucose monitoring and early detection of associated complications, thereby improving patient outcomes and quality of life.



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PAPER ID: **ICMTEM/2024/040**

E-VECIHLE WIRELESS CHARING USING SOLAR PANEL

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ABSTRACT

The electrification of transportation is a key strategy for mitigating climate change and reducing reliance on fossil fuels. Electric vehicles (EVs) have gained traction as a sustainable alternative to traditional internal combustion engine vehicles. However, challenges such as limited range, long charging times, and the need for infrastructure development remain significant barriers to widespread EV adoption. This paper proposes an innovative solution that combines wireless charging technology with solar panels to enhance the efficiency and sustainability of EVs. By integrating solar panels into the body or roof of the vehicle, renewable energy can be harnessed to supplement grid electricity for charging. Wireless charging pads or coils installed in parking lots, garages, or designated charging stations enable convenient charging without the need for physical connectors or plugs. The integration of wireless charging with solar panels offers several benefits. Firstly, it reduces dependence on grid electricity, thereby lowering carbon emissions associated with EV charging. Secondly, it enhances convenience for EV owners by eliminating the hassle of plugging and unplugging charging cables. Additionally, it promotes energy autonomy, allowing EVs to harness clean energy from the sun for charging, especially in regions with abundant sunlight. However, challenges such as alignment issues, efficiency considerations, and infrastructure investment need to be addressed for widespread adoption. Advanced alignment technology can ensure optimal positioning for efficient charging, while ongoing research focuses on improving the efficiency of wireless power transfer.



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AUTOMATED VEHICLE ACCIDENT DETECTION AND DATA ANALYSIS USING RASPBERRY PI

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ABSTRACT

This research investigates the implementation of an automated system for vehicle accident detection and subsequent data analysis utilizing Raspberry Pi technology. The primary aim of this study is to develop a cost-effective and efficient method for detecting vehicle accidents in Realtime, thereby enabling swift emergency response and reducing accident-related fatalities. The methodology involves equipping vehicles with Raspberry Pi-based sensors capable of detecting sudden changes in acceleration, orientation, and collision impact. Upon detecting an accident, the system triggers an alert mechanism, sending relevant information such as location, severity, and vehicle details to emergency services and designated contacts. Additionally, the collected data are analyzed using machine learning algorithms to identify patterns, trends, and factors contributing to accidents, facilitating targeted interventions and policy recommendations for accident prevention. Key results from the study demonstrate the system's effectiveness in accurately detecting accidents and generating timely alerts, with a high degree of reliability and minimal false positives. The major conclusion drawn from this research is that Raspberry Pi- based automated systems offer a practical and scalable solution for enhancing road safety through efficient accident detection and data-driven analysis. The implications of this study extend to various stakeholders, including vehicle manufacturers, insurance companies, law enforcement agencies, and policymakers, contributing to the advancement of intelligent transportation systems and proactive safety measures.



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PAPER ID: ICMTEM/2024/042

WIRELESS SENSORY FEEDBACK DEVICE FOR REAL-TIME KNEE ARTHRITIS GAIT ANALYSIS AND TRAINING

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ABSTRACT

A system is developed to monitor the gait movement of the patient under study remotely. Patients with problem in their legs after accidents or paralysis attack or minor injury can be monitored using this gait feedback system. Force Sensor Resistors (FSR) is employed in the system to measure the amount of pressure applied in the foot. Bluetooth is used to send an alert to the doctor thus allowing remote monitoring of the patients. The processor gets the reading from the FSR constantly to compare the obtained value. When there is an abnormal change in the readings obtained or the when the value is degraded, the processor send an alert to the physician in charge immediately to his mobile or personal computer that relates to the Bluetooth of the system.



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NEONATAL MONITORING AND PROTECTION ALERT SYSTEMS IN HOSPITALS

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ABSTRACT

Ensuring the safety and security of newborns in hospital environments is a critical concern, necessitating effective monitoring and preventative measures against unauthorized movements. This paper presents a comprehensive Infant Protection System that integrates Radio Frequency (RF) technology, Arduino microcontrollers, and NodeMCU with Thing Speak platform to create a robust solution. The proposed system involves the attachment of a wireless RF transmitter to the infant's ankle, which communicates with an RF receiver monitored by an Arduino UNO microcontroller. Serving as the central processing unit, the Arduino UNO efficiently processes data and monitors the infant's movements in real-time within designated areas of the hospital. In the event of any unauthorized movement or a mismatch between the infant and their designated caregiver, the system triggers immediate alerts using NodeMCU with ThingSpeak integration. NodeMCU facilitates seamless communication with the ThingSpeak platform, enabling remote monitoring and notification functionalities. Hospital staff and security personnel receive real-time alerts via the ThingSpeak platform, allowing for prompt intervention in case of security breaches or emergencies. The integration of NodeMCU with ThingSpeak enhances the system's capabilities by providing a centralized platform for data visualization, analysis, and alert management. Hospital staff can access real-time data and receive notifications on their mobile devices or computers, enabling swift response regardless of their location within the facility. Furthermore, the system includes a buzzer for on-site audible alerts, ensuring that staff members in the vicinity can respond promptly to potential threats. Powering the system is a combination of battery and a power supply unit, ensuring continuous operation and reliability. In conclusion, the proposed Infant Protection System offers a comprehensive solution for enhancing newborn safety in hospital environments. By integrating RF technology, Arduino microcontrollers, and NodeMCU with ThingSpeak, the system provides precise monitoring, immediate alerts, and centralized management capabilities. This approach ensures the security and well-being of infants while offering peace of mind to healthcare providers and parents.



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SOLAR BASED PMBLDC DRIVE SYSTEM FOR WATER PUMPING APPLICATION

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ABSTRACT

Abstract - Our study focuses on a Solar-Powered Permanent Magnet Brush less DC (PMBLDC) Drive System for water pumping applications. We explore the integration of solar photovoltaic technology with the PMBLDC drive to enhance efficiency in off-grid settings. Our work aims to optimize energy extraction and operational efficiency by employing effective control schemes and performance evaluation techniques.



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AUTOMATED TIME-BASED PARKING PAYMENT SYSTEM

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ABSTRACT

The Automated Time-Based Parking Payment System presents an innovative solution to streamline and optimize the process of parking fee collection in urban areas. Traditional parking systems often rely on manual methods of payment, leading to inefficiencies, long queues, and potential revenue losses. This system aims to address these challenges by implementing an automated payment mechanism based on the duration of the parking stay. Upon entry to the parking facility, vehicles are registered and assigned a unique identifier, either through license plate recognition or ticket issuance. Throughout the parking duration, sensors track the vehicle's entry and exit times, accurately calculating the parking fee based on the elapsed time. Users can conveniently pay via various methods such as mobile applications, contactless payment cards, or online, the system provides real-time monitoring and reporting capabilities for parking operators, enabling better management of parking spaces, revenue tracking, and optimization of resources. Additionally, it enhances user experience by reducing waiting times and providing flexibility in payment summary, the Automated Time-Based Parking Payment System offers a modernized approach to parking fee collection, improving efficiency, convenience, and revenue generation for parking operators while enhancing the overall parking experience.



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PREGNANCY WOMEN FETAL HEART RATE AND KICKING MONITORING USING EMBEDDED SYSTEM

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ABSTRACT

Fetal monitoring during pregnancy time is the most important to save the life of the mother as well as the child. we present a device that is used to measure the fetal heart rate during the time of pregnancy. The major component used for this detection is Fetal Digital stethoscope sensor which is to be placed on the abdomen of the pregnant and the signals are processed by the micro-controller used and the accurate fetal heart rate is identified and sent as a text message to the respective mobile phone through the usage of GSM module and also by the usage of MEMS sensor the uterus contraction also be simulated as the output on the desktop. This system is very flexible and low cost helps the patient to monitor the fetal heart rate in home.



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SMART TROLLEY

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ABSTRACT

This research investigates the implementation of an automated system for vehicle accident detection and subsequent data analysis utilizing Raspberry Pi technology. The primary aim of this study is to develop a cost-effective and efficient method for detecting vehicle accidents in realtime, thereby enabling swift emergency response and reducing accident-related fatalities. The methodology involves equipping vehicles with Raspberry Pi-based sensors capable of detecting sudden changes in acceleration, orientation, and collision impact. Upon detecting an accident, the system triggers an alert mechanism, sending relevant information such as location, severity, and vehicle details to emergency services and designated contacts. Additionally, the collected data are analyzed using machine learning algorithms to identify patterns, trends, and factors contributing to accidents, facilitating targeted interventions and policy recommendations for accident prevention. Key results from the study demonstrate the system's effectiveness in accurately detecting accidents and generating timely alerts, with a high degree of reliability and minimal false positives. The major conclusion drawn from this research is that Raspberry Pi-based automated systems offer a practical and scalable solution for enhancing road safety through efficient accident detection and data-driven analysis. The implications of this study extend to various stakeholders, including vehicle manufacturers, insurance companies, law enforcement agencies, and policymakers, contributing to the advancement of intelligent transportation systems and proactive safety measures.



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HEALTH CARE MONITORING SYSTEM USING IoT

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ABSTRACT

This paper presents the design and implementation of a health care monitoring system leveraging Internet of Things (IoT) technology. The proposed system integrates wearable sensors, wireless communication, and cloud computing to continuously monitor vital signs and health parameters of individuals in real-time. The system architecture consists of sensor nodes worn by individuals, a gateway for data aggregation and transmission, and a cloud-based platform for data storage, analysis, and visualization. The wearable sensors collect data such as heart rate, blood pressure, temperature, and activity levels, which are transmitted to the cloud platform via a gateway using wireless protocols such as Bluetooth Low Energy (BLE) or Wi-Fi. The cloud platform processes the data, performs analytics to detect anomalies or patterns indicative of health issues, and provides insights to healthcare providers and users through a web or mobile interface. The proposed system offers several advantages including remote monitoring, early detection of health problems, personalized healthcare interventions, and improved patient outcomes. Experimental results demonstrate the feasibility and effectiveness of the proposed system in real-world healthcare scenarios.



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DESIGN AND PERFORMANCE ANALYSIS OF A THREE-PHASE SINGLE STAGE SOLAR PHOTOVOLTAIC INTEGRATED UNIFIED POWER QUALITY CONDITIONER (PV-UPQC)

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ABSTRACT

This paper presents the design and performance analysis of a three-phase single stage solar photovoltaic integrated unified power quality conditioner (PV-UPQC). The PV-UPQC comprises shunt and series connected voltage compensators linked back-to-back with a common DC-link. The shunt compensator serves a dual role, extracting power from the PV array and compensating for load current harmonics. An improved synchronous reference frame control, based on a moving average filter, is employed for extracting the load active current component, enhancing the PV-UPQC's performance. The series compensator addresses grid-side power quality issues such as voltage sags and swells by injecting voltage in-phase or out of phase with the point of common coupling (PCC) voltage during sag and swell conditions, respectively. This proposed system harnesses the benefits of clean energy generation while enhancing power quality. The steady-state and dynamic performance of the system are evaluated through simulations in Matlab-Simulink under nonlinear load conditions. Furthermore, the system's performance is validated using a scaled-down laboratory prototype subjected to various disturbances including load unbalancing, PCC voltage sags/swells, and irradiation variations.



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LOADCELL FEEDBACK IN RATION DISPENSING SYSTEM FOR ENHANCED EFFICIENCY AND FRAUD PREVENTION

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ABSTRACT

The current system employed by ration shops is bothered with various drawbacks such as fraudulence in ration dispensing system and slow processing speed. Additionally, the lack of sufficient manpower necessitates a significant amount of time to be spent on both the filling and packing of products. In addition, there have been several occasions where specific suppliers of provisions have been discovered to measure goods at a lower weight than what customers have requested. The existing system like RFID and GSM in which fraud detection was not available. In order to overcome these challenges, the current project aims to suggest the incorporation of an automated filling machine capable of detecting fraudulence and meeting all customer demands at the same time. This will consequently lead to a decrease in the amount of time needed per customer. This innovative machine operates based on loadcell feedback, thereby ensuring a high level of weight accuracy and eliminating any possibility of customers being cheated.



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WEARABLE SMARTBELT FOR MITIGATION OF FALL IMPACT IN OLDER ADULT CARE

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ABSTRACT

Falls represent a significant concern among older adults, particularly those residing in care settings, where such incidents can lead to severe injuries and diminished quality of life. Addressing this issue requires innovative approaches that blend technological advancements with practical interventions. Wearable technology has emerged as a promising avenue for mitigating fall-related risks, with smart belts equipped with accelerometer sensors offering real-time detection and intervention capabilities. This project delves into the real-world efficacy of such wearable smart belts in minimizing fall impacts among older adults in care settings. Leveraging advanced sensor technology, the smart belt continuously monitors the wearer's movements and position, enabling prompt detection of falls and immediate alerts to caregivers or healthcare providers. This proactive intervention mechanism aims to reduce the severity of fall-related injuries and enhance overall safety for older adults in care environments. This project explores the real-world evidence supporting the efficacy of a wearable smart belt in mitigating the impact of falls among older adults in care settings. The smart belt, equipped with advanced sensors and impact-detection technology, aims to provide timely interventions to minimize fall-related injuries. Through comprehensive data analysis of real-world scenarios, including fall occurrences and their outcomes. The findings contribute valuable insights into the practical application of wearable technology for fall prevention, offering a promising solution to enhance the well-being of older individuals in care environments.



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MICROCONTROLLER BASED ANESTHESIA MACHINE

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ABSTRACT

The development of a microcontroller-based anaesthesia machine designed to enhance patient safety and procedural efficiency in surgical settings. Traditional anaesthesia machines often lack adaptability and robust safety features, which can pose risks to patient care. In response, our system integrates advanced microcontroller technology to provide real-time monitoring and precise control of critical parameters such as oxygen concentration, flow rates, and pressure levels. The user-friendly interface allows healthcare professionals to intuitively adjust anaesthesia settings, while comprehensive safety mechanisms, including audible and visual alarms for abnormal conditions and fail-safe features, mitigate potential risks. This anaesthesia machine represents a significant advancement, offering improved precision, safety, and usability for clinicians. Future iterations may explore additional features to further enhance performance and adaptability across diverse clinical environments, ultimately contributing to better patient outcomes in surgical procedures.



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DESIGN AND IMPLEMENTATION OF THE SMART PILLBOX HEALTHCARE APPLICATION

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ABSTRACT

The Design and Implementation of a Smart Pillbox for Healthcare Applications project aims to address medication adherence challenges through the integration of IoT (Internet of Things) technology. The smart pillbox provides a solution to the common issue of patients forgetting to take their medication or taking incorrect doses, leading to potential health complications. The smart pillbox employs sensors and connectivity features to monitor medication usage in real-time. Through a user-friendly interface, patients receive timely reminders and notifications regarding their medication schedule. Additionally, healthcare providers gain access to comprehensive data analytics, enabling them to track patient adherence patterns and intervene when necessary. patients can personalize reminder settings based on their medication regimen and preferences. The system notifies users when medication supplies are running low Healthcare providers can access a secure online dashboard to monitor patient adherence trends and identify potential issue Family members or caregivers can remotely monitor medication adherence and receive alerts in case of missed doses. Thesmart pillbox interfaces with mobile devices, allowing for seamless communication and management. By promoting medication adherence, the smart pillbox enhances patient outcomes, reduces healthcare costs associated with non-adherence, and improves overall quality of life. This project contributes to the advancement of healthcare technology by leveraging IoT innovations to address critical healthcare challenges.



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IOT BASED REAL TIME DROWSINESS AND FATIGUE DETECTION

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ABSTRACT

The proposed system presents an IoTbased solution aimed at enhancing the safety of bikers by detecting drowsiness and fatigue in real-time. Integrating Eye Blink Sensors (EBS) within the helmet, along with a Brainwave sensor, enables comprehensive monitoring of the biker's condition. Through Arduino-controlled software modules, the system promptly identifies signs of drowsiness and fatigue, triggering alerts and initiating motor slowdown or stoppage to prevent accidents. By utilizing lowcost, reliable sensors, the system ensures accessibility while promoting the practice of wearing helmets for safety during bike riding. Potential enhancements include integrating machine learning algorithms to improve detection accuracy and incorporating GPS technology for location-based alerts and emergency notifications. Overall, this innovative system has the potential to significantly reduce accidents caused by drowsiness, thereby enhancing biker safety on the roads.



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IOT BASED AUTOMATED PARALYSIS PATIENT HEALTHCARE SYSTEM USING ARDUINO AND GSM

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ABSTRACT

We come across hospitals and NGOs serving paralytic patients who have their whole or partial body disabled by the Paralysis attack. These people in most cases are not able to convey their needs as they are neither able to speak properly nor do they convey through sign language due to loss in motor control by their brain. In such a situation we propose a system that helps disabled person in displaying a message over the LCD by just simple motion of any part of his body which has motion abilities. This system also takes care of the situation where in no one is present to attend the patient and thus sending a message through GSM of what he wants to convey in SMS. There are several instructions of movement gesture sensors presented in the paper in order to assist health officer in helping the paralyzed patient to complete their needs. The user now just needs to tilt the device in a particular angle to convey the message. Thus, by tilting device one can convey message easily. So, this system can help them out to convey a message.



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PAPER ID: ICMTEM/2024/056

A REVIEW ON WEARABLE WIRELESS PHYSIOLOGICAL MONITORING SYSTEM BASED ON BODY SENSOR

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ABSTRACT

The purpose of wearable technology is to use multimedia, sensors, and wireless communication to integrate specific technology into user clothes or accessories. With the help of various sensors, the physiological monitoring system can collect, process, and transmit physiological signals without causing damage. Wearable technology has been widely used in patient monitoring and people's health management because of its low-load, mobile, and easy-to-use characteristics, and it supports long-term continuous work and can carry out wireless transmissions. In this paper, we established a Wi-Fi-based physiological monitoring system that can accurately measure heart rate, body surface temperature, and motion data and can quickly detect and alert the user about abnormal heart rates.



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OPTIMIZED BATTERY MANAGEMENT SYSTEM FOR AUTONOMOUS ROBOT

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ABSTRACT

Autonomous robots are increasing in various domains, ensuring the continuous operation. The main objective of the robot is the efficient management of the battery system. This paper proposes a comprehensive Battery Management system for autonomous robots to optimise energy utilization and ensure safety. The BMS comprises of designed to monitor, control, and maintain the battery health throughout the lifecycle. This includes the State of Charge estimation, cell balancing, temperature monitoring and fault detection systems. BMS incorporates fail-safe mechanisms to prevent overcharging, over-discharging, and thermal runaway, thereby mitigating the risk of battery damage or hazardous situations. The proposed BMS is implemented and validated on a prototype autonomous robot platform, demonstrating its effectiveness in improving energy efficiency, prolonging battery life, and ensuring safe operation in real-world scenarios. Through comprehensive testing and evaluation, the BMS exhibits robust performance across diverse operational environments and enhance the reliability of robotic systems in various applications.



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SMART WATER HEATER

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ABSTRACT

This paper explores the integration of solar energy systems and smart technology in water heaters as a means to enhance energy efficiency and sustainability. With the growing concerns over energy consumption and environmental degradation, there is an increasing emphasis on the development of renewable energy solutions and smart technologies. Solar water heaters have emerged as a viable option for harnessing clean and abundant solar energy for water heating purposes. Additionally, the integration of smart technology allows for better control, monitoring, and optimization of water heater operations, further improving energy efficiency and user convenience. This paper reviews the recent advancements in solar water heater technology and the integration of smart features such as IOT connectivity, machine learning algorithms, and remote monitoring systems. Furthermore, it discusses the potential benefits, challenges, and future prospects of combining solar energy and smart technology in water heaters, highlighting the significance of such integration in achieving sustainable energy goals and reducing carbon emissions.



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PAPER ID: **ICMTEM/2024/059**

AN EFFECTIVE ANFIS-GWO TECHNIQUE FOR DETECTING AND PREVENTING GRAY HOLE ATTACKS ON VANETS

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ABSTRACT

The intelligent transportation system, or VANET, is an application that increases both efficiency and traffic safety. Vehicle communication raises a number of difficulties, especially related to communication security. Malicious assaults involve the ability to destroy or delete data during the interchange of safety information between vehicle nodes, risking commuters' security. It is crucial to identify and prevent these attacks as a result. Therefore, this project proposes an effective ANFIS-GWO technique for detecting and preventing Gray Hole attacks on VANETs. A gray hole assault is a sort of distributed service denial assault that is an extension of a black hole assault in nature. Adaptive Neuro-Fuzzy Inference System (ANFIS) is an Artificial Intelligence (AI) called Artificial Neural Network (ANN). ANFIS integrates neural networks and Fuzzy Logic principles, has the ability to take advantage of both within a single framework. The proposed method is called ANFIS-GWO, which consists of two stages. In the first stage, GWO is used to learn the parameters of ANFIS using the training set. Meanwhile, in the second stage, the testing set is used to evaluate the performance of the proposed ANFIS-GWO method. Its behavior becomes malicious, and it starts dropping selective data packets. The main intention of the gray hole node is to degrade the network's performance. The proposed algorithm is then utilized to enhance the network's efficiency and performance while preventing the gray hole assault. Moreover, extensive performance analysis with the existing authentication schemes shows that the proposed algorithm is better in computation cost, communication cost, and energy cost. This project is implemented with NS2 software.



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GRID TIED EV CHARGING USING HYBRID ENERGY SOURCES WITH VEHICLE TO GRID AND GRID TO VEHICLE OPERATION

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ABSTRACT

Global power consumption is rising, making it vital to look for other sources of energy to solve the impending power crisis. Using grid-synchronized electric vehicles (EVs) is likely to be one way to do this. The whole power system is impacted when several EVs are paired with the grid, leading to imbalances in supply and demand as well as voltage and frequency. We have integrated solar and wind energy in this integration to reduce these concerns. One of the developments in smart grid technology that permits energy exchange between the EV and the grid is vehicle to grid (V2G) technology. The hybrid energy source proposed by this project is used to charge EVs. Here, power from the PV panel, wind turbine, and AC generator is used to charge the EV battery. Any excess energy is then used to fuel the linear and non-linear demands of the subsequent home. A proportional-integral (PI) controller, which is recognized for its dependability and independence from the real system model, is used to maximize the DC voltage extracted from the photovoltaic (PV) panel. The DC voltage is improved overall by the Boost converter's improved DC output. Concurrently, the system incorporates an AC generator to supply extra power to the grid. A three-phase Voltage Source Inverter (VSI) converts an improved output of the Boost conversion process used to convert the electricity from the PV panel into AC power. In order to assure safe current injection into the grid, harmonic components detected in the VSI output are rectified using an LC filter to ensure grid compatibility. In this research, the voltage for the EV battery is adjusted using a bidirectional converter. Electricity from EVs that are not in use may be sent back into the grid for additional purposes. Simulink and MATLAB 2021a are used to simulate and evaluate the proposed method.



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ARTIFICIAL NEURAL FUZZY BASED MPPT FOR HIGH GAIN ZETA CONVERTER FOR STANDALONE PV APPLICATION WITH GALVANIC ISOLATION

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²Associate Professor, Arunachala College of Engineering for Women, Manavilai, Kanyakumari, India.

ABSTRACT

Due to the Photovoltaic (PV) systems being the leading access to the electrical grid, its installation is steadily increasing around the world. A tremendous amount of effort is expended in order for Photovoltaic (PV) systems to function optimally. As a result, the goal of this Project is to achieve stable DC-link voltage of the ZETA Converter using the ANFIS MPPT strategy. In this proposed approach, a ZETA converter is used, which results in improved voltage gain and reduced ripple content of the output voltage and current. An isolation transformer is integrated into the system to provide galvanic isolation. This transformer enhances safety by isolating the output from the high-frequency converter from the PV system and other components. Galvanic isolation prevents the transmission of electrical faults and protects connected loads. The output from the isolation transformer is supplied to a DC load through a rectifier. The rectifier converts the alternating current (AC) output from the transformer into direct current (DC), making it suitable for powering DC loads. To stabilise the converter's output voltage and mitigate the intermittent nature of PV, an intelligent MPPT is used, which also aids in maintaining DC-link voltage without distortions and ripples from the converter. The entire project is validated through a MATLAB simulation 2021a.



Proceedings of **INTERNATIONAL CONFERENCE ON MODERN TRENDS IN ENGINEERING AND MANAGEMENT**



PAPER ID: ICMTEM/2024/062

EYEBALL SENSOR FOR AUTOMATIC WHEELCHAIR FOR PARALYZED PATIENTS

G S. Abinaya Sree¹, N . Predyusha² , C. Sowthily³

^{1,2}, Rohini College of Engineering and Technology.

³Associate Professor, Rohini College of Engineering and Technology.

ABSTRACT

An automatic wheelchair is a mobility-aided device for persons affected by moderate, severe physical disabilities, and chronic diseases as well as elderly. Many people with disabilities do not have the ability to control the powered wheelchair using joystick and hand movements as it is tougher for the person to move and it is software oriented. The proposed method consists of hardware which eliminates the individual's work using eyeball sensor. The proposed model uses an eyeball movement tracking system to control electronic wheel. chair. Once the movement has been processed and it is given to the microcontroller. The microcontroller process depends upon the feed coding and the output is gives in to the driver circuit. Also, the obstacle detection sensors will be connected to give necessary feedback for proper operation of the wheelchair system. All two wheel will be connected to driving circuit that will move to wheelchair based on eyeball movement.



Proceedings of INTERNATIONAL CONFERENCE ON MODERN TRENDS IN ENGINEERING AND MANAGEMENT



PAPER ID: **ICMTEM/2024/063**

SOLAR STREET LIGHT USING CIO BOOST CONVERTER WITH AUTOMATIC SUN TRACKING SYSTEM

P. Prasath¹, J. Udhaya Prabhakaran², M. Rithan Kumar³, E.Maheshwari⁴

^{1,2,3}Department of Electrical and Electronics Engineering, Sri Sai Ram Institute of Technology Chennai, India.

⁴Associate Professor, Department of Electrical and Electronics Engineering, Sri Sai Ram Institute of Technology Chennai, India.

ABSTRACT

In this project the Continuous Input and Output (CIO) power boost converter designed for controlling LED load with solar energy as the input source. The power is derived from the solar panel with the output power rating as 100W. The voltage obtained from the solar panel is always DC voltage, it can be boosted up into high voltage using CIO boost converter. This voltage is stored in a battery for necessary use. It is connected to an inverter to convert the dc source to alternative current source and then it is given to the LED circuit. The solar energy tracking circuit is connected with solar panel to get maximum solar energy. This tracker circuit consist of LDR sensor and servomotor circuit. The efficiency of the battery circuit is improved with CIO boost converter and automatic solar tracking circuit. The desired output voltage is obtained using the ANFIS controller with MPPT algorithm in CIO boost converter. The MATLAB Simulink model is presented to show the simulation results of the above circuit.



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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

One Day National Conference on Advancements in Industrialization & Safety Engineering (AISE – 2024)

A REPORT

Submitted by

Dr.S.Ajith & Mr.I.P.Rakhash



Industrial Safety Engineering

Department of Mechanical Engineering

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Aruthenganvilai, Azhikal Post,

Kanyakumari Dist-629 202, Tamil Nadu.

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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

One Day National Conference on Advancements in Industrialization & Safety

Engineering (AISE – 2024)

Academic Year 2023-24 Even semester

Date: 04.04.2024

Time: 09.00 am to 5.00 pm

Venue: New Seminar Hall

Objectives:

- ❖ To raise awareness about the importance of safety in industrial processes and encourage the adoption of best practices to prevent accidents and occupational hazards.
- ❖ To Facilitate the exchange of knowledge, experiences, and research findings among academics, industry professionals, policymakers and other stakeholders in the field of industrialization and safety engineering.
- ❖ To explore how advancements in technology can be leveraged to enhance industrial processes while ensuring the safety of workers and the surrounding environment.

Target Audience:

- ❖ UG Students
- ❖ PG Students
- ❖ Ph.D Scholars
- ❖ Faculty Members
- ❖ Industry Personnel

Agenda/Program: Attached in Annexure 1

Organizing Committee: Attached in Annexure 2

Registration Link: <https://forms.gle/Ak4WPZtAWQn6F2Ey8>





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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

Speakers/Trainers/Guests (if applicable):

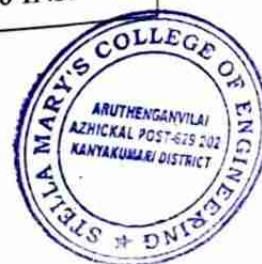
1. Dr.V.Arumugaprabu
Professor & Head
Department of Mechanical Engineering
Kalasalingam Academy of Research & Education
Anand Nagar, Virudhunagar
2. Dr. T.Raja Jeyaseelan
Professor & Head,
Department of Mechanical Engineering,
PET Engineering College, Vallioor.
3. Mr.Sachin Patel
Assistant Manager - Safety,
PI Industries Ltd.
Jambusar, Gujarat

Contact Information:

1. Dr.S.Ajith – 8072882504
2. Mr.I.P.Rakhesh - 9790469389

Fees (if applicable):

OFFLINE MODE			
UG/PG Students 500 INR	Research Scholars 600 INR	Faculty Members 700 INR	Industry Personnel 800 INR
VIRTUAL MODE			
UG/PG Students 250 INR	Research Scholars 300 INR	Faculty Members 350 INR	Industry Personnel 400 INR





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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

Event Description:

The National Conference on "Advancements in Industrialization & Safety Engineering" is a premier event uniting scholars, practitioners, and policymakers to explore the forefront of industrial development and safety practices. Delving into the latest advancements, the conference offers a platform for sharing groundbreaking research, innovative technologies, and best practices in ensuring workplace safety amidst evolving industrial landscapes. With a focus on fostering a culture of safety, sessions will delve into strategies for risk mitigation, regulatory compliance, and sustainability integration within industrial operations. Participants will engage in dynamic discussions, interactive workshops, and networking opportunities, facilitating collaboration and knowledge exchange across diverse sectors. This conference serves as a catalyst for driving forward the intersection of industrialization and safety engineering, guiding stakeholders towards effective solutions and strategies for a safer, more sustainable industrial future.

Key Highlights:

- ❖ Cutting-edge Research Presentations
- ❖ Expert Panel Discussions
- ❖ Technology Showcase:
- ❖ Networking Opportunities
- ❖ Keynote Addresses
- ❖ Publication Opportunities
- ❖ Industry Partnerships

Requirements/Equipment:

Projector, Pointer, Audio/Video visuals, White board & marker

Sponsors/Partners (if applicable):

NA





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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

Promotion and Marketing:

- ❖ SMCE has promoted the event through social media & banners
- ❖ Final year & Third year have given the brochure to Engineering, Arts & Science colleges in Kanyakumari District

Budget (if applicable): Attached in Annexure 3

Details of Expenditure: Attached in Annexure 4

Evaluation/Feedback: Attached in Annexure 5

Acknowledgments:

We extend our heartfelt gratitude to all participants, speakers and attendees who contributed to the success of the National Conference on "Advancements in Industrialization & Safety Engineering." Your enthusiasm, expertise and commitment to excellence made this event a resounding success.





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Event Photos





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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

Letter No: SMCE/ME/2023-24 Even/13

Date: 10.04.2024

To

Dr.T.Raja Jeyaseelan

Professor & Head,

Department of Mechanical Engineering,

PET Engineering College, Vallioor

Dear Sir

Sub: Heartfelt Appreciation for Your Leadership as Conference Chair Reg.,

I am writing to express my sincere appreciation for your outstanding leadership and dedication as the chair of National Conference on Advancements in Industrialization & Safety Engineering (AISE 2024) held on 04.04.2024. The success of the conference would not have been possible without your tireless efforts and commitment to excellence. Your vision and guidance have truly elevated the quality and impact of the conference, leaving a lasting impression on all those who attended.

On behalf of myself and the entire conference community, I would like to extend my heartfelt gratitude for your exceptional leadership and dedication. Thank you once again for your invaluable contributions to AISE 2024. I look forward to the opportunity to collaborate with you again in the future.


For 10.4.24
Organizing Committee


Best Regards
Dr.F.Michael Raj
Head of the Department
Mechanical Engineering

STELLA MARY'S COLLEGE OF ENGINEERING
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Aruthenganvilai, Kallukatti Junction Azhikal Post, Kanyakumari District-629202, Tamil Nadu, South India
DEPARTMENT OF MECHANICAL ENGINEERING

Mobile No. : +91 74027 07772

Letter No: SMCE/ME/2023-24 Even/15

Date: 10.04.2024

To

Dr.V.Arumugaprabu
Professor & Head,
Department of Mechanical Engineering,
Kalasalingam Academy of Research and Education,
Virudhunagar.

Dear Sir

Sub: Heartfelt Appreciation for Your Participation as Chief Guest Reg.,

I am writing to extend my heartfelt appreciation for your gracious presence and invaluable contribution as the chief guest at National Conference on Advancements in Industrialization & Safety Engineering (AISE 2024) held on 04.04.2024. Your participation played a pivotal role in making the event a resounding success and we are truly honoured to have had you join us.

Your insightful keynote address was both enlightening and inspiring, captivating the audience and sparking engaging discussions on "Composite Materials". Your expertise and wisdom provided invaluable guidance to our attendees and left a lasting impression on everyone present.

Thank you once again for your exceptional leadership and sharing your expertise with us. Your participation made a meaningful difference and we look forward to the possibility of collaborating with you again in the future.


For 10.4.24
Organizing Committee


Best Regards
Dr.F.Michael Raj
Head of the Department
Mechanical Engineering

STELLA MARY'S COLLEGE OF ENGINEERING

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DEPARTMENT OF MECHANICAL ENGINEERING

<https://www.stellamaryscoe.edu.in/>

Mobile No. : +91 74027 07773

Letter No: SMCE/ME/2023-24 Even/14

Date: 10.04.2024

To

Mr.Sachin Patel

Assistant Manager - Safety,

PI Industries Ltd.

Jambusar, Gujarat

Dear Sir

Sub: Heartfelt Appreciation for Your Participation as Chief Guest Reg.,

I am writing to extend my heartfelt appreciation for your gracious presence and invaluable contribution as the chief guest at National Conference on Advancements in Industrialization & Safety Engineering (AISE 2024) held on 04.04.2024. Your participation played a pivotal role in making the event a resounding success and we are truly honoured to have had you join us.

Your insightful keynote address was both enlightening and inspiring, captivating the audience and sparking engaging discussions on "Scope of Safety Engineers in Industries". Your expertise and wisdom provided invaluable guidance to our attendees and left a lasting impression on everyone present.

Thank you once again for your exceptional leadership and sharing your expertise with us. Your participation made a meaningful difference and we look forward to the possibility of collaborating with you again in the future.


For 10.4.24

Organizing Committee



Best Regards

Dr.F.Michael Raj

Head of the Department

Mechanical Engineering

Feedback form

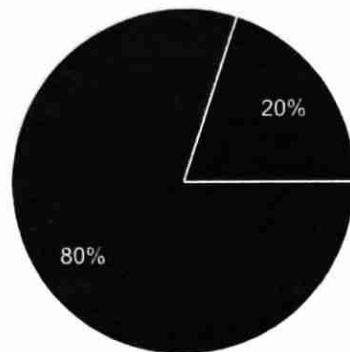
5 responses

Publish analytics

1. Salutation (Mr./Mrs./Ms./Dr./Others)

 Copy

5 responses



- Mr.
- Mrs.
- Ms
- Dr.
- Others

2. Name.

5 responses

Pramoth R

Vignesh M

JUDE CYRIL A

THARUN D V

MIDHUNKUMAR N



3. Name of the Institution

5 responses

ACT Campus, Anna University, Chennai

Bannari Amman institute of technology

BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM

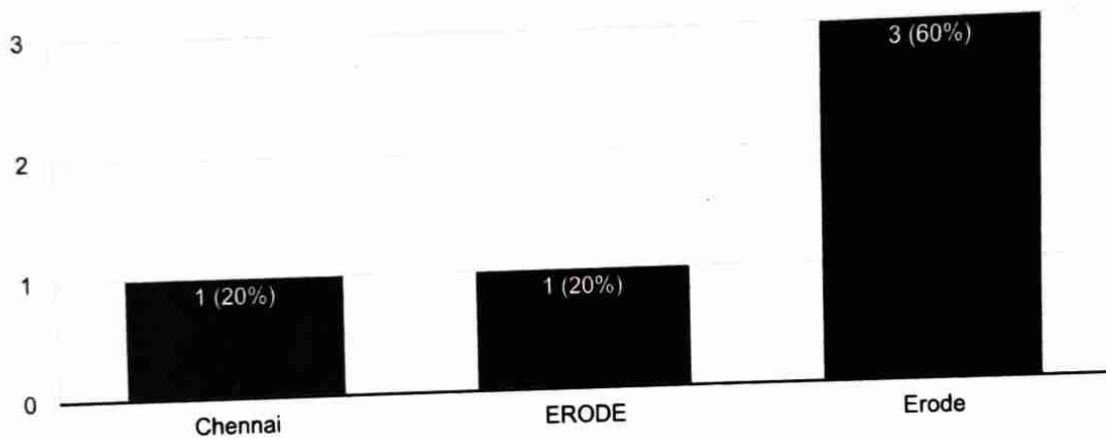
Bannari Amman Institute of Technology, sathyamangalam

BANNARI AMMAN INSTITUTE OF TECHNOLOGY, SATHYAMANGALAM

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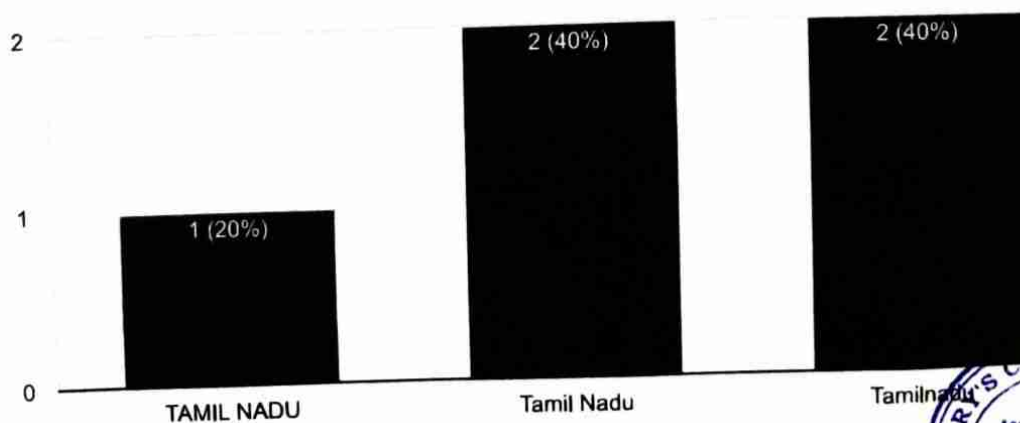
4. Name of the District

5 responses



5. Name of the State

5 responses



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6. Mobile Number

5 responses

9597552280

9566833162

97895 32557

9500546628

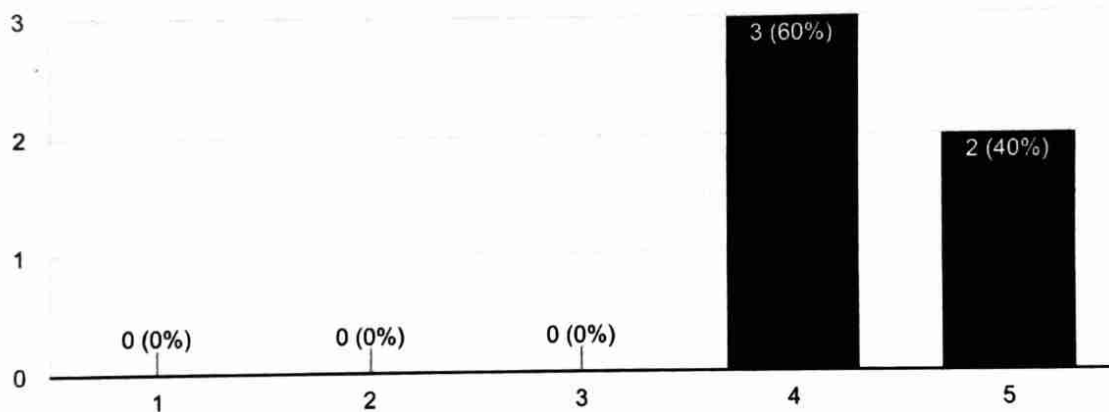
7806825575

Feedback Session

1. How you rate the session

 Copy

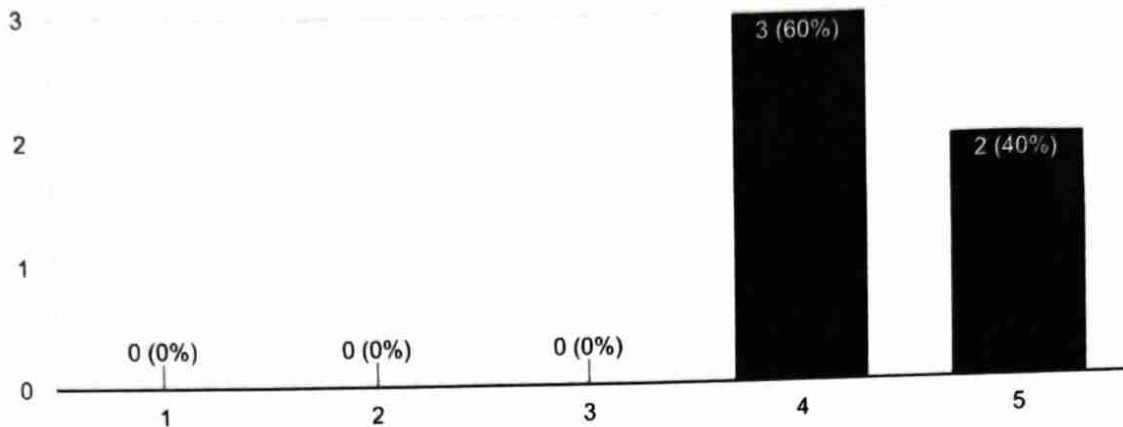
5 responses



2. How you rate the speaker 1

 Copy

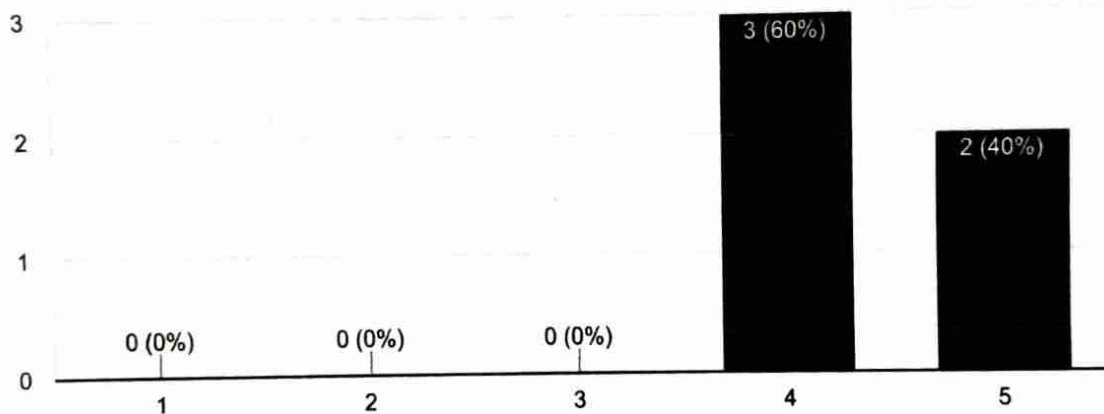
5 responses



3. How you rate the speaker 2

 Copy

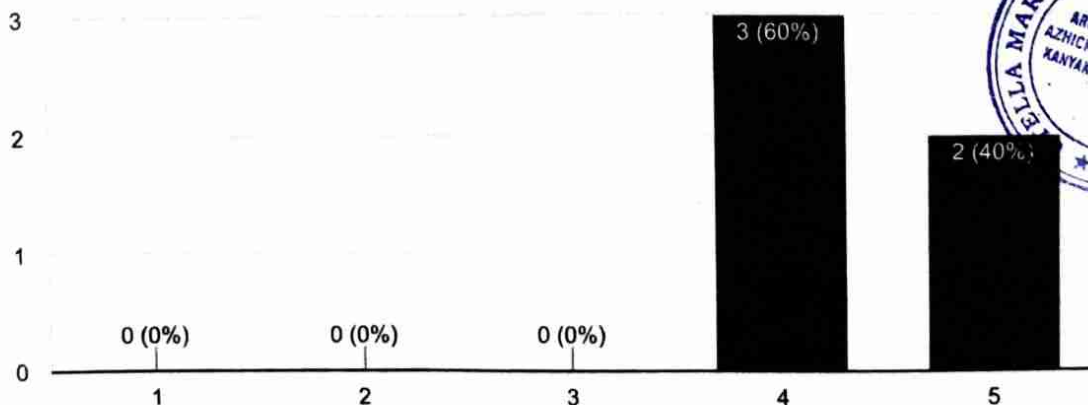
5 responses



4. How you rate the speaker 3

 Copy

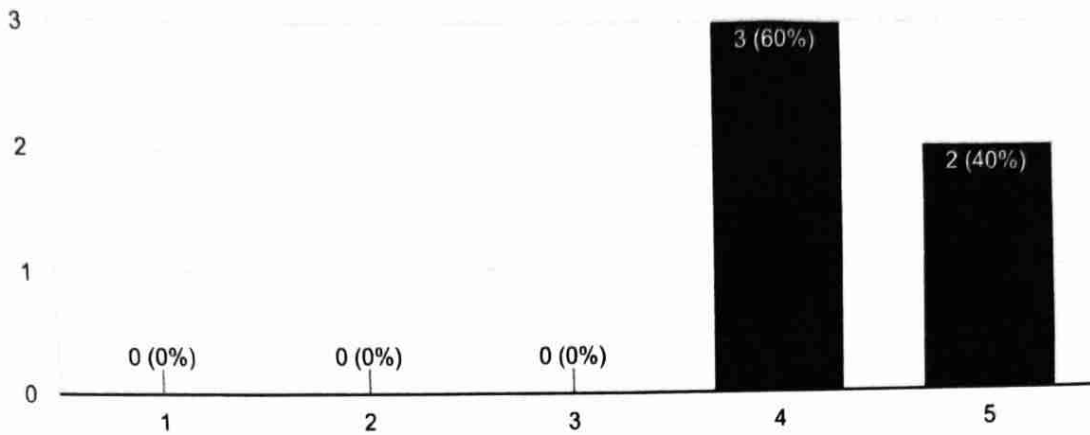
5 responses



5. How you rate the overall session

 Copy

5 responses



6. Suggestions are welcome for the betterment of next program

5 responses

Time Management

Good

NONE

Nil

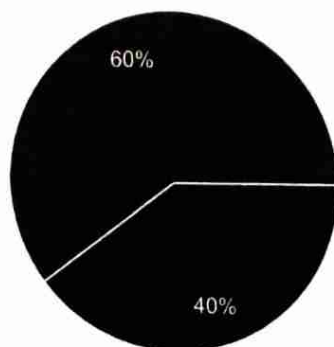
Good

Quiz

1. PSSR stands for

 Copy

5 responses



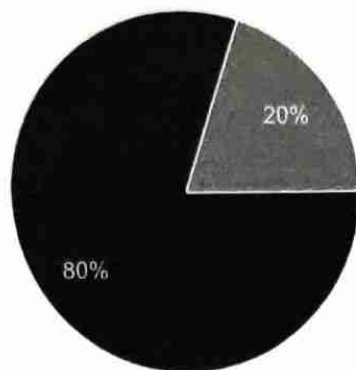
- pre-startup safety review
- Personal Safety and Social Responsibilities



2. EHSMS Implementation as per

 Copy

5 responses

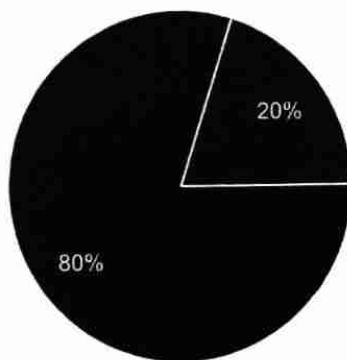


- ISO 45001 & ISO 14001
- ISO 45012 & ISO 14002
- ISO 45003 & ISO 14003

3. The biochar reinforced polymer composites were fabricated successfully by mean of _____

 Copy

5 responses

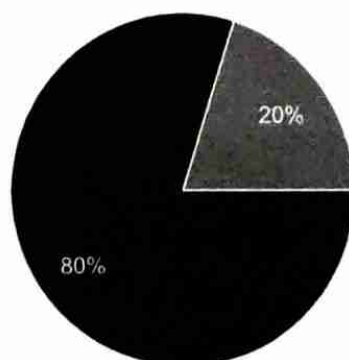


- solution dispersion method
- Pyrolysis
- Direct Combustion

4. Biochar extracted by means of _____ process from zea mays cob.

 Copy

5 responses



- pyrolysis
- Direct Combustion
- Anaerobic Digestion
- Fermentation





Date 06.03.2024

From

Dr. Mr. Mrs. F. Michael RAS

Head,

Department of Mechanical Engineering
Stella Mary's College of Engineering

To

The Chairman
Stella Mary's College of Engineering

Dear Sir

Subject: Permission to hold a Conference/Symposium/Workshop/Faculty Development Programme (FDP)/Seminar
& Submission of Proposal form-Regarding

The Department of Mechanical Engineering is planning to conduct a
One day National Conference/Symposium/Workshop/Faculty Development
Programme (FDP) in the Venue: Mech Seminar hall. The detail of the event is enclosed
herewith for your perusal.

We hope you will give us the permission requested.

Thanking you in anticipation,

Yours faithfully,

[Signature]

1. Name of the Department : Mechanical Engineering

2. Activity:

Seminar	Symposium	Conference	Workshop	FDP
		✓		

(Please tick mark the appropriate box)

3. Geographical Coverage

State	National	International	Campus
	✓		

4. Title of the Seminar / Symposium / Conference / Workshop / FDP

National Conference on Advancements in Industrialization & Safety

5. (i) From

To 04/04/2024

(ii) Total No. of days:

1 (one)

6. Venue (write complete address):

Seminar Hall, Department of Mechanical Engineering,
Stella Mary's College of Engineering

7. No. of participants expected to participate:

Students	Local	Outstation	Foreigner	Total
<u>50</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>50</u>

8. a). Objectives and importance of the Event.

b). Topics will be Discussed.

c). Future outcome.

a) Dynamic platform for expose their
Innovative Idea among researchers
Community

b) Recent Trends in Industrialization and Safety Prospective

c) Improve and shapen the research is accwate Track - For
Researchers and to research.

9. Details of proposed Event
 a) Details of proposed sessions : 3
 b) Name, address of resource persons delivering : Dr. V. Arumugaprabu, KARE
 Keynote/Plenary/Invited Lectures with theme. Dr. T. Raja Jeyaseelan, PET
 Dr. Sachin Patel, PI Industry Gujarat,
 Mr. Dr. A. Azhagurajan, MePCO
 of the organizing
 committee. 1) Dr. D. Senthil Kumar, SSM, (2) Dr. A. Azhagurajan, MePCO
 (3) Dr. S. Janaki, SNS (4) Dr. A. Poobalan, UCEED (5) Dr. K. Harisivasri, et al.,
 10. Name and designation of Chairperson and Members of the organizing
 committee. 1) Dr. D. Senthil Kumar, SSM, (2) Dr. A. Azhagurajan, MePCO
 (3) Dr. S. Janaki, SNS (4) Dr. A. Poobalan, UCEED (5) Dr. K. Harisivasri, et al.,
 11. Name and address of Collaborating Registered/Professional bodies/National agencies /
 registered societies etc. (if any) NIL
 12. Total proposed expenditure (in figures) 36,500/-
 (In words) Thirty Six thousand and Five hundred only
 12.1 Details of Expenditure: Enclosed
 13. Financial Assistance & facilities to be provided by the Institution (Enclose Budget - ANNEXURE-1 &
 Facility Requirement Statement- ANNEXURE-2)
 14. Details of Grants planned to receive (Enclose Statement-ANNEXURE 3)
 15. Technical programme of the Conference/Symposium (Please attach the conference announcement
 brochure).
 16. Name of the Staff Member responsible for submitting the audited statement of accounts for the present
 grant, if sanctioned.
 17. Total grant requested from The Management (in figures) Rs. 14,000/-
 (In words) Fourteen thousand only
 18. Recommendation of the competent authority of the institution / Head of the institution

Name & Signature of the
 Dr. F. MICHAEL, Ph.D.,
 Assoc. Prof.

Head of Department of Mechanical Engineering
 Stella Mary's College of Engineering
 Recommendations of Chairman - 629 202
 This is to certify that

Head of Institution with Seal

- a). Institution has no objection in permitting the Department of _____ to
 organize the Conference/ Symposium on _____
 Institute's premises from _____ to _____ in the
 b). Space and other infrastructural facilities would be extended for organizing the aforesaid
 Conference / Symposium .
 c). the fund allocated Rs. _____ shall be utilized for the purpose for which they are sanctioned.

Signature of

CEO

Vice Chairman

Chairman

9. Details of proposed Event
- a) Details of proposed sessions : 3
- b) Name, address of resource persons delivering : Dr. V. Arumugaprabu, KARE
Dr. T. Raja Jeyaseelan, PET
Dr. Sachin Patel, PI Industry Gujarat.
Keynote/Plenary/Invited Lectures with theme. Mr. A. Azhagurajan, MePCO
10. Name and designation of Chairperson and Members of the organizing committee. 1) Dr. D. Senthil Kumar, SSM, (2) Dr. A. Azhagurajan, MePCO
(3) Dr. S. Janaki, SNS (4) Dr. A. Poobalan, UCEED (5) Dr. K. Harisivasri, et al.,
11. Name and address of Collaborating Registered/Professional bodies/National agencies / registered societies etc. (if any) NIL
12. Total proposed expenditure (in figures) 36,500/-
(In words) Thirty Six thousand and five hundred only
- 12.1 Details of Expenditure: Enclosed
13. Financial Assistance & facilities to be provided by the Institution (Enclose Budget - ANNEXURE-1 & Facility Requirement Statement- ANNEXURE-2)
14. Details of Grants planned to receive (Enclose Statement-ANNEXURE 3)
15. Technical programme of the Conference/Symposium (Please attach the conference announcement brochure).
16. Name of the Staff Member responsible for submitting the audited statement of accounts for the present grant, if sanctioned.
17. Total grant requested from The Management (in figures) Rs. 14,000/-
(In words) fourteen thousand only
18. Recommendation of the competent authority of the institution / Head of the institution

Name & Signature of the
Dr. F. MICHAEL ... Ph.D.,
Assoc. Prof.

Head
Department of Mechanical Engineering
Stella Mary's College of Engineering

Recommendations of Chairman
This is to certify that District, Tamilnadu

Head of Institution with Seal

- a). Institution has no objection in permitting the Department of _____ to
organize the Conference/ Symposium on _____
Institute's premises from _____ to _____ in the
- b). Space and other infrastructural facilities would be extended for organizing the aforesaid
Conference / Symposium .
- c). the fund allocated Rs. _____ shall be utilized for the purpose for which they are sanctioned.

Signature of

CEO

Vice Chairman

Chairman



STELLA MARY'S COLLEGE OF ENGINEERING
ARUTHENGANVILAI, KALLUKATTI JUNCTION, AZHIKAL POST, KANYAKUMARI DISTRICT-629202
 Department of Engineering

ANNEXURE-1

1. BUDGET FOR CONFERENCE

BUDGET FOR CONFERENCE		YEAR	20	-20	(ODD/EVEN)
INVITATION, POSTER DESIGN and DISPATCH		Quantity	Amount	Total Amount	
Invitation			-	-	
Invitation Printing Charge			-	-	
Brochure Design			-		
Postal Charge					
Cover (A4 Size)					
Covering Letter					
TOTAL AMOUNT :					
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE		Quantity	Amount	Total Amount	
Shawl		-	-	-	
Chief Guest Memento		2	500	1000/-	
Chief Guest Travelling Charge,		-	-	1000/-	
TOTAL AMOUNT :					
STAGE AND DECORATION COMMITTEE		Quantity	Amount	Total Amount	
STAGE AND DECORATION COMMITTEE(Stage Decoration with flowers)			250	250/-	
Chairs- 150		-	-	-	
Banners		2	1000	2,000/-	
PA System		-	-	-	
TOTAL AMOUNT :				2,250/-	
TECHNICAL COMMITTEE		Quantity	Amount	Total Amount	
Remuneration to Chair Persons		3	5000 + 2500 + 1000	8,500/-	
Kit (File, Scribbling pad & Pen)		50	80	4,000/-	
A4 Sheet Papers (Bundle)		-	-	-	
TOTAL AMOUNT :				12,500/-	
CERTIFICATE COMMITTEE		Quantity	Amount	Total Amount	
Certificate Printing & Design		200	13	2,600/-	
Cash Prize		-	-	-	
Prize (Poster presentation, Circuit Debugging, Technical quiz)		-	-	-	
TOTAL AMOUNT :				2,600/-	
REFRESHMENT & FOOD COMMITTEE		Quantity	Amount	Total Amount	
Tea, Snacks for Participants and Our Students (FN & AN)		80	25	2000/-	
Food (Participants and Our Students)		80	150	12,000/-	
TOTAL AMOUNT :				14,000/-	
OTHER EXPENSES		Quantity	Amount	Total Amount	
Miscellaneous Expenses	Chief guest lunch + other expenses			4,150	
TOTAL AMOUNT :				4,150	
Summary				4,150	

Summary

Committee Proposed Expenses		Amount(Rs)
INVITATION, POSTER DESIGN and DISPATCH COMMITTEE		
RECEPTION, REGISTRATION AND HOSPITALITY COMMITTEE		
STAGE AND DECORATION COMMITTEE		1000/-
TECHNICAL COMMITTEE		2250/-
CERTIFICATE COMMITTEE		12,500/-
REFRESHMENT & FOOD COMMITTEE		2,600/-
OTHER EXPENSES		14,000/-
TOTAL AMOUNT		4,150
Amount Collected from Participants (5 X 500)	6000 (10 X 250)	36,500/-
Amount Collected from our Students (35 X 500)		2,500/-
Expected Sponsorship from supplier		17,500/-
Balance Amount Required		2,500/-
		22,500/-
		14,000/-

2. Enclose-Facility Requirement Form- ANNEXURE-2

3. Details of Grants planned to receive ANNEXURE-3

3.1 Contribution from Students (Upon approval from Management)

Sl. No.	Semester	Amount per Student	Total (in Figures)	(In words)
1	S1/S2	-	-	-
2	S3/S4	-	-	
3	S5/S6	-	-	
4	S7/S8	-	-	

3.2 Participant fee in case of Conference/Symposium/Workshop/FDP

Sl. No.	No. of Participants Expected	Amount to Receive (in figures)	(In words)
	50 { 40 - offline } x 500 10 - Online } x 250	20,000/- 2,500/- 22,500/-	Twenty thousand only Two thousand five hundred only

3.3 Details of grant from Sponsors

Sl. No.	Name & Address of Sponsor	Grant to Receive (in figures)	(In words)
	-	-	-

3.4 Details of grant planned to get from Professional Societies for the conduct of the event

Sl. No.	Name & Address of Professional Societies	Grant to Receive (in figures)	(In words)
	-	-	-

3.5 Total Grant planned to receive

Sl. No.	Cumulative total of all the Incomes	Grant to Receive (in figures)			(In words)
		From Students & participants	Other Sources	Institution	
3.1	Contribution from Students	-	-	-	
3.2	Participant fee	22,500/-	-	-	
3.3	Details of grant from Sponsors	-	-	-	
3.4	Details of grant planned to get from Professional Societies	-	-	-	
3.5	Contribution from Institution	10,000/-	-	10,000/-	
3.6	Total Grant planned to receive				

Signature of Secretary
Association of

Faculty in Charge
Department of.....

Principal

Head of Department
Department of Mechanical Engineering
Stella Mary's College of Engineering
Aruthanganvilal, Azhikal Post
Kanyakumari District-629 202, Tamil Nadu



Contact

Student Coordinators

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Location

Stella Mary's College Of Engin...

Aruthengavilai, Kallakurichi Junction,
Aruthengavilai, Tamil Nadu 629202,
India

4.2 ★★★★★ 145 reviews

View on Google Map

Stella Mary's College
Of Engineering
Aruthengavilai,
Kallakurichi
Junction

Stella Mary's
Mechanical Department
Aruthengavilai,
Kallakurichi
Junction

Stella Mary's CSI Block
Aruthengavilai,
Kallakurichi
Junction

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Mrs. Sumitha C Judeson, Vice Chairman
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Mr. J. Starlin Deva Prince, AP / Mech
Mr. E. Bravin Daniel, AP / Mech
Mr. P. Vijayan, AP / Mech
Mr. E. Prakash, AP / Mech

ADVISORY COMMITTEE

Dr. D. Senthil Kumaran, SSM Institute of Engineering and Technology, Dindigul
Dr. A. Azhagurajan, Mepco Schlenk Engineering College, Sivakasi
Dr. S. Janaki, SNS College of Technology, Coimbatore
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Dr. P. Saravanan, Vedavyasa Institute of Technology, Malappuram, Kerala.
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NATIONAL CONFERENCE ON ADVANCEMENTS IN INDUSTRIALIZATION & SAFETY ENGINEERING (AISE - 2024)

04-04-2024



Organized by

Industrial Safety Engineering

Department of Mechanical
Engineering



STELLA MARY'S COLLEGE OF ENGINEERING

[Approved by AICTE, New Delhi, affiliated to Anna University, Chennai,
Accredited by NAAC & Accredited by NBA (Mech & CSE)]
Aruthengavilai, Kallakurichi Junction, Aruthengavilai Post, Kanyakumari District -
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Mr. Sachin Patel

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PI Industries Ltd.

Jambusar, Gujarat

DEADLINES

Abstract Submission : 25 March 2024 (Extended)

Notification of Abstract acceptance : 28 March 2024

Virtual Presentation Registration : 31 March 2024

REGISTRATION FEES

UG/PG Students	Research Scholars	Faculty Members	Industry Personnel
OFFLINE MODE			
500 INR	600 INR	700 INR	800 INR
VIRTUAL MODE			
250 INR	300 INR	350 INR	400 INR

PAYMENT DETAILS

Bank Name: Union Bank of India

A/C Name: Association of Mechanical
Engineering Department

A/C No. : 649801010050071

IFSC Code: UBIN0564982

Scan here



CONTRIBUTION TRACKS

Track 1

- Industry 4.0 and Smart Manufacturing
- Digital Transformation in Industrial Operations
- Green Manufacturing
- Advanced Materials and Manufacturing Technologies
- Sustainable Industrialization
- Supply Chain Optimization and Logistics Management
- Industrial Robotics and Automation
- Agile & Lean Manufacturing
- Digital Twin and Virtual Manufacturing
- Alternate fuels
- Sustainable Materials

Track 2

- Safety Engineering in Hazardous Industries
- Occupational Health & Safety Management Systems
- Hazard Identification & Risk Assessment
- Safety Culture and Behavioral-Based Safety
- Emergency Preparedness and Response
- Human Factors and Ergonomics
- Safety Training and Education
- Health and Safety Regulations and Standards
- AI/ML in Safety Management
- VR in Accident Recreation
- Predictive Analytics

GUIDELINES - SUBMISSION OF ABSTRACTS

Abstracts only in English are accepted. It should not exceed **300 words**

Title, Name of authors, Affiliation,

Corresponding author email is mandatory

Font style should be **Times New Roman** (12 size), single space. (IEEE Format)

Send your abstracts as **MS-word** document to **conferencemech@stellamaryscoe.edu.in**

Selected abstracts will be featured in the esteemed conference souvenir with ISBN, providing a platform for authors to showcase their research contributions to a wider audience.

ABOUT

INSTITUTION

Stella Mary's College of Engineering is affiliated to Anna University, Chennai, and approved by AICTE, New Delhi. It is promoted by the Nova Educational Trust & established by the well-known business entrepreneur of Kanyakumari District, Dr. Nazerath Charles in the year 2012. The institution is accredited by NAAC in the year 2020 and the Departments of Mechanical Engineering and Computer Science & Engineering are accredited by NBA in the year 2022. The institution offers six UG programmes & three PG programmes. The institute is recognized with 4-star rating by Institution's Innovation Council and MSME incubation Centre.

DEPARTMENT

The Department of Mechanical Engineering of Stella Mary's College of Engineering was established in 2013 and thrives to accomplish its vision. The Department offers two programs such as B.E in Mechanical Engineering & M.E in Industrial Safety Engineering. ISE is a specialized program that focuses on ensuring the safety and well-being of workers, equipment and the environment within industrial settings. The graduate shall be a Safety officer, Safety Auditor, Safety Manager, HSE Engineer and HSE Consultant. The Department organizes frequent industrial visits, seminars, guest lectures, workshops, etc. to enhance the subject knowledge.

CONFERENCE

National Conference on Advancements in Industrialization & Safety Engineering (AISE 2024) serves as a dynamic platform for professional researchers and industry leaders to explore the latest innovations and best practices in industrialization and safety engineering. As industries continue to evolve and expand it is imperative to stay abreast of cutting-edge technologies, methodologies and regulations to ensure optimal efficiency, productivity and safety standards. Throughout this conference, attendees have the opportunity to engage in insightful discussions, exchange knowledge and experiences and foster collaborations aimed at driving forward the industrial landscape while prioritizing the well-being and safety of workers and the environment.

