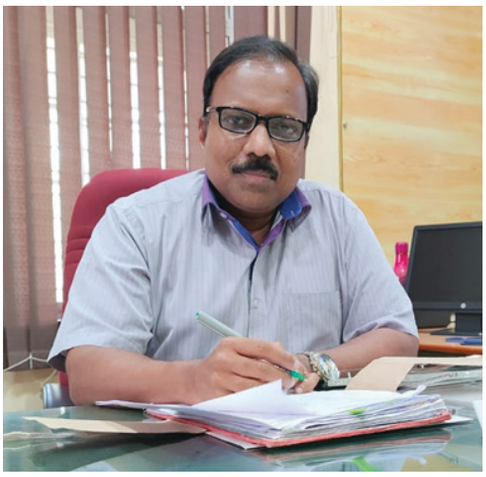
GECT
GOVERNMENT ENGINEERING COLLEGE, THRISSUR
RESEARCH BULLETIN
Volume 6 | Issue 2 | Jun-Dec 2023

Message from the Desk

DR. LIJO V
Principal



In the ever-changing world of research at our engineering college, there's a noticeable boost in sophistication. This trend empowers our faculty and students at Government Engineering College Thrissur to focus their knowledge and energy on a curriculum centered on mastering concepts. Our scholars carefully navigate the complex research landscape, making sure their findings are practical and sustainable, with a focus on benefiting society. As we celebrate the successful release of the 6thvolume, 2nd edition of our research bulletin, I extend heartfelt congratulations to the six outstanding members of our academic community who have excelled in their doctoral studies. Their scholarly publication showcases completed and ongoing research endeavors within our institution, highlighting the dedication of our students and their supervisors.

Over the past six months, our college has achieved a great feat by signing four new MoU's with several esteemed organizations. This strategic alignment strengthens our collaborative research efforts with industry, fostering relationships that drive innovation. Seeing our faculty members enthusiastically secure funding for cutting-edge research is truly uplifting.

To elevate our research efforts, let's craft and implement specific measures. I urge all faculty members to actively seek additional research funding from various sources, addressing the current needs. Let our collective commitment strengthen our research projects and build strong connections between academia and industry, shaping a future where innovation and knowledge thrive together.

Heartfelt congratulations!!!

Dr. Jismy Antony

Dr. Najva N

Dr. Bijesh R

Dr. Lekha A

Dr. Sandeep M N

Dr. Kavya Manohar

GEC's Proud Moments

The Institute Research Advisory Council takes great pleasure in extending heartfelt congratulations to the Ph.D. recipients: Dr. Jismy Antony (CE) Dr. Najva N (EEE), Dr. Sandeep M N (CE), Dr. Bijesh R (ME), Dr. Lekha A (Math) and Dr. Kavya Manohar (ECE, CET) on the successful culmination of their research journeys. IRAC also commends and extends its congratulations to their dedicated super visors for their pivotal role in guiding and supporting this remarkable achievement.

Details of Ph D Awardees

Sl. No	Name of the Awardee	Name of the Supervisor	Title of Thesis	Date of Award & University
1	Jismy Antony	Dr. Meera V (CE), Dr. Vinod P Raphael (Chemistry)	Efficiency of iron removal from drinking water sources using surface modified immobilized nano zero-valent iron	23-01-2023, APJ KTU
2	Najva N	Dr. Abdul Saleem P. K (EEE)	Trajectory planning and tracking of wheeled mobile robots in dynamic environments	10-10-2023, APJ KTU
3	Sandeep M.N.	Dr. Beena K.S (CUSAT)	Studies on Ground Vibration and Rayleigh Wave Propagation in Soft Soils due to High-Speed Railways	5-01- 2024, CUSAT.
4	Bijesh R	Dr. Arun P. Dr. C. Muraleedharan	Investigations on Energy Recovery Potential of Sewage Sludge Through Thermochemical Conversion Methods	16-01-2023 NIT Calicut
5	Lekha A	Dr. K. S. Parvathy	Domination in Graphs and Fuzzy Graphs	26-09-2023, University of Calicut
6	Kavya Manohar	Dr. A. R. Jayan (ECE), Dr. Rajeev Rajan (ECE)	Linguistic challenges in Malayalam speech recognition: Analysis and solutions	26-10- 2023, APJ KTU

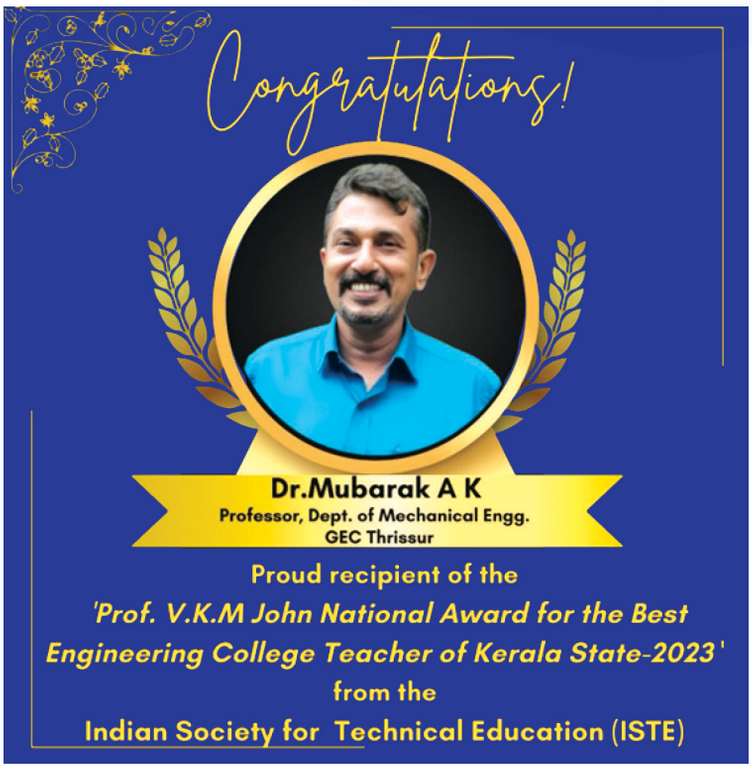
Dr. JIJI K S
Dean Research
GEC Thrissur

GECT MUST PRIORITIZE HIGH-QUALITY RESEARCH FOR A BRIGHTER FUTURE - Research Dean

Currently, our institute hosts approximately 150 research scholars distributed across ten departments, pursuing research in various domains of engineering addressing issues related to energy, e-mobility, water quality, environment and sustainability, waste management, cutting-edge material science, biomedical engineering, image and audio signal processing etc. Research on fundamental science, being the building block of all fields of engineering, is pursued with equal vigor.In the academic year 2022-23, six scholars were conferred PhDs, two more are awarded the degrees till now in 2023-24 while two scholars await review reports after submitting their theses.

This year, the GECT research family was expanded with 15 new research scholars taking admissions, of which 9 are full-time and 6 are part-time scholars. In the QIP admissions this year, we welcomed 3 full-time scholars into the PhD program.I extend heartfelt congratulations to all those who have earned their degrees and sincere best wishes to the scholars in different stages of their research tenure. A remarkable achievement in QIP admissions this year is the approval of all departments as research centers under QIP and in the admission process this year, already 7 scholars are selected for the Pre-PhD program with one more round to go.

Looking ahead, our strategic focus should be on amplifying the quality and quantity of our research output, which requires a concerted effort to increase the number of publications in SCI/SCIE journals and secure research funding from external agencies. Moreover, our publications, citations, and other research-related factors wield substantial influence on our NIRF rankings. Consequently, it becomes imperative for us to focus on augmenting research outputs, particularly in terms of patents and high-quality publications, to enhance our institute's standing. Under the guidance of the Institute Research Advisory Council, proactive steps have already been initiated in pursuit of this objective. I strongly encourage each scholar to take the initiative in exploring research funding opportunities, recognizing their pivotal role in elevating the quality of our research endeavors. Let us collectively strive to contribute to the research ecosystem of the institute by aiming for publications in esteemed SCI/SCIE journals and actively pursuing patent applications, thereby setting our institute's presence at the forefront of research excellence.

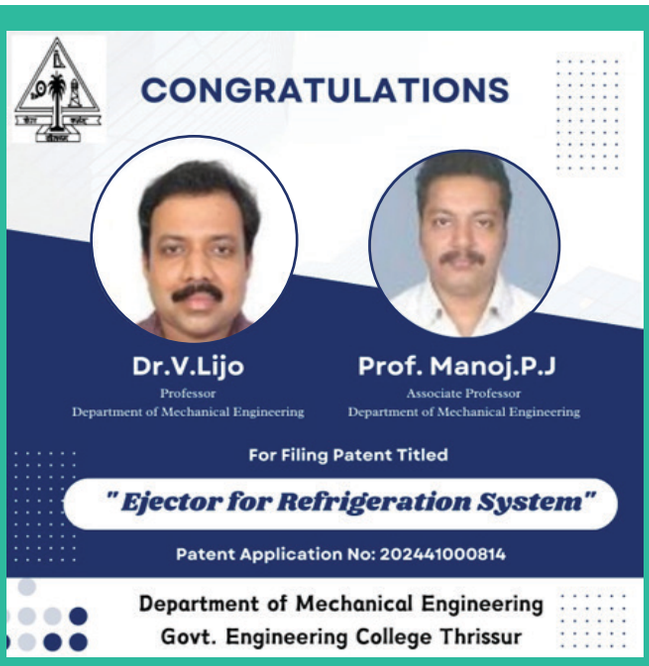


IRAC Coordinator

Dr. Uma Syamkumar, Associate Professor of EEE, has assumed the role of the coordinator, Institute Research Advisory Council (IRAC) and CERD. We extend our best wishes for her endeavors. IRAC is also grateful to **Dr. Seena P**, Professor of CE, for her valuable contributions as the former CERD coordinator

Hearty Congratulations to Dr. Lijo V & Prof. Manoj P J

The Institute Research Advisory Council (IRAC) is pleased to congratulate Dr. Lijo V., Professor of Mechanical Engineering and Principal-in-charge, and Prof. Manoj P J on their successful filing of a patent for their innovative "Ejector for Refrigeration Systems." This groundbreaking technology has the potential to significantly revolutionize energy efficiency in cooling systems, leading to substantial environmental and economic benefits. IRAC commends their valuable contribution to the field of Intellectual Property Rights and wishes them continued success in their research endeavors. We are confident that their invention will bring lasting benefits to the scientific community and society as a whole.



Ejector refrigeration system (ERS) is a refrigeration system that need only heat energy as input. ERS is very common in industries, because it utilizes a lot of waste heat available for a useful refrigeration purpose. Usually, steam is used as working fluid in ERS as it is readily available and environmentally safe. By properly redesigning the ERS, the system can work even with the solar energy as input for house hold applications. Thus, ERS can be made as fully sustainable refrigeration system. The main problem with the ERS is the very low coefficient of performance (COP) in the range of 0.1 to 0.7 only; whereas COP of the commonly used vapour compression system is in the range of 3.5 to 4.07. This patent work is an innovative method of enhancing the COP of the ERS system by a geometrical modification of the ejector. The COP of an ejector refrigeration system can be improved from 7% to 15% by this modification

Share your expertise Congrats to the contributors

Dr. JOSNA RAPHAEL, PROFESSOR OF ARCHITECTURE

Dr. Josna Raphael, Professor of Architecture at GEC Thrissur, delivered a talk titled "Resilient Urban Economics: Cities as Drivers of Growth and Recovery." Held on October 2nd, 2023, as part of World Habitat Day, the program was organized by The Institution of Engineers (India), Trichur Local Centre. Dr. Josna's insightful presentation explored the integration of architectural design with sustainable urban planning practices, sparking engaging discussions among participants. The Institute Research Advisory Council (IRAC) of GEC Thrissur commends Dr. Josna for her valuable contribution to promoting sustainable urban development through her expertise and engagement

Dr. PRASEETHA P NAIR, ASSOCIATE PROFESSOR OF CHEMICAL ENGINEERING

Dr. Praseetha P Nair, Associate Professor of Chemical Engineering, recently shared her expertise in two impactful programs. First, she served as a resource person at Rajadhani Institute of Engineering and Technology, Trivandrum, for the AICTE ATAL FDP on "3D Printing and Product Development." On November 30th, Dr. Nair's talk titled "Polymers based 3D Printing: Material Development Techniques and Applications" provided valuable insights into the latest advancements in this field.Second, Dr. Praseetha was a distinguished virtual speaker at the "3rd Global Conference on Advanced Nanotechnology and Nanomaterials" (Nano Intellects 2023) held in Berlin, Germany. Her presentation on "Exploring the feasibility of nanotechnology in Controlled Environment Agriculture" on September 14th sparked engaging discussions on the potential to revolutionize sustainable food production.The Institute Research Advisory Council (IRAC) commends Dr. Praseetha for her outstanding contributions to knowledge dissemination and advancing the frontiers of chemical engineering.

Dr. N.C. VISWANATH, PROFESSOR OF MATHEMATICS

IRAC extends its warm congratulations to Dr. N.C. Viswanath, Professor of Mathematics, for his significant contributions in the recent Jyothi Engineering College workshops and International Conference on Advances in Applied Probability and Stochastic Processes (ICAAP & SP 2024).

Dr. Viswanath's expertise shone brightly as the inaugural speaker at the Two-Day International Workshop on Stochastic Processes, held on January 16-17, 2024. His captivating talk on "Google Page Rank Algorithm" undoubtedly enriched the workshop's discussions.Dr. Viswanath's dedication to the field extended beyond his inaugural role. He further served as an invited speaker, delivering two insightful talks on diverse topics within stochastic processes.On January 16-17, 2024, he delved into the intricacies of "Birth-Death Processes" during the same Jyothi Engineering College workshop. He subsequently shared his knowledge on "On Some Inventory Models with/without Lost Sales" at the ICAAP & SP 2024, held January 18-20, 2024, at St. Aloysius College, Elthuruth, Thrissur, Kerala, India. IRAC commends Dr. Viswanath for his valuable contributions to these events and his unwavering commitment to advancing the field of stochastic processes.

Dr. SEEMA VARGHESE, ASSOCIATE PROFESSOR OF MATHEMATICS

IRAC extends its warm congratulations to Dr. Seema Varghese, Associate Professor of Mathematics, for her valuable contributions to the field of mathematics through her recent invited talks and participation in conferences. Dr. Seema shared her expertise on "Dynamics of cycle graphs" at the prestigious Prof. Ambat Vijayakumar Endowment Lecture and National Workshop on Research Trends in Graph Theory, held at CUSAT, Kochi, on September 10, 2023.Her knowledge further extended beyond graph theory as she delivered an insightful talk on "From Brain Anatomy to Network Topology" at the National Seminar on Computational Mathematics at Vimala College, Thrissur, on July 9, 2023.Dr. Seema's commitment to advancing the field was further evident in her role as a resource person at the International MSP Lecturer series organized by the Mathematical Society of Philippines" from April 1st, 2023. IRAC commends Dr. Seema for her dedication, knowledge, and valuable contributions to the mathematical community.

Congratulations to the contributors of Journal Articles

DEPT. OF CIVIL ENGINEERING

- **Jismy Antony; Meera V.; Vinod P. Raphael; Vinod P.,** Application of encapsulated and immobilized nano zero-valent iron for iron removal from roof-harvested rainwater, Water Supply (2022) 22 (12): 8957–8971. https://doi. org/10.216 6/ ws.2022.411

- **Jismy Antony, V. Meera, Vinod P. Raphael, P. Vinod,** Facile encapsulation of nano zero-valent iron with calcium carbonate: synthesis, chara cterization and application for iron remediation. J Environ Health Sci Engineer 20, 915–930 (2022).https: //doi. org / 10.1007/s40201-022-00831-0

- **Jismy Antony, V. Meera, Vinod P. Raphael,** Investigations on the capacity and mechanism of iron uptake by nano zero-valent iron particles. Bull Mater Sci 44, 3 (2021). https://doi. org/10. 1007/ s12034-020-02274-5

- **Sheeba N.K., Meera V and Vinod P.,** Copper nano particles impregnated on kaolin for control and prevention of biofilms and microbiologically induced corrosion,Journal of Environmental Science and Engineering, NEERI

- **V.S. Alsina, Miji Cherian R.,** Numerical investi gation on the effect of flexible vegetation in open -channel flow incorporating FSI, ISH Journal of Hydraulic Engineering(2023), Taylor and Francis https://doi. org/10.1080/09715010.2023.2263413

- **Parvathy Subrahmaniam and P. Seena,**Investigating the Effects of Steel Fibre and Basalt Fibres on the Mechanical Properties of Hybrid Fibre-Reinforced High-Performance Concrete, Lecture Notes in Civil Engineering, Volume 381, (2023) ISBN 978-3-031-39662-5, ISBN 978-3-031-39663-2 (eBook), https: doi.org/10.1007/978-3-031-39663-2

- **S. Arya and P. Seena** Mechanical Properties and Micro Structure of Graphene Oxide (GO) Cement Composites: A Review, Lecture Notes in Civil Engineering, Volume 381,(2023) ISBN 978-3-031-39662-5, ISBN 978-3-031-39663-2 (eBook), https: doi.org/10.1007/978-3-031-39663-2

- **Mathew D.B., Girija K., Nazeer M.** et al. Experimen tal and numerical analysis of lateral torsional buckling behviour of monosymmetric simply supported beam" Asian journal of Civil Engineering (2024). https:/oi.org/10.1007/s42107-023-00920-x

DEPT. OF ELECTRONICS AND COMMUNICATION ENGINEERING

- **Manohar, K., A R, Jayan & Rajan, R.** Improving speech recognition systems for the morphologically complex Malayalam language using subword tokens for language modeling. J Audio Speech Music Proc. 2023,47(2023). https://doi.org/10.1186/s13636-023-00313-7

DEPT. OF PHYSICS

- **Prasanth P., Reshma P., K. M. Udayanandan.,** A general format to find the generating function in a canonical Transformation, Lat. Am. J. Phys. Educ. Vol. 17, No. 1, March 2023

DEPT. OF MECHANICAL ENGINEERING

- **E Ahammed, AR Soman, PA Abdul Samad, B Varikkadinme.,** An Effective Mitigation System For Chlorine Release From Storage Facilities: An IoT based Practical Approach Using Physical Barriers, Chemical and Process Engineering: New Frontiers | 2023 | Accepted articles | e51 | DOI: 10.24 4 25/ cpe.2023.147410

DEPT. OF CHEMICAL ENGINEERING

- **Ranjana Ramath, Akshay Madappilly Sukuma ran, Anjana Ramachandran, Sajeena Beevi Basheer, ...** Methyl orange dye adsorption and degradation at low temperature using iron oxide-incorporated biochar derived from industrial by-products, Bioresource Technology Reports, Volume22, 2023.

- **Ardra Sebastian, Devika P S, Praseetha P Nair, V S Devadas,** "Green Synthesis of Potassium-infused Nitrogenous Nano Fertilizer for Enhanced Plant Growth" Chemical Papers. 10 th November 2023. HTTPS://DOI.ORG /10.1007/S11696-023-03175-7

DEPT. OF ELECTRICAL AND ELECTRONICS ENGINEERING

- **Abitha M. A., Abdul Saleem,** Quadrotor Trajectory Planning With Modified Self-Regulating Particle Swarm Optimisation For Autonomous Flight, International, Journal of Robotics and Automation. 2023; 38(6).

DEPT. OF COMPUTER SCIENCE AND ENGINEERING

- **Pranav P Nair, Ajay James, Philomina Simon, P V Bhagyasree.,** Malayalam Handwritten Character RecognitionUsing Cnn Architecture., Indonesian Journal of Electrical Engineering and Informatics (IJEEI) Volume 11, Issue 3, Pages 764-777

DEPT. OF CHEMISTRY

- **T. K. Bindu, V. Raphael, K. S. Shanmughan,** Computational Evaluation On The Binding Affinity Of Some Oxadiazole, Triazole And Quinazolinone Derivatives On Severe Acute Respiratory Syndrome Coronavirus 2 Envelope Protein, Indian Journal Of Pharmaceutical Sciences, 2023;85(5):1367-1372,

- **Bindu T K, Vinod P Raphael, Shaju K S,** Investigation On The Binding Affinity Of Five Drug-Like Sulphonamides On Sars-Cov-2 Targets: A Computational Study., Indian Journal Of Chemistry Vol. 63, January 2024, Pp. 94-104doi: 10.56042/Ijc.V63i1.4522

DEPT. OF MATHEMATICS

- **N.C. Viswanath,** Transient Analysis of Some Queueing/Inventory/Healthcare models Using Homotopy Perturbation Method; Operational Research(2023), DOI:10.1007/ s12351- 023-0 0805-6

- **Sreethu K, Seema Varghese, Seethu Varghese,** "Power domination in My cie lskians of n-spid ers", AKCE International Journal of Graphs and Combinatorics, Online ready, https://doi.org/10. 1080/0972 8600.2023.219650

CONFERENCE PUBLICATIONS

IRAC Congratulates the paper presenters and their supervisors in the National / International conference

GAYATHRY MENON, ANJANA N SATHYAN, JOHN J THARAYIL, ASWIN RAMESH, JAYAN A.R

Automatic Solar Panel Cleaner, IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE), 08-11 November 2023

ANU MATTATHOLI, SINITH MS.

A Comparative Study of Key Exchange Algorithms Utilizing Various cryptographic Techniques in Vehicular Ad Hoc Networks (VANETs). International Conference on Vehicular, Mobile and Wearable Technology (ICVMWT-23). 18th - 19th December 2023, Dubai, UAE

ANTONY J., MEERA V., RAPHAEL V.P, , VINOD P.

'Application of greenly synthesised zero-valent iron nanoparticles for iron removal from aqueous system', International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE 2023), MNIT, Jaipur, 11-12 Aug 2023

RODRIGUES A., MEERA V., VINOD P.

'Removal of Phenol from aqueous solution using Montmorillonite/Fe 3 O 4 /Humic Acid (MFH) nanocomposite', International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE 2023), MNIT, Jaipur, 11-12 Aug 2023

ANSARI A., MEERA V., VINOD P.

'Modelling of Seawater Intrusion in Munroe Island, Kollam, Kerala' International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE 2023), MNIT, Jaipur, 11-12 Aug 2023

RAVEENA NANDILATH*, ANISH A U

Statistical Analysis And Irrigation Water Quality Assessment of Selected Rivers of The Western Ghats, South India, Indian Geophysical Union, Diamond Jubilee Annual Convention on "Advances in Geosciences with Special Reference to Coastal Hazards" November 22-24,2023, at CUSAT

REYA K, N C VISWANATH

Study of the Delay at Traffic Signals using an Mt/Mt/1 Queueing model with competition between two types of customers; International Conference on Advances in Applied Probability and Stochastic Processes (ICAAP & SP 2024); St. Aloysius College, Elthuruth, Thrissur, Kerala, India 18- 20 January 2024.

SHIMNA A, N C VISWANATH

A Birth-Death Process with N- Policy for the Death Process; International Conference on Advances in Applied Probability and Stochastic Processes (ICAAP & SP 2024); St. Aloysius College, Elthuruth, Thrissur, Kerala, India 18- 20 January 2024.

SIVAKUMAR K S, N C VISWANATH

A Markov Model Based Study of Waiting Time of a Dynamic Distribution Agent in an Online Food Delivery System; International Conference on Advances in Applied Probability and Stochastic Processes (ICAAP & SP 2024); St. Aloysius College, Elthuruth, Thrissur, Kerala, India 18- 20 January 2024.

Ph D THESIS ABSTRACTS

JISMY ANTONY (CE)

Efficiency of iron removal from drinking water sources using surface modified immobilized nano zero-valent iron

The research explored the efficacy of nano zero-valent iron, calcium carbonate encapsulated nano zero-valent iron (CaCO3 -CnZVI) and calcium carbonate encapsulated nano zero-valent iron impregnated on polyurethane (PUF/ CaCO3 -CnZVI), in iron removal from drinking water sources. The synthesized nanoparticles and functionalized nano- composites were characterized using TEM, SEM, BET surface area analyzer, X-RD studies, EDS and FT-IR spectroscopy. The batch studies showed that at optimum conditions CnZVI, CaCO3 -CnZVI and PUF/ CaCO3 -CnZVI removed 70%, 96.4% and 98.4% iron from aqueous solution having 0.5 mg/L influent iron concentration. The removal efficiency decreased with increase in concentration and the effluent after treatment by all sorbents met the drinking water standards as per IS 10500:2012 up to an influent iron concentration of 5mg/L. The potency of the best sorbents (CaCO3 - CnZVI and PUF/ CaCO3 - CnZVI) in water treatment was determined by conducting experimental studies in real aqueous systems and the effluent iron concentration was found to be much below the acceptable limit for drinking in all cases. The nano sorbents were showing sufficient reusability with and without regeneration. The sorption process by all nano sorbents followed pseudo-second-order kinetics. The research led to the development of a novel nano sorbent PUF/ CaCO3 CnZVI for iron removal in water treatment

NAJVA N (EEE)

Trajectory planning and tracking of wheeled mobile robots in dynamic environments

Achieving proficiency in robot navigation necessitates command over the three fundamental components of navigation—environmental localization, trajectory planning, and motion control. Robots are susceptible to unstructured modeling, which encompasses measurement noise, parameter modifications caused by hypothetical mass variations, as well as kinematic and dynamic uncertainty. This work thoroughly investigates, assesses, and resolves the several challenges associated with robot navigation. A trajectory generation method is designed for mobile robots in dynamic environments, aiming to minimize jerk, ensure a smooth and continuous trajectory, and reduce actuator stress. The trajectory planning adhered to the requirements of decreased computational complexity and faster re-planning durations. This study presents a tracking controller that aims to minimize tracking error and control effort while considering uncertainties in the model, parameters, control inputs, and external disturbances.

BIJESH R (CE)

Investigations on Energy Recovery Potential of Sew age Sludge Through Thermochemical Conversion Methods

The present work deals with investigations on energy harnessing from sewage sludge (SS) generated from waste-water treatment plants, adopting a thermo-chemical conversion route. The complex reactions during the thermo-chemical conversion processes depend on the physical and chemical properties of the feedstock. Detailed characterisation of a non-conventional biomass feedstock like sewage sludge is essential for assessing its behaviour during the thermo- chemical conversion processes. A comprehensive study of relevant physical and chemical properties of sewage sludge was performed initially to assess its distinct characteristics

SANDEEP M N (ME)

Studies on Ground Vibration and Rayleigh Wave Propagation in Soft Soils due to High-Speed Railways

Ground vibration is a geotechnical problem in regions which are adjacent to sources of dynamic loading erms of peak particle velocity (PPV) and root mean square (RMS) velocity was determined for different train speeds and soil profiles, at varying distances from the track center. The safe limits for residential and sensitive structures were evaluated for different conditions based on peak particle velocity and root mean square velocity. From the results, it was observed that maximum ground vibration happens when the train speed was close to the Rayleigh velocity of the soft clay layer. tAlso, it was noted that the most influencing factor on the ground vibration for the representative soil profiles with soft clay layer was the depth of the top fill-soft clay interface from which there were higher wave reflections

LEKHA A (MATH)

Domination in Graphs and Fuzzy Graphs

Domination theory, a prominent domain within graph theory, assumes a crucial role by tackling practical challenges that emerge across diverse applications. We aim to grasp the inherent properties while also assessing the efficiencies of some variations of dominating sets. Specifically, our focus has been on instances where some distance conditions are imposed on the dominated sets. Efficient dominating sets offer a strategic approach to minimize wastage and amplify the efficacy of dominating sets. Our attention is particularly directed towards the examination of efficient and nearly efficient disjunctive dominating sets pertaining to network design, optimization, and resilience. We have introduced a strength-based domination parameter, which is a natural generalization of disjunctive domination. Unlike traditional domination and disjunctive domination parameters, our approach considers the dominating strength of a vertex. We have successfully derived exact values and established bounds for thestrength-based domination number across various classes of graphs. Furthermore, our investigation has extended to the domain of fuzzy graphs, where the interplay of uncertainty and imprecision adds an extra layer of complexity. This extension helps us better understand and tackle situations where things are not clear-cut, adding a practical touch to our research.

KAVYA MANOHAR (ECE)

Linguistic challenges in Malayalam speech recognition: Analysis and solutions

Speech recognition is a challenging problem that requires addressing both the acoustic and linguistic aspects of spoken language. This includes understanding the physical properties of speech signals, as well as the linguistic structure and meaning of the words and phrases being spoken. However the solutions to linguistic challenges that are effective for one language cannot be easily transferred to other languages. Thesis aims to address specific linguistic domain issues in the development of large vocabulary continuous speech recognition (LVCSR) for Malayalam language.

TBI achievements

Congratulations

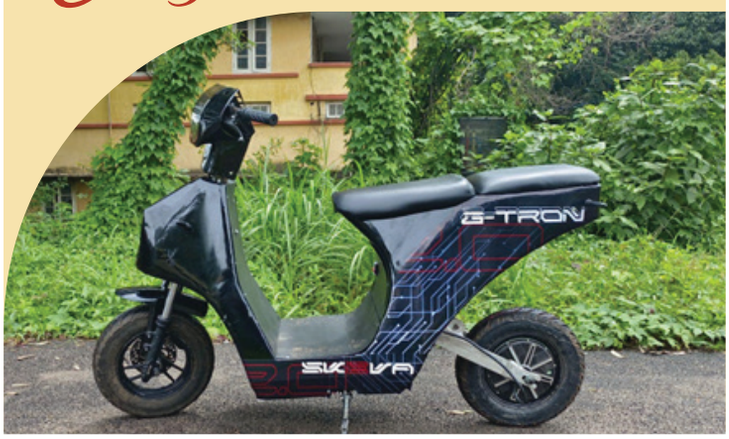
STARTUP AWARD – BEST RETAIL INNOVATOR OF THE YEAR

Estro Tech Robotics and Innovations Pvt. Ltd. Startup incubated under Technology Business Incubator(TBI) Government Engineering College Thrissur won the Retail Innovator of the Year 2023 at LuLu DIGEX Start-Up Awards in collaboration with Kerala Start-Up Mission, Samsung, TCL and Bosch.

GITEX GLOBAL PARTICIPATION AT UAE

The Technology Business Incubator (TBI) at Government Engineering College Thrissur is thrilled to announce the exceptional success of Team Estro Tech Robotics at the GITEX Global Event in Dubai. Operating under the TBI's auspices, Estro Tech Robotics has not only represented Kerala but has also demonstrated the prowess of Indian startups on the global stage. Their remarkable achievements underscore the impact of unwavering dedication and innovative spirit. Estro Tech Robotics achieved an impressive feat by being shortlisted as one of the eight Kerala startups in the semifinals of the Supernova Challenge. This recognition is a testament to the ground-breaking ideas and transformative potential embedded in their projects, showcasing their ability to revolution-ize the tech landscape.

Congrats to the winners



Thrissur Government Engineering College shines brightly with the inauguration of the "Skeev" – an electric scooter designed and built by the college team, securing a prominent position in the Society of Automotive Engineers (SAE) India's Electric Two Wheeler Design Challenge. In the national arena, the college team secured the first position in the Best Innovation category and the seventh position in the overall performance. At the state level, they clinched the first position, showcasing their prowess in the competition organized by the Society of Automotive Engineers. The team, led by Johan Thomas, excelled in the design and development of "Skeva", an electric scooter featuring a 48V lithium-ion battery and a 1000W BLDC motor. With advanced features like blind-spot sensing, emergency assistive braking, automatic headlight brightness control, accident detection and information system, and auto-indicator cutoff, the team's efforts were rewarded with the Best Innovation award in the competition. Under the guidance of **Prof. Anwar Sadique,** the Mechanical department students - **Angeo Pradeep George, Dheeraj Dev, Abhishek Raj, Meghna M, Aditya Krishna,** along with Electrical department students - **Angel Rose Shajan, Ashwin Unni, Aarathi Jithu, Adithyan S D,** played pivotal roles in the development of "Skeva". The project received support from the college's Robotics and Artificial Intelligence Research Center (RAIRC) for various technical aspects, making it a collaborative success. The outstanding performance and innovative features of "Skeva" make it a worthy recipient of the prestigious award, as Principal Satheesh K.P. approved and acknowledged the achievements of the students who brought laurels to the institution on the national and international platforms.

Congrats

Dr. PRASEETAHA P NAIR

IRAC extends heartfelt congratulations to Dr. Praseetha for her outstanding contribution to a book chapter. We commend her dedication and valuable input, which significantly enriches the content and quality of the chapter.

Book Chapter (Chapter 7) on “FunctionalMetal Oxide Nanoparticles Avenues for Nanomedicinal Research”. Book :Nanovacinology. Publishers: Springer, Cham. htt ps:// doi.org/ 10.10 07/978-3-031-35395-6-7

Congrats Swetha for your great achievement

SWETHA PAPPACHAN

Production Engg. 2023 batch,
recepient of
Kalpana Chowla Award
From SAE INDIA

Ms. Sweatha Pappachan (Production engineering 2023 batch) has won the Kalpana Chawla Award 2022-23 for her enthusiastic participation and contribution to SAEINDIA activities. The Kalpana Chawla award is an award given by SAEINDIA foundation to the best female SAE member in all India level. Ms. Sweatha is an active member of various activities of the club. She served as the membership chair of the collegiate club during 22-23 adding 151 new memberships and secured first position in sheet metal event along with the third position in technical paper presentation in Tier 3 (2023). Additionally, she captained the BDC 2021 team which secured AIR 2nd position and was also a member of M-baja team in 2023. She worked as a volunteer for Tier 3 in 2021, a Tier 1 coordinator at the college level and has been an active volunteer of SAE club since 2020.

DETAILS OF MOU SIGNED

MoU is renewed between Dr. Satish K P, Principal, GEC Thrissur and Sri. Santhosh Kurup, Chief Executive Officer, ICT Academy of Kerala on 31st July 2023 for a period of 1 year for joint activities like Train-the-Teachers Program, ICTAK Partner programs, Teacher's and Student's industry interaction program etc.

MoU is signed between Dr. Satish K P, Principal, GEC Thrissur and Sri. Rajesh P N, Secretary, GCDA, Cochin on 21st August 2023 for a period of 3 years for activities like joint development of 'Happiness report for Kochi' initiative, research partnership, training programs and learning events, internships, co-guided research projects, mutual collaborations etc.

A Letter of Agreement is signed between Dr. Satish K P, Principal, GEC Thrissur and Sri. Akhil Madhavan K, Chief Executive Officer, Spacetime 4d Printing Solution LLP, Space Technology Innovation and Incubation Center (STIIC) on 20th September 2023 for a period of 5 years for internships, co-guided research projects, mutual collaborations etc.

MoU is signed between Dr. Satish K P, Principal, GEC Thrissur and Mr. Rajesh Kumar, Managing Director, Technovalley Software India Pvt Ltd, Edapally, Ernakulam on 8th December 2023 for a period of 5 years for joint activities like webinars, faculty and students training program etc.

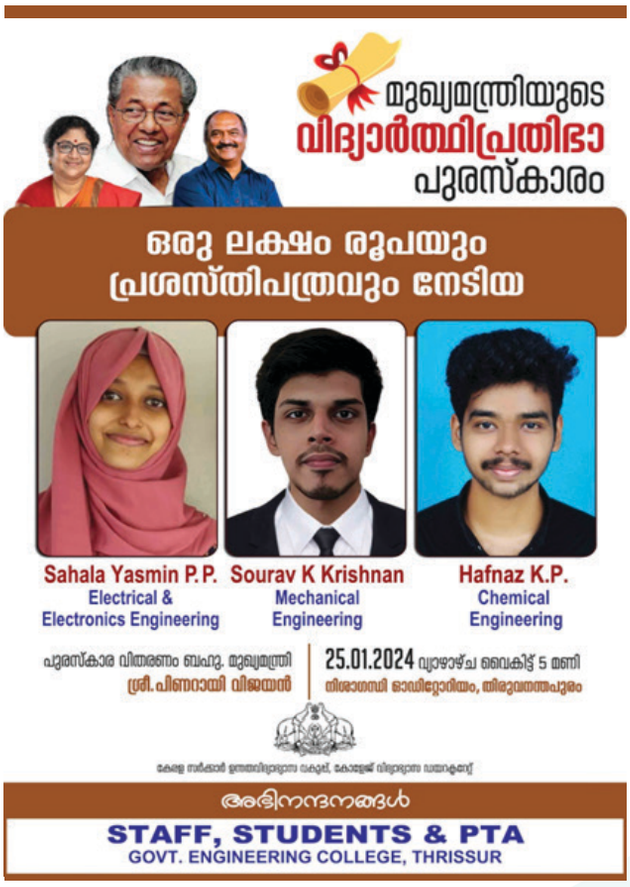
IRAC WISHES ALL THE BEST TO RESEARCH STUDENTS AND THEIR SUPERVISORS

List of students joined for Ph D program 2022 & 2023

Sl. No.	Name of student	Name of the Supervisor	Dept	Mode	Year of admn.
1	Praveen K P	Dr Suresh K Damodhararan	EEE	FT	2022
2	Raisen Joy	Dr. Lijo V	ME	FT	2022
3	Rahul M S	Dr Abdul Samad P A	ME	FT	2022
4	Renjith V B	Dr Abdul Samad P A	ME	PT	2022
5	Anwar Sadique	Dr Boby K George	ME	PT	2022
6	K A Sandeep	Dr Boby K George	PE	FT	2022
7	Lakshmi Rajan P	Dr Sujatha I	PE	FT	2022
8	Praveen R	Dr Sujatha I	PE	FT	2022
9	Soumya K G	Dr Bindmol E K	EEE	PT	2022
10	Sajith C Subramanian	Dr Abdul Samad P A	ME	PT	2022
11	Rahul K R	Dr Abdul Samad P A	ME	PT	2022
12	Haseena K H	Dr Suhara E M	EEE	FT	2022
13	Sini A	Dr Shaju K S	Chemistry	PT	2022
14	Chithira Ajeeth	Dr Meera V	CE	PT	2022
15	Angitha Sasidharan	Dr Seena P	CE	PT	2022
16	Anand Krishnan S	Dr Meera V	CE	FT	2022
17	Jasna P H	Dr. Seena P	CE	FT	2022
18	Safa Jabeen A	Dr. Subaida E A	CE	FT	2022
19	Smitha Mohan K	Dr Abdul Samad P A	CE	PT	2023
20	Anoop K T	Dr Ramesh A	ME	PT	2023
21	JOBY C M	Dr Sivan P P	CE	PT	2023
22	GREETY MARIA THOMAS C	Dr JOSNA RAPHAEL P	Architecture	FT	2023
23	EMILIN THOMAS KANGAPPADAN	Dr Uma Syamkumar	EEE	PT	2023
24	ANGEL MARIYA JOSEPH	Dr Fasnabi P A	CHE	FT	2023
25	SARIKA K T	Dr JAYAN A R	ECE	FT	2023
26	ARUNNATH P R	Dr Mubarak AK	ME	FT	2023
27	SUDHEER TM	Dr DEEPAK S	ECE	PT	2023
28	KRISHNADEV C	Dr Sajan M P	ME	FT	2023
29	RESHMA P S	Dr Job Chunkath	ECE	PT	2023
30	SOORAJ V R	Dr RAMADAS T	ME	PT	2023
31	SREEDIYA R	Dr DEEPAK S	ECE	PT	2023
32	NISHANTH S	Dr SAJITH BABU C	ME	FT	2023
33	ASHA ALI	Dr Jasmin E A	EEE	FT	2023
34	GENO JOHN K	Dr Mubarak AK	ME	FT	2023
35	NISHA G POOTHULLIL	Dr ABDUL SALEEM P K	EEE	FT	2023

WRITING A WELL-STRUCTURED RESEARCH GRANT PROPOSAL - HOW & WHY?

The Research Advisory Council conducted a comprehensive program titled 'Writing a well-structured Research Grant proposal -How & why?' on December 7, 2023 at Maxxwell hall, Dept. of EEE. The distinguished speaker for the session was Dr. James Alex, Dean Academic, Digital University Kerala. The event drew considerable participation, with 35 research scholars and 20 faculty members in attendance. The program spanned three hours, during which Dr. James Alex meticulously detailed strategies and insights on successfully obtaining funding for research projects. The event was deemed a success, providing valuable knowledge and guidance to the attendees.



We are Proud of you Rasmi

Rasmi Mohan, our former M Tech student (Environmental Engineering; 2020-22), who is currently pursuing a Ph.D. at IISc Bangalore, has been selected for the Prime Minister's Research Fellowship (PMRF-Lateral Entry Scheme, cycle 11) and the Hindustan Unilever Limited (HUL) Women Fellowship Programme-2023

Editor : **Dr. Vinod P Raphael**
Associate Professor of Chemistry
Ph: 9287560416

Kindly send the details of your research activities to the Email adress gectresearchbulletin@gectcr.ac.in at the earliest.