St. XAVIER'S
CATHOLIC COLLEGE OF ENGINEERING
(Autonomous)
Chunkankadai, Nagercoil - 629003
Kanyakumari District, Tamil Nadu

Department of ELECTRICAL and ELECTRONICS ENGINEERING

e CONNECT

2022 - 2023

e - Newsletter

President

Dr. S. V. Kayalvizhi, M.E,Ph.D

Professor & Head

Editor

Dr. S.V. Kayalvizhi, M.E,Ph.D

Special Contributors

Website

Er. M. Abragam Siyon Sing, M.E, (Assistant Professor)

Faculty Advisor

Er. P. Suji Garland, M.E, (Assistant Professor)

Technical Support

Mr. G. Sahaya Glitus, (Skilled Assistant)

Student representatives

Siva Prasad.R, Mabish M.B. (IV-EEE)

Asker Stephin S,Godwin.J.P (III-EEE)

Sree Ram Vignesh K S,Jenin. J (II-EEE)

College Vision, Mission, Slogan, Quality Policy, Objectives and Values

St. Xavier's Catholic College of Engineering

Vision	Mission
To be an institution of eminence of optimal human development, excellent engineering education and pioneering research towards developing a technically-empowered humane society.	To transform the (rural) youth into top class professionals and technocrats willing to serve local and global society with ethical integrity, by providing vibrant academic experience of learning, research and innovation and stimulating opportunities to develop personal maturity and professional skills, with inspiring and high calibre faculty in a quality and serene infrastructural environment.
Slogan	**Quality policy**
Towards a technically-empowered humane society.	Attaining global eminence, by achieving excellence in all that we do, in life, education and service.

Objectives	Values
To transform our students into fully-functioning human persons and empowering leaders with autonomy and passion for continuous self-learning. To equip them with contemporary scientific and technical knowledge with student centred teaching methods. To animate them into pioneering researchers and investors. To train them to excel with cutting edge technical, entrepreneurial and managerial skills for a successful career. To expose them to challenging opportunities of self-discovery and to commit themselves to lead a value-based life of humane service. To recruit faculty who inspire the students with their passion for knowledge and transmit knowledge to the students by student-centred creative and innovative teaching and learning methods, lead them by example in high-end researchers, and edify the students with their life of integrity and ethics. To provide standard infrastructure, serene and stimulating	Efficiency that leads to Excellence Excellence that leads to Eminence Genuineness that leads to authenticity Transparency that leads to credibility Person centeredness that leads to family-ness Appreciation that leads to high motivation Altruism that leads to humane service Critical thinking that leads to scientific approach Fidelity that leads to responsibility Knowledge that leads to wisdom Innovative research that leads to inventions Hard work that leads to achievements Eco friendliness that leads to protection of nature Aesthetic campus that leads to serene environment Fiscal

environment that is most conducive to learning. To develop avenues of continuous and responsive collaboration with stakeholders for the optimal development of the students and institution.	discipline that leads to economic sustainability Feedback that leads to responsivity Spirituality that leads to committed service.

Department Vision Mission PEO PO PSO
Program: B.E. Electrical and Electronics Engineering.

Vision	
	Producing globally competent professionals, innovative researchers and successful entrepreneurs in the field of Electrical and Electronics Engineering for developing a technically empowered humane society
Mission	
M 1	To impart high quality technical education in Electrical and Electronics Engineering with high calibre faculty members, excellent infrastructure and stimulating environment
M 2	To lead the students to learn and practice technologies that are prevalent in the related industries
M 3	To introduce the students to the latest concepts and innovations through technical gatherings and research collaborations
M 4	To inculcate ethical values, team spirit and leadership qualities to meet the social challenges and needs
Program Educational Objectives (PEO)	
PEO 1	Build a solid foundation in Mathematics, Science, Engineering and Soft Skills for diverse career and persistent learning
PEO 2	Engage in life long process of learning and research to keep themselves abreast of new developments in the field of Electrical and Electronics Engineering
PEO 3	Have an ability to work in multi- disciplinary environment
PEO 4	Practice their profession conforming to ethical values and environmentally friendly policies
PEO 5	Model, design and develop a system and component or process the same to meet the
Program Outcomes (PO) (with Graduate Attributes)	
PO 1	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO 6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design

	documentation, make effective presentations, and give and receive clear instructions.
PO 11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to ones own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
PO 12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
Program Specific Outcomes (PSO)	
PSO 1	Utilize the Technological advancements in the field of modern Power Systems and formulate reliable and feasible solutions towards the eco-friendly and challenging environment.
PSO 2	Design and analyze fundamental Electronics and Embedded systems for real-world problems and develop smart products.
PSO 3	Apply recent Technology to control Electrical Machines with the aid of solid state devices to enhance energy conservation and sustainability.

Acknowledgement

We express our heartfelt thanks and gratitude to our staff, students and well wishers, without whose cooperation e-connect wouldn't have been a reality.

Dr. S. V. Kayalvizhi

From

HOD/Editors desk

Dear Readers,

I am excited to share with you the latest edition of our department newsletter, which highlights the remarkable progress and achievements we've made together. This publication offers a closer look at the events, initiatives, and milestones that reflect the dynamic and vibrant spirit of our department.

Our collective efforts continue to shape an environment of academic excellence, innovation, and community. From groundbreaking research to enriching student experiences, we are committed to fostering a place where everyone can thrive. It’s truly inspiring to witness how our students, faculty, and staff continuously strive to push boundaries and contribute meaningfully to their respective fields.

As we look ahead, I am optimistic about the opportunities and challenges that await us. Together, we will continue to build on our successes and create new pathways for growth and collaboration.

Thank you to everyone who contributed to this newsletter, and for your ongoing dedication to the success of our department. I hope this edition inspires you as much as it has inspired all of us.

Warm regards,
Dr. S. V. Kayalvizhi
Head of Department/Editor
Electrical and Electronics Engineering

About the department
Programs offered

DEGREE	PROGRAMME	INTAKE
B.E	Electrical & Electronics Engineering	60
M.E	Power Electronics & Drives	**12**
Ph.D. (Research)	Electrical & Electronics Engineering	

RESEARCH ACTIVITIES

Dr. A. Darwin Jose Raju

- Guided UG students Jeedith Melfhiya and Dona Jobin in their research on "IoT-Based Smart Battery Management System" project during the academic year 2022–2023.

Dr. J. Merry Geisa

- Supervised PG student Ajin Raj D on the research "Fuzzy Logic Controller-Based Performance Enhancement of Photovoltaic System" project, in the academic year 2022–2023.

Dr. S.V. Kayalvizhi

- Guided PG student Rithu S Kumar in her research "Fuzzy Logic Control for Energy Management of Hybrid Electric Vehicle" project during the academic year 2022–2023.
- Guided UG students Alan and Darryl Went on their research project "E-Bicycle" project in the academic year 2022–2023.

Er. Vinil Dani

- Supervised UG students Siva Prasad, Arun G, Sujith, and Adhil in their research "IoT-based Appliances Control for the Disabled Using an Eye Blink Sensor" project during the academic year 2022–2023.

Er. P. Suji Garland

- Guided UG students M. Ahil, R.S. Altrin, and V. Blessed John on their research "Railway Track Monitoring System" project during the academic year 2022–2023.
- Guided UG students X. Hingson, J. Jebin, J. Flex Roy, and S.R. Vignesh on the research "Design and Development of Surveillance for the Mining Industry" project in the academic year 2022–2023.
- Supervised UG students Felix Roy J and Hingson X on their research project "Design and Development of Surveillance for the Mining Industry," which received the NIT Kozhikode National Award (ISTE) in the academic year 2022–2023.

Dr. Jain B. Marshel

- Guided UG students Kerson Jones F, Sanjeev Mugunthan A.V, Shijo S, and Rexlin Jebin R on their research "Development of Voltage Stability Assessment Toolbox in SCILAB" project, in the academic year 2022–2023.

JOURNAL PUBLICATIONS

Dr. M. Marsaline Beno

- M. Marsaline Beno, Leon Bosco Raj Published "Modeling and Control of Parallel Hybrid Electric Vehicle Using Sea-Lion Optimization" in *Intelligent Automation & Soft Computing* by Tech Science in 2022. The paper is indexed in SCI with an impact factor of 2.5.

- M. Marsaline Beno and A. George Ansfer authored "Improving the Efficiency of HEV Electronic Applications Using CAN-BUS Communication," published in *Intelligent Automation & Soft Computing* by Tech Science in 2022. The paper is indexed in SCI with an impact factor of 2.5.

- V. Jesus Bobin ,M. Marsaline Beno authored "Performance Analysis of Optimization Based FOC and DTC Methods for Three-Phase Induction Motor," published in *Intelligent Automation & Soft Computing* by Tech Science Press in 2022, indexed in SCI with an impact factor of 3.401.

Dr. S. S. Selva Pradeep

- Published "Hybrid Sensorless Speed Control Technique for BLDC Motor Using ANFIS Automation" in *Intelligent Automation & Soft Computing* by Tech Science in 2022. The paper is indexed in SCI with an impact factor of 2.5.

- S.S. Selva Pradeep and M. Marsaline Beno published "Hybrid Sensorless Speed Control Technique for BLDC Motor Using ANFIS Automation" in *Intelligent Automation & Soft Computing* by Tech Science Press in 2022, indexed in SCI with an impact factor of 1.647.

Dr. V. Jesus Bobin

- Marsaline Beno authored a paper on "Performance Analysis of Optimization Based FOC and DTC Methods for Three-Phase Induction Motor," published in *Intelligent Automation & Soft Computing* by Tech Science in 2022, indexed in WOS with an impact factor of 2.5.

Er. Leon Bosco Raj

- M. Marsaline Beno, Leon Bosco Raj Published "Modeling and Control of Parallel Hybrid Electric Vehicle Using Sea-Lion Optimization" in *Intelligent Automation & Soft Computing* by Tech Science in 2022. The paper is indexed in SCI with an impact factor of 2.5.

Dr. A. George Ansfer

- M. Marsaline Beno and A. George Ansfer authored "Improving the Efficiency of HEV Electronic Applications Using CAN-BUS Communication," published in *Intelligent Automation & Soft Computing* by Tech Science in 2022. The paper is indexed in SCI with an impact factor of 2.5.

Dr. A. Darwin Jose Raju

- A. Darwin Jose Raju ,J.G. Benny Jackson, J.M. Jerlin Priya, and P. Lovelin Auguskani, published "Smart Cold Chain Monitoring and Alert System for Vaccine Carrier" in *Periodico di Mineralogia* by Edizioni Nuova Cultura in 2022. The paper is indexed in other databases with an impact factor of 0.78.
- A. Darwin Jose Raju ,S. Solai Manohar, and A. Annie Steffy Beula published "A Sizing Methodology of Resonant Spiral Inductor Position Sensor for Sliding Door Application" in the *Journal of Electrical Engineering & Technology* by Springer in

2022, indexed in SCI with an impact factor of 1.528.

- A. Darwin Jose Raju,A.S. Karthika, Kavyashree Prakashan, and R. Ankayarkanni, published "Reframing the Possibilities in Healthcare Using Blue Brain Technology" in the *BOHR International Journal of Computer Science* in 2022. The paper is indexed in Google Scholar.
- A. Darwin Jose Raju ,C. Seldev Christopher, A. Subitha, J. Bright Jose, A.S. Karthika, and S.L. Krishna Priya, published "Welfare of Education in Kanyakumari District" in the *BOHR International Journal of Finance and Market Research* in 2022, indexed in Google Scholar.
- A. Darwin Jose Raju ,A.R. Gayathri, A. Annie Steffy Beula and M. Mary Synthia Regis Prabha D.M. published "An Efficient SEPIC-Zeta Converter with Adaptive Pi Controller for Grid-Tied Applications" in *Periodico di Mineralogia* in 2022, indexed in other databases with an impact factor of 0.78.
- A. Darwin Jose Raju ,Jeedith Melfhiya R.B and Dona Jobin A.K published "Railway Track Fault Detection System" in the *Journal of Advances in Communication Engineering and Its Innovations* by MAT Journals Pvt. Ltd. in 2022, indexed in Google Scholar.

Dr. J. Merry Geisa

- J. Merry Geisa, Pon Thai L.T. published "Classification of Microscopic Cervical Blood Cells Using Inception ResNet V2 with Modified Activation Function" in the *Journal of Intelligent & Fuzzy Systems* by IOS Press in 2022, indexed in WOS with an impact factor of 1.737.

Dr. M. Germin Nisha

- M. Nisha published "Optimum Tuning of Photovoltaic System via Hybrid Maximum Power Point Tracking Technique" in *Intelligent Automation & Soft Computing* by Tech Science Press in 2022, indexed in SCI.
- M. Germin Nisha **,**R. Anuja and T.S. Sivarani published "Optimal Tuning Procedure for FOPID Controller of Integrated Industrial Processes with Deadtime" in the *Bulletin of the Polish Academy of Sciences* in 2022, indexed in SCI.
- M. Germin Nisha**,** Jegatheesh and N. Kopperundevi published "A Novel ANFIS-Based SMC with Fractional Order PID Controller" in *Intelligent Automation & Soft Computing* by Tech Science Press in 2022, indexed in SCI.

CONFERENCE REPORT

Dr. A. Darwin Jose Raju

- A. Darwin Jose Raju ,S. Solai Manohar and A. Annie Steffy Beula, presented a paper titled "A Behaviour Modelling and Analysis of Lithium-Ion Battery" at the 2023 2nd International Conference for Innovation in Bangalore, India. The paper was published with DOI: 10.1109/INOCON57975.2023.10101040.

Dr. J. Merry Geisa

- Presented a paper titled "Comparison Study of Feature Descriptors Based Emotion Recognition with Multiple Machine Learning Algorithms" at Arunachala College of Engineering for Women as part of the Multidisciplinary Research and Innovation national conference in 2023.
- Presented a paper titled "A Novel Deep Learning Method for Classifying COVID-19 Images" at Arunachala College of Engineering for Women in the Multidisciplinary Research and Innovation international conference in 2023.

Er. Almond D'Souza

- Presented a paper titled "Ground Water Investigation" at the Nichie International Conference in 2023.
- Presented a paper titled "Detection of Underground Objects Using GPR" at SXCCE, as part of an international conference, in 2023. The conference proceedings have ISSN 978-81-962906-0.
- Presented a paper titled "Antenna Designing for Ground Penetrating Radar" at the International Conference of Energy Efficient Technologies in 2023. The paper is published with ISSN 978-81-962906.

Er. W. Vinil Dani

- W. Vinil Dani ,Siva Prasad R, Arun G. I, Adhil A, and Sujith S.S., presented a paper titled "Embedded System-Based Hand Gesture-Controlled Wheelchair" at the International Conference of Energy Efficient Technologies in 2023. The paper is published with ISSN 978-81-962906.

Er. S. Shiny

- S. Shiny and Dr. C.R. Berlin Selva Rex, presented a paper titled "Power Performance and Emission Analysis of Outboard Diesel Engines by Use of Waste Cooking Oil Biodiesel" at ICATCHCOME 2023, an international conference held online in 2023. The paper is published with DOI: ICATCHCOME0.2023.10074458.
- S. Shiny and Dr. M. Marsaline Beno, presented a paper titled "Efficiency Improvement in Smart Grid Using Enhanced Chaotic Crow Search Optimisation" at the Advanced Computing and Communication Technologies International Conference in 2023. The paper is published with DOI: 10.1109/ACCTHPA57160.2023.10083368.

FUNDED PROJECTS

Dr. M. John Bosco

- Applied for a research project titled "Renewable Tiny Hydro Dual Access Power Plant for R" under the Science and Technology category to the Ministry of Micro, Small & Medium Enterprises on November 14, 2022. The project is currently in the applied stage.
- Submitted a research project titled "Sustainable Development in Smart Agro"

under the Science and Technology category to the Ministry of Micro, Small & Medium Enterprises on October 14, 2022. The project is in the applied stage.

- Successfully completed a research project titled "High-Pressure Automatic Vacuum Cleaner Using Arduino" under the Science and Technology category, funded by the Tamil Nadu State Council for Science and Technology (TNSCST). The project was sanctioned under Order No. TNSCST - S.N. 894 on September 1, 2022, with a required amount of ₹10,000, of which ₹7,500 was sanctioned and received.
- Applied for a research project titled "Portable Hydro Dual Access Power Plant for Rural A" under the Science and Technology category to the Tamil Nadu State Council for Science and Technology on March 9, 2022. The project requires ₹4,90,000 but has not yet received funding.

AWARDS / RECOGNITION

S. No	Staff Name	Details	Sponsor	Awarded Date
01.	Dr. M. MARSALINE BENO	Kalvi Mamani Award	Pasumai Vasal Foundation Dindigul	2022-07-05
02.	Dr. A. DARWIN JOSE RAJU	Professional Achievement	IEEE Madras Section	2023-10-14
		Ethics Champion	IEEE	2023-09-22
		Humanitarian Technologies Events Committee Chair	IEEE HTB	2023-02-03
		IEEE Humanitarian Activities Board Member	IEEE	2023-01-01
		Chairman	IEEE Madras Section	2023-01-01
		Honorable Mention of the 2022 SIGHT Volunteer Award	IEEE SIGHT	2022-12-23
		Reviewer	IEEE YESIST12	2022-09-10
		Mentor	IEEE YESIST12	2022-09-10
		IEEE HAC 2022 Project Monitoring Committee Member	IEEE	2022-01-01
		Chairman	IEEE MAS Education Society	2022-01-01
03.	Dr. J. MERRY GEISA	Clarivate Analytics Author	SXCCE	2022-12-23

S. No	Staff Name	Details	Sponsor	Awarded Date
04.	Dr. S.V. KAYALVIZHI	Resource person	Stella Marys Engineering college	2023-05-11
		Academic audit	Mar Ephrem college	2023-05-10
		Convenor	ICEETS	2023-04-27
		Academic audit	BIT college	2023-04-24
		Resource person	BIT college	2023-04-24
05.	Dr. M. JOHN BOSCO	Centum Result Appreciation	SXCCE	2023-12-22
		Best Innovator Award	SXCCE	2023-12-22
		Best Research Contributor Award	SXCCE	2023-12-22
		Judge for Paper Presentation	Tech Fest 2023 @ SXCCE	2023-04-20
		Best Supervisor	Tech Fest 2023 @ SXCCE	2023-04-20
		Reviewer	International Conference - ICETEAS - 2023	2023-04-13
		Session Chair	International Conference - ICETEAS - 2023	2023-04-12
06.	Er. W. VINIL DANI	Judge	SXCCE	2023-04-20
		Organizer	IGEN	2023-01-06
07.	Dr. S.S. SELVA PRADEEP	Judge	Centre for research,Sxcce	2023-04-20
		Judge-poster presentation	Centre for research,Sxcce	2023-04-20
		Session Chair	IET KKLN	2022-06-03
08.	Dr. JAIN B. MARSHEL	Appreciation-Contributions to IT Skills Training	MoE Govt. of India & IIT Bombay	2022-09-09
		Course Organizer - Spoken Tutorial Courses to EEE	MoE Govt. of India & IIT Bombay	2022-09-09

S. No	Staff Name	Details	Sponsor	Awarded Date
09.	Dr. JAIN B. MARSHEL	Spoken tutorial Academic Excellence Award	MoE Govt. of India & Spoken Tutorial IIT Bombay	2022-08-27
		Session Chair	Stella Mary's College of Engineering	2022-04-13
10.	Dr GEORGE ANSFER.A	Best Faculty Advisor award	IET KKLN	2022-12-17
11.	Er. ABRAGAM SIYON SING.M	Resource Person for Workshop	Shri Vishnu Engineering College for Women, AP	2023-06-23
		IGEN SDG Action Award	Institution of Green Engineers	2023-02-10
		NIEP Star Volunteer Appreciation Award 2022	Noble Institution of Environmental Peace, Canada	2022-12-05
		Guest speaker for IEI Centenary celebration	IEI KKLC	2022-10-10
12.	Dr. V. JESUS BOBIN	Judge for PATLN contest	IET SXCCE	2023-10-27
		Member-IGEN	Institution for Green Engineers	2023-04-27
		Judge for Poster presentation	SXCCE	2023-04-20
		IGEN ENERGY99 CHALLENGE V1.0 PROJECT	IGEN	2023-02-10
		Carbon credit E99 Project V.1	IGEN	2023-02-10
		Clarivate analytics author award	SXCCE	2022-12-23
		Guest Lecture	IEI-KKLC	2022-11-29
		Trainer	IIT Bombay	2022-10-29
		Guest Lecture	IEI-KKLC	2022-10-10
		Member of IGEN	Institution of Green Engineers	2022-04-27

S. No	Staff Name	Details	Sponsor	Awarded Date
13.	Er. S. SHINY	Session Chair	ELETRIZZA	2023-04-13
14.	Dr. M. GERMIN NISHA	Clarivate Analytics Author Award	SXCCE	2022-12-21
		Reviewer	Springer Nature	2022-11-04
		Resource Person	SXCCE	2022-09-20
		Resource Person	Morning Star Polytechnic College	2022-05-20

ACHIEVEMENTS

Dr. A. Darwin Jose Raju

- Chief Guest for the National Science Day 2023 event at Study World College of Engineering on February 28, 2023 at the University level.
- Participated as a Member in the Humanitarian Technologies Board Meeting organized by IEEE HTB from May 13 to May 14, 2023, at the International level.
- Chief Guest for the IEEE Student Branch Inauguration at Amrita College of Engineering and Technology on September 24, 2022, at the State level.
- Chief Guest for the IEEE Event - E SPIRE at Sai Ram Engineering College on November 26, 2022, at the University level.

Er. W. Vinil Dani

- Presented a paper at the International Conference on Energy Efficient Technologies and Sustainability at SXCCE from April 28 to June 6, 2023, at the International level.

Er. P. Suji Garland

- Served as an Organizing Committee Member for the International Conference on Energy Efficient Technologies for Sustainability, organized by the EEE and Mechanical Departments from April 27 to April 28, 2023.
- Acted as a Faculty Advisor for multiple State-level seminars organized by the EEE Department in the academic year 2022–2023, including:
- "Real-time Applications of Embedded Systems" on February 15, 2023
- "Energy Audit and Energy Conservation" on February 27, 2023
- "Over Voltages in Power Grid" on April 21, 2023
- "AI and Machine Learning" on May 4, 2023
- "Future Technologies in Electric Vehicles" on May 10, 2023
- "Introduction to SCADA/HMI & Career Connect" on September 2, 2022
- "Poster Presentation on Recent Trends in Electrical" on September 17, 2022
- "Introduction to Industrial Automation & Career Connect" on September 24, 2022

Dr. Jain B. Marshel

- Served as the Organizing Secretary for ICEETS'23, organized by AICTE, IET, EnSave Club, and EEE-Mech Departments from April 27 to April 28, 2023, at the International level.

Er. Abragam Siyon Sing. M

- Coordinated the Naan Mudhalvan FDP on Electrical Vehicle Design, conducted by Skill Lync from February 13 to February 17, 2023, at the State level.

Dr. Jesus Bobin V

- Served as an Organizer for various International and National-level events, including:

- IGEN Action Awards Seminar organized by IGEN on February 10, 2023 (State level)
- Energy Awareness Camp at Vavarai, conducted by EnSav Club/SXCCE, on February 25, 2023 (University level)
- Energy Conservation Festival, organized by IGEN, from December 10 to December 30, 2022 (International level)
- IGEN ENSAVCON 713 Conference, conducted by IGEN, from May 13 to May 16, 2022 (National level)
- FALCONX'22 Symposia, where he was the Organizer for Quiz and Circuit Debugging, on May 27, 2022 (National level)
- Energy Saving Awareness Campaign, conducted by EnSav Club-SXCCE, on March 26, 2022 (University level)

CONF/FDP ATTENDED

Dr. M. Marsaline Beno

- Attended a Faculty Development Program (FDP) on "Protection and Stability of Renewable Dominated Power Grids" at the Indian Institute of Science, Bengaluru, from January 2 to January 4, 2023, at the National level.
- Participated in an International FDP on "Unleashing Research Potential", conducted online by Galgotias University, from March 7 to March 11, 2022.
- Attended an International Seminar on "Energy Management - Applications and Research Opportunities", organized online by the National Institute of Technical Teachers Training, on April 27, 2022.

Dr. A. Darwin Jose Raju

- Attended a University-level Seminar on "NAAC Benchmarks, SOP for Autonomous Colleges", conducted at St. Xavier's Catholic College of Engineering, on March 18, 2023.
- Participated in a National-level FDP on "Internet of Things - A Roadmap to Research and Product Development", conducted by AICTE Training and Learning (ATAL) Academy at CMR Institute of Technology, Bangalore, from September 19 to September 30, 2022.

Dr. J. Merry Geisa

- Attended a National-level FDP on "Outcome-Based Curriculum Design", organized by NITTTR, Chandigarh, from February 13 to February 17, 2023.
- Participated in a National Seminar on "IP Awareness/Training Program", conducted online by the Intellectual Property Office, India, on June 14, 2022.

Dr. S.V. Kayalvizhi

- Attended a State-level Seminar on "Coastal, Tourism, Industrial Development, and Healthcare in Kanyakumari District", conducted at SXCCE, from June 27 to June 28, 2023.
- Participated in multiple National-level FDPs, including:
- "Research Methodology and IPR", organized online by Reach Association, Civil, from February 21 to March 25, 2022.
- "Industry 4.0 and Electric Vehicles", conducted online by AICTE/ISTE, PSG Tech, Coimbatore, from January 17 to January 22, 2022.
- "Electronic Waste Management - Issues and Challenges", conducted online by NPTEL, IIT Kharagpur, from January 24 to February 18, 2022.

Dr. M. John Bosco

- Attended a National-level Workshop on "Implementing and Integrating Embedded System Applications", organized by Noorul Islam Centre for Higher Education, from February 22 to February 23, 2023.
- Participated in an International Workshop on "Electric Vehicle Design Master Class", conducted online by Pantech eLearning Pvt Ltd, from February 2 to March 3, 2022.

Er. Almond D'Souza

- Attended an International FDP on "Spoken Tutorial Project, IIT Bombay", conducted online by IIT Bombay, from January 30 to February 4, 2023.

Er. W. Vinil Dani

- Participated in an International FDP on "LATEX", conducted online by IIT Spoken Tutorial, from April 18 to April 23, 2022.

Dr. S.S. Selva Pradeep

- Attended a National-level FDP on "Future Research and Innovation Technologies", conducted online by IET-KKLN, from March 6 to March 11, 2023.

Er. P. Suji Garland

- Attended an International FDP on "Future Research and Innovations", conducted online by IET, from March 6 to March 11, 2023.

Dr. Jain B. Marshel

Participated in a National-level FDP on "Recent Trends in Electrical Engineering", conducted online by Dr. Lankapalli Bullayya College of Engineering, from April 24 to April 28, 2023.

Er. Abragam Siyon Sing. M

- Attended an International Conference on "IGEN Energathon 2023", conducted online by IGEN, from May 27 to May 28, 2023.

Dr. Jesus Bobin V

- Participated in a University-level FDP on "NAAC Benchmarks, SOP for Autonomous Colleges", conducted at St. Xavier's Catholic College of Engineering, on March 18, 2023.
- Attended a National-level FDP on "Robotic Process Automation", conducted at Thiyagarajar College of Engineering under the Naan Mudhalvan Initiative, on February 11, 2023.

Er. J Leon Bosco Raj

- Attended a State-level FDP on "Powering IoT Using Arduino/Raspberry Pi", conducted at Francis Xavier Engineering College, Tirunelveli, from September 26 to September 30, 2022.

Er. S. Shiny

- Participated in an International Conference on "Advanced Technologies in Chemical, Construction, and Mechanical Sciences (ICATCHCOME 2023)", conducted at KPR Institute of Engineering and Technology, from February 9 to February 10, 2023.

Dr. M. Germin Nisha

- Attended a National-level FDP on "Robotics and Artificial Intelligence", conducted online by ATAL-AICTE, from February 7 to February 11, 2022.

ONLINE COURSE COMPLETION

Dr. M. John Bosco

- Successfully completed an online course on "Student Psychology", offered by NITTTR, Chennai, through Swayam, from July 29 to October 30, 2022, and received a Gold Medal.

Dr. Jesus Bobin V

- Completed an online course on "Student Psychology", offered by NITTTR, Chennai, through Swayam, from July 29 to October 31, 2022, and received a Gold Medal.

Er. J Leon Bosco Raj

- Successfully completed an online course on "Outcome-Based Curriculum and Accreditation Criteria", conducted by NITTTR, Chandigarh, from July 3 to July 7, 2023, and received a Participation Certificate.

- Completed an online course on "Student Psychology", offered by NPTEL, under the guidance of Dr. S. Renukadevi, from July 29 to October 31, 2022, and received a Gold Medal.

Dr. M. Germin Nisha

- Completed an online course on "Free & Open Source Software for Effective Curriculum", offered by NITTTR, Chandigarh, from February 20 to February 24, 2023, and passed the exam on March 24, 2023.

STUDENT'S ACHIEVEMENT'S

Co-Curricular Activities Within the State:

- **Benanto S** won First place in Circuit Renovate at Altanzia 2K23, held at National Engineering College on March 3-4, 2023.
- **Babin Dhas G and Berlin Tony X N** won First place in Tech Wringer at Altanzia 2K23, held at National Engineering College on March 3-4, 2023.
- **Jeedith Melfhiya R B and Dona Jobin A K** secured First place in Paper Presentation at Navayuva 2K23, conducted by Arunachala College of Engineering for Women on March 1, 2023.
- **G P Aswin Prince** won Second place in Paper Presentation at Ahava 2023, hosted by Rajas Institute of Technology on March 8, 2023.
- **Dona Jobin A K and Jeedith Melfhiya R B** won First place in Paper Presentation at MAR NXT '23, conducted by Mar Ephraem College of Engineering & Technology on May 2, 2023.
- **Jeedith Melfhiya R B** won First place in Technical Quiz at MAR NXT '23, held at Mar Ephraem College of Engineering & Technology on May 2, 2023.
- **C Shelshiya** participated in Paper Presentation at Flashionz 2K23, hosted by Amrita College of Engineering & Technology on March 25, 2023.

Extra-Curricular Activities Within the State:

- **Steny S** won Third place in Dance at Kalasrishti 2023, hosted by Sree Ayyappa College for Women, Nagercoil.
- **Steny S** secured Second place in Folk Dance (Group) at NEMIC 2023, conducted by Nesamony Memorial Christian College, Marthandam, on March 17-18, 2023.
- **Rabina R** won First place in Brain Rumble at Flashionz 2K23, held at Amrita College of Engineering & Technology on March 25, 2023.
- **Arockia Jervin Raj** won First place in Group Dance at Echo Fest 2023, organized by Noorul Islam College of Arts and Science on March 31, 2023.
- **Blessed John V** won First place in Rhythm of Mar Festa and Rock Band at Mar Festa 2K23, held at Mar Ephraem College of Engineering & Technology on March 10, 2023.
- **Blessed John V** won First place in Group Song at Nemic Fest 2023, conducted by Nesamony Memorial Christian College, Marthandam, on March 17-18, 2023.

Activities Outside the State:

- **Felix Roy J** won the ISTE – NIT Kozhikode National Award for B.Tech Project Competition at the ISTE National Annual Students Convention, held at Baba Farid College of Engineering and Technology, Bathinda, Punjab, in 2023.
- **Padua Aasher Antony** participated in the National Level Techno Exhibition at Dr. Ambedkar Institute of Technology, Bengaluru, on April 13, 2023.
- **Siva Prasad R** participated in the National Energy Audit Competition 2022 at the Fifth National Energy Congress "ENCON 2022", held at A.P.N Memorial CSA Hall, Angamaly, from October 12-14, 2022.
- **Shejin Sam S and Aksho Selgin R** participated in the Army Attachment Training Camp at 10 Engineer Regiment, Secunderabad, on May 12, 2023.

Participations Through Professional Bodies:

- **Jenin J** won First place in Video Presentation at SDG7 Summit 2023, hosted by SXCCE on May 16, 2023.
- **Vijesh V** won Second place in Video Presentation at SDG7 Summit 2023, hosted by SXCCE on May 16, 2023.
- **Kanimozhi K** secured First place in Poster Presentation at SDG-7 Summit 2023, conducted by SXCCE on May 16, 2023.
- **Shiny R** won Second place in Poster Presentation at the Symposium on Women Empowerment, held at SXCCE on March 24, 2023.
- **Dinesh D and Rojar Donald J** won awards for Poster Presentation and Video Presentation at National Energy Conservation Day 2022, conducted by SXCCE on December 10, 2022.

Other Awards & Achievements:

- **Aswin Prince G P, Navin Richard, Babin Dhas, Rojar Donald, and Ahil M** won the IGEN SDG Action Award at the IGEN Energy99 Challenge, organized by The Institution of Green Engineers (IGEN) on February 10, 2023.
- **Rojar Donald** received the NIEP Volunteer Appreciation Award 2022 for Volunteering Towards UN SDG Goals, sponsored by Noble Institution for Environmental Peace, Canada, on April 9, 2023.
- **G Babin Dhas, T Tijo, and P Pravin** secured a Funded Project Grant (₹7,500) under the Student Project Scheme, supported by the Tamil Nadu State Council for Science and Technology, on October 27, 2023.

Activities Inside the College:

- **Jenin J** won Second place in Quiz Competition at SEE Valedictory 2023, held on May 25, 2023.
- **Shiny R** won Third place in Poster Presentation at SEE Valedictory 2023, held on May 25, 2023.
- **Vijesh V** won First place in Video Presentation at SEE Valedictory 2023, held on May 25, 2023.
- **Kanimozhi K** secured Third place in Poster Presentation at SEE Valedictory 2023, conducted on May 25, 2023.
- **Jenin J and Kanimozhi K** won First place in Paper Presentation and Poster Presentation at Tech Fest 2023, held on April 20, 2023.
- **Harikrishnan** secured First place in Poster Presentation at Tech Fest 2023, held on April 20, 2023.
- Various students participated in workshops, sports day events, and technical competitions within the college.

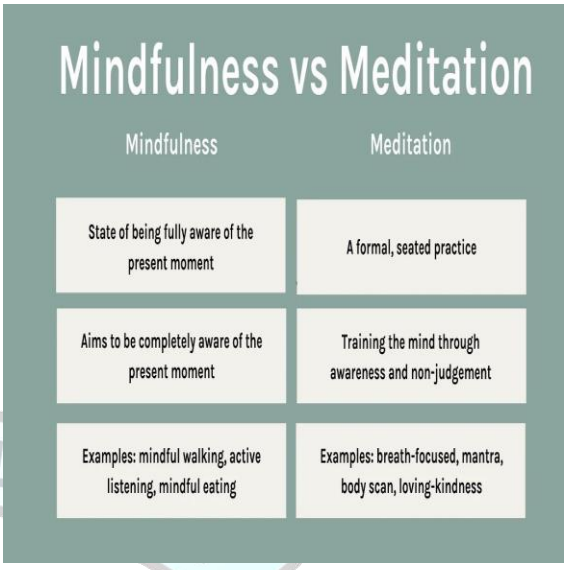
Non-Technical Article

The Impact of Mindfulness and Meditation on Mental Well-being

Introduction: In today's fast-paced world, the pursuit of mental well-being has become increasingly important. Mindfulness and meditation have emerged as powerful tools for enhancing mental health, reducing stress, and promoting overall well-being. This article explores the benefits of mindfulness and meditation, their scientific basis, and practical ways to incorporate them into daily life.

What is Mindfulness? Mindfulness involves being fully present in the moment, paying attention to thoughts, feelings, and sensations without judgment. It encourages a heightened awareness of the present, allowing individuals to cultivate a deeper connection with their inner experiences.

The Practice of Meditation: Meditation is a practice that involves focused attention and mental clarity. It can take various forms, such as guided meditation, transcendental meditation, and mindfulness meditation. Regular meditation practice can lead to profound mental and emotional benefits.



Benefits of Mindfulness and Meditation:

- Stress Reduction: Mindfulness and meditation have been shown to reduce stress levels by promoting relaxation and emotional regulation.
- Improved Focus: These practices enhance concentration and cognitive function, leading to better performance in daily tasks.
- Emotional Well-being: Mindfulness and meditation foster emotional resilience, helping individuals manage anxiety, depression, and negative emotions.
- Enhanced Self-awareness: Practicing mindfulness increases self-awareness and self-compassion, leading to a more positive self-image.
- Physical Health: Mindfulness and meditation can have positive effects on physical health, including improved sleep quality and reduced blood pressure.

Scientific Evidence: Numerous studies have demonstrated the effectiveness of mindfulness and meditation in improving mental health. Research shows that these practices can lead to structural changes in the brain, enhancing areas responsible for attention, memory, and emotional regulation.

Practical Tips for Incorporating Mindfulness and Meditation:

Start Small: Begin with just a few minutes of mindfulness or meditation each day and gradually increase the duration.

Find a Quiet Space: Choose a calm and quiet environment free from distractions.

Use Guided Meditations: Utilize apps or online resources that offer guided meditation sessions.

Practice Consistency: Consistency is key; aim to practice mindfulness or meditation regularly.

Integrate into Daily Activities: Incorporate mindfulness into everyday activities, such as eating, walking, or breathing exercises.

Conclusion:

Mindfulness and meditation offer a transformative approach to mental well-being. By embracing these practices, individuals can cultivate a deeper sense of peace, resilience, and overall happiness. As scientific evidence continues to support their benefits, mindfulness and meditation are becoming essential tools for fostering mental health in modern society. These practices not only enhance emotional regulation and cognitive function but also promote a sense of interconnectedness and empathy. By incorporating mindfulness and meditation into daily routines, people can develop healthier coping mechanisms for stress and anxiety. Moreover, the accessibility and simplicity of these practices make them suitable for individuals of all ages and backgrounds. As we continue to navigate the complexities of modern life, mindfulness and meditation provide a valuable means of achieving balance and well-being.

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8. Creswell, J. D. (2017). Mindfulness Interventions. Annual Review of Psychology, 68, 491-516.

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Harikrishnan

II Year EEE

Technical

AI-Based Energy Optimization for Individual Consumption

Abstract

This paper presents an AI-driven system for optimizing individual energy consumption using real-time data from smart meters and IoT sensors. Machine learning models analyze energy usage patterns and provide personalized recommendations to reduce energy waste and costs. The proposed system demonstrates how AI can enhance energy efficiency, cut expenses, and promote sustainable consumption by offering actionable insights in real-time.

I. Introduction

The increasing global energy demand, particularly in countries like India, underscores the need for innovative solutions to optimize consumption. The International Energy Agency (IEA) predicts India will contribute to 25% of global energy demand growth by 2040. Traditional energy grids are inefficient, especially during peak hours. This paper proposes an AI-driven solution that collects real-time data through smart meters and IoT sensors to monitor and analyze individual energy usage. By predicting consumption trends and providing personalized optimization strategies, the system aims to reduce waste, lower costs, and improve energy efficiency, addressing both local and global challenges.

II. Methodology

The system integrates IoT devices and AI-driven machine learning models for optimized energy consumption, with a focus on real-time insights through an app solution. The key steps are:

System Design: IoT-enabled smart meters collect real-time energy consumption data, tracking usage patterns, peak times, and fluctuations. This data is securely sent to a cloud platform for processing and analysis.

Data Preprocessing: The collected raw data is cleaned, normalized, and processed to ensure accuracy. Techniques like outlier detection and interpolation handle missing or erroneous data, preparing it for the machine learning models.

Machine Learning Analysis: The system uses machine learning algorithms, particularly time-series forecasting, regression, and anomaly detection models, to analyze historical energy usage data. These models predict future energy consumption, identify inefficiencies, and continuously learn from new data to improve prediction accuracy and adapt to changing behaviors.

Personalized Recommendations & Optimization: The AI generates personalized energy-saving recommendations based on usage patterns, such as adjusting appliance settings or shifting consumption to off-peak periods. The system can also autonomously control connected devices (e.g., HVAC, lighting) to optimize energy use during peak hours using reinforcement learning, ensuring continuous improvements.

Quick Analysis with App Solution: The mobile app or web portal provides users with instant, easy-to-understand feedback on their energy consumption. The app offers a dashboard with real-time data, trends, and personalized recommendations. Users can receive immediate alerts for energy inefficiencies, making it easy to act on the AI's insights and optimize their consumption in real-time.

III. Results and Findings

Energy Reduction: An average 18% reduction in energy usage after three months of using the system.

Cost Savings: Users saved approximately 12% on monthly energy bills.

Engagement: 70% of users actively interacted with the app, following recommendations.

Adaptability: The system effectively scaled across different user environments.

Fault Detection: Anomalies in consumption patterns were detected, enabling proactive fixes.

IV. Conclusion

AI can significantly enhance individual energy management by providing real-time insights and personalized optimization recommendations. This system reduces energy consumption, cuts costs, and promotes sustainability. Future work will focus on integrating renewable energy sources and addressing data privacy concerns.

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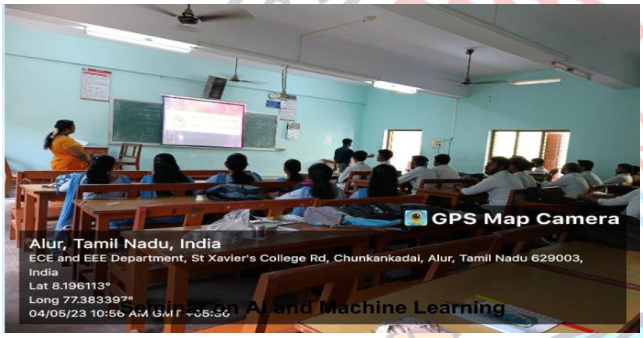
JOSHUVA MOSAY

II Year EEE

GALLERY

SEE Association Activities



Conference ICTEES' 23

All India Tour

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