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# Chemical Chronicle

## NEWSLETTER


## Volume 3, Issue 2
## (January to June 2024)



## DEPARTMENT OF CHEMICAL ENGINEERING
## College of Engineering and Technology
## SRM Institute of Science and Technology
## Kattankulathur - 603 203
## Chengalpattu District, Tamil Nadu, India

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# Message from the Chairperson

**Dr. M. Vairamani**

**Chairperson, School of Bioengineering, CET, SRMIST**

I am delighted to announce the release of the latest edition volume 3, issue 2 of the newsletter, “Chemical Chronicle” of the Department of Chemical Engineering, SRMIST! This edition highlights the department’s recent achievements in all aspects of Academia, Research and beyond. As we strive to foster innovation and collaboration, I encourage you to nurture young minds to hone their skills to the fullest potential. Your involvement is crucial to our vibrant academic community. A special thanks to everyone who contributed to this issue. I wish all the best for the academic, research and developmental activities in the Department of Chemical Engineering to achieve greater heights. I hope you find it informative and inspiring.

Happy reading!

# From the HOD's Desk

**Dr. K. Suresh**
**Head of the Department, Chemical Engineering**

**We are excited to present the volume 3, issue 2 of the newsletter "Chemical Chronicle". It is indeed a proud moment to share the achievements of all our students, faculties and research scholars. Hearty congratulations and appreciation to the faculty members, research scholars and students for their accomplishments in publishing high impact journals, patents, and securing the funds. The department congratulates all the contributors for their hard work and commitment. I express my sincere gratitude to the members of the department for their dedication and contribution.**

**Wishing you all success.**

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# The Editorial Team

Dear Readers,

We are excited to present Volume III, Issue II of the Chemical Chronicle. This issue highlights the department's progress from January to June 2024, reflecting the dedication and hard work of our students, faculty, and support staff. During this period, our research quality has remained high, with 70 % of the publications appearing in SCI journals and the average impact factor rising from 5.4 to 6.1.

The placement season for the B.Tech. (2020-2024) graduates has been successful, with many securing core roles in esteemed companies. Our students have also made significant strides in their academic journey, presenting papers and posters at various conferences and events, further exploring new areas in Chemical Engineering under their mentors' guidance. We are also excited to showcase the creative talents of our students in the Creative Corner section, featuring their unique contributions. Hope you enjoy reading our newsletter!

**Dr. Poonguzhali E**
Assistant Professor Chemical Engineering

**Chaiti Harin Buch**
II Year B. Tech.

**Adithya S S**
II Year B. Tech.

**Muhammad Abdul Khader**
II Year B.Tech.

## About the Department

The Department of Chemical Engineering was started in the year 1995 offering B. Tech. degree programme in Chemical Engineering as one of the core departments of SRM Engineering College under the University of Madras. The department started offering a post-graduate programme, M. Tech. (Chemical Engineering) since 2002-2003. From the academic year 2003-2004, the department started functioning under SRM Institute of Science and Technology. The department now offers B. Tech. (Chemical Engineering), M. Tech. (Chemical Engineering) and Ph.D. (part time and full time) under SRM Institute of Science and Technology. So far, 26 batches of B. Tech. students and 21 batches of M. Tech. students have graduated from this department with meritorious performance. Presently, the department has 15+ Ph.D. scholars working on various socially relevant projects.

## Vision of the Department

To utilize Chemical Engineering and Technology and ensure overall socio-economic growth, welfare, and progress of Indian society and the World-at-large by supporting Academia, Industries through Research and Development, Consultancy and graduating high-quality Chemical Engineers.

## Mission of the Department

**Mission Statement – 1**
To facilitate high quality education, well grounded in the fundamental and applied areas of engineering necessary for learners to contribute effectively to chemical and allied industries.

**Mission Statement - 2**
To educate, prepare, inspire and mentor learners with the technical and professional skill-set necessary to excel as professionals, grow in their careers and contribute to chemical engineering science and technology.

**Mission Statement – 3**
To inculcate social-responsibility in learners and train them to contribute effectively to science and society.

# Publications

The **faculty members** along with their **students** have published **27 papers** in refereed journals, **1 book, 13 book chapters** and 2 patents during the period, January to June 2024. The Department of Chemical Engineering congratulates its faculty members and students for their tremendous efforts towards contribution for publication in peer reviewed journals/books.

| Paper Publications | January to June 2024 | Academic Year 2023 - 2024 |
|---|---|---|
| Number of Publications | 27 | 52 |
| Number of Corresponding Author Publications | 12 | 26 |
| Number of First Author Publications | 6 | 11 |
| Number of Science Citation Indexed (SCI) Publications | 19 (70.4 %) | 41 (78.9 %) |
| Highest Impact Factor | 15.3 | 15.3 |
| Average Impact Factor | 6.091 | 5.741 |
| Number of Q1 Publications | 12 | 26 |
| Number of Q2 Publications | 3 | 8 |
| Number of International Collaborative Publications | 13 | 29 |
| Number of National Collaborative Publications | 17 | 29 |
| Per capita Publication | | 2.74 |

**Dr. S. Anandhakumar**
**Publication with highest IF: 15.3**

1. Bharathi Abinaya Murugan, Preeyanghaa Mani, B. Neppolian, **K. Tamilarasan***, **Fabrication of a Z-scheme Bi2MoO6/NiFe layered double hydroxide heterojunction for the visible light-driven degradation of tetracycline antibiotics**, Journal of Water Process Engineering, 17-01-2024, Volume 58, 2024, 104813. ISSN 2214 -7144. https://doi.org/10.1016/j.jwpe.2024.104813. **SCI, IF: 6.3, Q1.**

2. **R. Lakshmi Priya**, **K. Tamilarasan,** M. Vairamani,Shubhen Kapila, **M. P. Rajesh***, **Papain-Catalyzed Synthesis of Oligolysine in Low-Water Organic Reaction Media,** Organic Process Research & Development, 17-01-2024, 28, (2), 460 – 477. ISSN: 1083-6160. https://doi.org/10.1021/acs.oprd.3c00198. **SCI, IF: 3.4, Q1.**

3. P. Mullai*, **S. Vishali,** K. Dharmalingham, **Residence time distribution experiments in a hybrid anaerobic blanket reactor treating real pharmaceutical wastewater**, Journal of the Taiwan Institute of Chemical Engineers, 06-02-2024, 2024, 105381. ISSN 1876-1070. https://doi.org/10.1016/j.jtice.2024.105381. **SCI, IF: 5.7 Q1.**

4. Akash Balakrishnan, **Meenu Mariam Jacob**, **D. Nanditha,** Mahendra Chinthala, **P. Muthamilselvi,** Dai-Viet N. Vo, **Photocatalytic sponges for wastewater treatment, carbon dioxide reduction, and hydrogen production: a review**, Environmental Chemistry Letters, 16-02-2024, 22, (2024), 635-656, ISSN: 1610-3653, https://doi.org/10.1007/s10311-024-01696-5. **SCI, IF: 15.27, Q1.**

5. Mahalakshmi Subbiah, Annalakshmi Mariappan, **S. Anandhakumar,** Sabarinathan Venkatachalam, Rajasekaran Thanjavur Renganathan, Nishakavya Saravanan, Sudhagar Pitchaimuthu*, Nagarajan Srinivasan*, **Protonated C3N4 Nanosheets for Enhanced Energy Storage in Symmetric Supercapacitors through Hydrochloric Acid Treatment,** ACS Omega, 28-02-2024, 9, (10), 11273-11287, ISSN: 2470-1343, https://doi.org/10.1021/acsomega.3c06747. **SCI, IF: 4.1, Q2.**

6. Mullaimalar, Rithikaa Thanigaiselvan, Janani Karuppaiyan, **S. Kiruthika**, R. Jeyalakshmi, Mohammed F. Albeshr, **An efficient eco-friendly adsorbent material based on waste copper slag-biomass ash geopolymer: dye sorption capacity and sustainable properties,** Environmental Geochemistry and Health, 09-03-2024, Volume 46, article number, 110, (2024), ISSN: 0269-4042, https://doi.org/10.1007/s10653-024-01920-9. **SCI, IF: 4.2, Q1.**

7. Moorthy Gnanasekar Narendran, Silda Peters, Aruljothy John Bosco,**G. Keerthiga,** B. Neppolian, Sakkarapalayam Murugesan Senthil Kumar, Terence Xiaoteng Liu, **Pioneering Exploration of Mo2AlB2-Transition-MetalAluminum-Boron-Phase-Supported Hydrophobic SrTiO3/ Mo2AlB2 Nanocomposite for Improved Photocatalytic Carbendazim Degradation and CO2 Reduction to Ethanol through the Schottky Junction**, Solar RRL,12-03-2024, Volume 8,Issue 8, April 2024, 2301043, ISSN:2367-198X, https://doi.org/10.1002/solr.202301043. **SCI, IF: 9.173, Q1.**

8. Sange Wangmu Sherpa, **P. Muthamilselvi***, **Meenu Mariam Jacob,** Ashish Kapoor, **S. Prabhakar**, **Facile removal of sulfamethoxazole antibiotic from contaminated water using bagasse-derived pyrolytic biocarbon: Parametric assessment, mechanistic insights and scale-up analysis,** Journal of Water Process Engineering, 14-03-2024, Volume 60, 2024, 105110. ISSN 2214-7144, https://doi.org/10.1016/j.jwpe.2024.105110. **SCI, IF: 7, Q1.**

9. **S. Surya Babu**, **Abinaya Stalinraja, Takumi Nagasaka**, **G. Keerthiga***, **Indigenous designed metal-organic framework for electrocatalytic reduction of CO2—a review Ionics,** 14-03-2024, Volume 30, (2024), 2881–2900. ISSN: 0947-7047. https://doi.org/10.1007/s11581-024-05468-7. **SCI, IF: 2.8, Q3.**

10. **Satya Narayana**, **S. Kiruthika**, Sunita Chauhan, **M. P. Rajesh***, **Waste-liquors generated during Handmade paper manufacture from cow dung as a potential source of biofertilizer,** Journal of Applied and Natural Science, 20-03-2024, Vol. 16(1), 400-409 (2024). ISSN: 0974-9411, https://doi.org/10.31018/jans.v16i1.5209. **Scopus SNIP: 0.262.**

11 .Rohith Kumar Raman, Saraswathi G, Ananthan A, Vidya S.M., **K. Suresh**, Senthil A. Gurusamy T, Ananthanarayanan K. **Facile and scalable bilayer polymer encapsulation to achieve long-term stability of perovskite solar cells under harsh humidity conditions,** Sustainable Energy and Fuels, 20-03-2024. 8 (9), 1953-1965, https://doi.org/10.1039/D3SE01483E. **SCI, IF: 5.6, Q2.**

12. G. Baskar, Sampath Nithica, Ravichandran Pravin, Viswanathan Renuka, **K. Tamilarasan, Enhanced biodiesel production from Annona squamosa seed oil using Ni-doped CaO nanocatalyst: Process optimization and reaction kinetics,** Energy & Environment, 28-03-2024, ISSN: 0958-305X. https://doi.org/10.1177/0958305X241241291. **SCI, IF: 4.2, Q3.**

13. Ashish Kapoor, R. Sharmiladevi, **S. Anandhakumar***, Vijay Vaishampayan, Adithya Sridhar, S. Balasubramanian, **P. Muthamilselvi, Paper- based lab-on-a-chip devices for detection of agri-food contamination,** Trends in Food Science & Technology, 04-04-2024, 147, 2024, 104476. ISSN: 0924-2244, https://doi.org/10.1016/j.tifs.2024.104476. **SCI, IF: 15.3, Q1.**

14. Prabhu Chelladorai, Navaneetha Krishnan Balakrishnan, **G. Keerthiga**, Sambhav Singhvi, Parahat Atekov, **Characterization of Pyrolysis Oil Extracted from High Lignocellulosic Groundnut Shell Biomass,** SAE International Journal of Fuels and Lubricants, 18-04-2024, Volume 17, Issue 3, ISSN: 1946-3952, https://doi.org/10.4271/04-17-03-0014. **ESCI, SNIP: 0.678.**

15. E. Ragulkumar, **K. Suresh,** P. Sambath*, U. Fernandez-Gamiz, S. Noeighdam, S. Dinarvand, **Free Convective Heat Flow from Cold and Heated Conical Bodies in Newtonian Liquids,** Results in Engineering, 19-04-2024, Volume 22, June 2024, 102150, ISSN:2590-1230, https://doi.org/10.1016/j.rineng.2024.102150. **ESCI, SNIP: 1.550.**

16. C. Sreelakshmi, **S. Kiruthika**, R. Jeyalakshmi, **Performance evaluation of a microbial fuel cell for resource recovery as struvite and bioelectricity generation from slaughterhouse wastewater,** Journal of Chemical Technology and Biotechnology, 24-04-2024, Volume 99,Issue 7, July 2024, Pages 1660-1670, ISSN: 0268-2575, https://doi.org/10.1002/jctb.7660. **SCI, IF: 3.4, Q2.**

17. **V. Ganesh, M. P. Rajesh***, **Synthesis, Characterization and Thermal Studies of Composite Nanofluids and their Comparison with Hybrid Nanofluids,** Asian Journal of Chemistry, 30-04-2024, Vol. 36, No. 5 (2024), 1027-1034, ISSN: 0970-7077, https://doi.org/10.14233/ajchem.2024.30813. **Scopus, SNIP: 0.167.**

18. U Smruthi, Saliya Parveen, **Sashank Sriram, Aswin Seghar**, **V Ganesh****, G Sudha*, **Studies on improvisation of Protein purification by foam fractionation,** Journal of University of Shanghai for Science and Technology, April 2024, Volume 26, Issue 4, April – 2024, ISSN: 1007-6735. **Scopus, SNIP: 0.177.**

19. Sharmiladevi Ramamoorthy, Yuvaraj Sivalingam, Corrado Di Natale, **S. Anandhakumar ***, **Visible light enhanced selective benzene response of hexagonal atomic structured CuS microcloves,** Chemical Engineering Journal, 10-05-2024, Volume 493, 1 August 2024, 152115, ISSN: 1385-8947, https://doi.org/10.1016/j.cej.2024.152115. **SCI, IF: 15.1, Q1.**

20. K. Mahalakshmi, **S. Kiruthika**, B. Muthukumaran, S. Balaji, V. Edwin Geo, **Crafting high-performance polymer-integrated solid electrolyte for solid state sodium ion batteries,** Energy Storage, 15-05-2024, Volume 6, Issue 4, June 2024, ISSN: 2578-4862. https://doi.org/10.1002/est2.636. **ESCI, SNIP: 0.511**.

21 B.Muththamizh, A.Sowmya, **S. Prabhakar, P. Muthamilselvi,** Ashish Kapoor, **M. P. Rajesh*, Spatial distribution of nitrate and fluoride pollution and risk assessment in drinking water resources of Chennai, Kancheepuram, and Tiruvallur districts of Tamil Nadu, India,** Desalination and Water Treatment, December 2023, 316 (2023), 1–21, December, ISSN: 1944-3994, http://dx.doi.org/10.5004/dwt.2023.30096. **SCI, IF: 1.254, Q4.**

22. **Monica A. V.**, **K. Anbalagan*, Facile synthesis of activated biomass loaded with ZnCl2 as eco-friendly adsorbent for BPA and BPS removal: Comparative study on batch, column and breakthrough performance**, Journal of Water Process Engineering, 20-06-2024, Volume 64, 2024,105636, ISSN: 2214-7144. https://doi.org/10.1016/j.jwpe.2024.105636. **SCI, IF: 6.3, Q1**

23. Ilakkiya Pandurangan, **S. Kiruthika,** Gayathri Aarimuthu, Mahalakshmi Kannadasan, Muthukumaran Balakrishnan, **Lithium perborate-based composite polymer electrolytes for all-solid-state lithium-ion batteries: performance enhancement and stability, Ionics,** 15-06-2024, ISSN: 0947-7047, https://doi.org/10.1007/s11581-024-05641-y. **SCI, IF: 2.4, Q3.**

24. Sangamithra Nehru, Maarten Vergaelen, Richard Hoogenboom*, **S. Anandhakumar***, **Echogenic Gold Nanorod Incorporated Hybrid Poly(2-oxazoline) Nanocapsules for Real-time Ultrasound/Fluorescent Imaging and Targeted Cancer Theranostics,** ACS Applied Bio Materials, 17-06-2024, ISSN: 2576-6422. https://doi.org/10.1021/acsabm.4c00348. **ESCI, IF: 4.6, Q2.**

25. V.Selvarani, **S. Kiruthika,** P. Jayaprakash,B. Muthukumaran, **Enhanced ethylene glycol oxidation in membraneless fuel cells: Comparative analysis of nickel alloy nanocatalysts,** International Journal of Hydrogen Energy, 18-06-2024, Volume 77,2024, Pages 441-449, ISSN: 0360-3199, https://doi.org/10.1016/j.ijhydene.2024.06.143. **SCI, IF: 8.1, Q1.**

26. **Bello Abdu Isaha**, **P. Muthamilselvi,** B. Senthil Rathi, P. Senthil Kumar, Ashish Kapoor, Manjula Rajagopal, Anjali Awasthi, Gayathri Rangaswamy*, **Artificial intelligence-based neural network modeling of adsorptive removal of phenol from aquatic environment,** Desalination and Water Treatment, 21-06-2024, Volume 319, July 2024, 100564, ISSN: 1944-3986, https://doi.org/10.1016/j.dwt.2024.100564. **SCI, IF: 1, Q4.**

27. Mahalakshmi Kannadasan, **S. Kiruthika,** Ilakkiya Pandurangan, Muthukumaran Balakrishnan, **Synergistic nanocomposite polymer electrolytes for advanced all-solid-state sodium-ion batteries,** International Journal of Hydrogen Energy, 29-06-2024, Volume 78,2024, Pages 634-641, ISSN: 0360-3199, https://doi.org/10.1016/j.ijhydene.2024.06.305. **SCI, IF: 8.1, Q1.**

# Book Published

1. R. Indira Iyer, Siddhartha Singha, **K. Deepa,** Biological Synthesis of Inorganic Nanoparticles and Their Applications, 26/02/2024, Edition: 1, 9788196247171, Scientific Publishers, https://www.scientificpubonline.com/bookdetail/biological-synthesis-inorganic-nanoparticles-their-applications/9788196247171/0

**Congratulations Dr. K. Deepa on authoring your book !**

# Book Chapters Published

1. **K. Suresh, K. Selvam, B. Karunanithi**, **Chapter 6 - Computational Fluid Dynamics Studies on the Impact of Viscosity and flow rate of Dope Solution in Hollow Fiber Ultra Filtration Membrane Formation, Theory and Applications of Engineering Research** Vol. 4, 19-01-2024, 117-129, 978-81-969723-3-2**, B P International**. https://doi.org/10.9734/bpi/taer/v4/7216C.

2. Sarath Chandra, K. Pavithra, R.R. Parthasarathi**, A. Afeez Ahamed, Mohamed, Abdul Wajith, Divyash Singh**, Paromita Chakraborty, **Chapter 5 - Sampling and extraction techniques for endocrine-disrupting chemicals, Endocrine-Disrupting Chemicals, Environmental Occurrence, Risk, and Remediation,** 25-01-2024, 67-83, 9780128238974, **Elsevier**, https://doi.org/10.1016/B978-0-12-823897-4.00012-5.

3. Sarath Chandra, K. Pavithra, K. Ronnie Rex, Moitraiyee, Mukhopadhyay, **A. Afeez Ahamed**, Paromita Chakraborty, **Chapter 11 - Environmental occurrence of industrial endocrine disrupting chemicals, Endocrine-Disrupting Chemicals, Environmental Occurrence, Risk, and Remediation**, 25-01-2024, 169-221, 9780128238974, **Elsevier**, https://doi.org/10.1016/B978-0-12-823897-4.00002-2.

4. Paromita Chakraborty, Sarath Chandra, K. Pavithra, Moitraiyee Mukhopadhyay, **Divyash Singh**, Mon Bera, Brij Mohan Sharma, **Chapter 14 - Exposure pathway and risk assessment of endocrine-disrupting chemicals, Endocrine-Disrupting Chemicals, Environmental Occurrence, Risk, and Remediation,** 25-01-2024, 251-277, 9780128238974, **Elsevier,** https://doi.org/10.1016/B978-0-12-823897-4.00005-8.

5. Avanti Roy Basu, Sidhi Soman, **Mohamed Abdul Wajith**, Moitraiyee Mukhopadhyay, Girija K. Bharat, C**hapter 15 - Standard guidelines for managing endocrine disrupting chemicals in the environmentEndocrine-Disrupting Chemicals, Environmental Occurrence, Risk, and Remediation,** 25-01-2024, 279-289, 9780128238974, **Elsevier**, https://doi.org/10.1016/B978-0-12-823897-4.00016-2.

6. K. Pavithra, **A. Ilansuriyan, K. Giridharan, Yuvan Sai Potru**, Paromita Chakraborty, **Chapter 17 - Removal techniques of endocrine-disrupting chemicals in soil and sediment, Endocrine-Disrupting Chemicals Environmental Occurrence, Risk, and Remediation**, 25-01-2024, 325-340, 9780128238974, **Elsevier,** https://doi.org/10.1016/B978-0-12-823897-4.00008-3.

7. **M. Magesh Kumar***, **Chapter 7 - Process Optimization in Biofuel Production Using Different Biomass Biomass-based Clean Technologies for Sustainable Development. Sustainable Resources of Energy Production and Utilization. Part of the Book Series Clean Energy Production Technologies,** 13-04-2024, 135–159, 978-981-97-0846-8, **Springer Singapore,** https://doi.org/10.1007/978-981-97-0847-5_7.

8. **Meenu Mariam Jacob**, **P. Muthamilselvi***, Ashish Kapoor, Dan Bahadur Pal, **S. Prabhakar, Chapter 9 - Biochar Innovations for Adsorption of Water Contaminants in Water Treatment. Biomass-based Clean Technologies for Sustainable Development. Sustainable Resources of Energy Production and Utilization. Part of the Book Series Clean Energy Production Technologies**, 13-04-2024, 183–201, 978-981-97-0846-8, **Springer Singapore**, https://doi.org/10.1007/978-981-97-0847-5_9.

9. **Meenu Mariam Jacob**, **P. Muthamilselvi***, Ashish Kapoor, Dan Bahadur Pal, **S. Prabhakar, Chapter 11 - Biochar-Based Mixed Matrix Membranes: A Novel Approach to Water Treatment. Biomass-based Clean Technologies for Sustainable Development. Sustainable Resources of Energy Production and Utilization. Part of the Book Series Clean Energy Production Technologies,** 13-04-2024, 229–247, 978-981-97-0846-8, **Springer Singapore**. https://doi.org/10.1007/978-981-97-0847-5_11.

10. **Sredha J. Nair, G. Keerthiga*, Chapter 12 - Sustainable Approaches for Pollution Control: Bioelectrochemical Systems, Microbial Fuel Cell, and Microalgae-Based Wastewater Treatment Strategy**, **Biomass-based Clean Technologies for Sustainable Development. Sustainable Resources of Energy Production and Utilization. Part of the Book Series Clean Energy Production Technologies,** 13-04-2024, 249–268, 978-981-97-0846-8, **Springer Singapore**, https://doi.org/10.1007/978-981-97-0847-5_12.

11. Adarsh Kumar Arya, Shreya, **P. Muthamilselvi***, Dan Bahadur Pal, Ashish Kapoor, **Chapter 10 - Algae Biomass Vaporization for Wastewater Remediation, Sustainable Clean Energy Production using Waste Biomass. Sustainable Energy Production and Utilization. Part of the Book Series Clean Energy Production Technologies**, 16-04-2024, 1st Edition, 251–271, 978-981-97-0839-0, **Springer Singapore**, https://doi.org/10.1007/978-981-97-0840-6_10.

12. Margavelu Gopinath, Chandrasekaran Muthukumaran, Madhusudhanan Manisha, Murugesan Nivedha, **K. Tamilarasan, Chapter 9, Biomass to Biofuel: Biomass Sources, Pretreatment Methods, and Production Strategies, Renewable Energy Innovations: Biofuels, Solar, and Other Technologies,** 31-08-2023, 233-265, ISBN:9781119785675, **Wiley, Scrivener Publishing LLC**, https://doi.org/10.1002/9781119785712.ch9.

13. Nur Nadhirah Mohamad Zain, Nor Munira Hashim, Noorfatimah Yahaya, Mazidatulakmam Miskam, Ahmad Husaini Mohamed, Nur Sofiah Abu Kassim, **P. Muthamilselvi**, Molecularly Imprinted Polymers as Highly Selective Sorbents in Sample Preparation Techniques for Extracting Emerging Pollutants from Environmental Water, **Molecularly Imprinted Polymers as Artificial Antibodies for the Environmental Health. A Step Towards Achieving the Sustainable Development Goals**, 22-06-2024, 1st Edition, ISBN 978-3-031-58994-2 ,**Springer Cham,** https://doi.org/10.1007/978-3-031-58995-9_9.

## Patents Published

1. **Dr. S. Vishali, Dr. S. Sam David,** A System and a Method for Treatment of Wastewater, 01-09-2023, The Patent Office, GOI 202341052433A

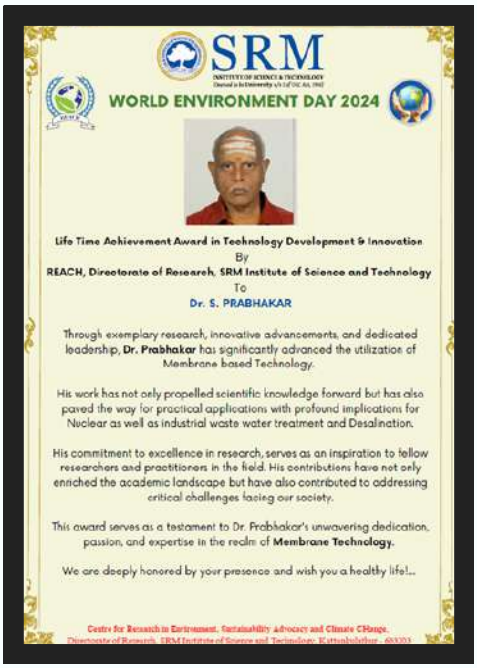
2. Dr. A. Sowmya, Ms. B. Muththamizh, **Dr. S. Prabhakar, Dr. P. Muthamilselvi,** Dr. Ashish Kapoor, Quaternary Ammonium Functionalized Chitosan Resin for the Removal of Nitrate from drinking water, 02-02-2024, The Patent Office, GOI 202441004453A

## Project Sanctioned

**Dr. P. Muthamilselvi**'s project titled **Digitizing Academic and Environment Monitoring for Sustainability (Diadem**) is funded by **Unnat Bharat Abhiyan (UBA**) with **1 Lakh** on 29-03-2024 for 1 one-year tenure

# Life Time Achievement Award

**Dr. S. Prabhakar,** Adjunct Professor was felicitated with **Lifetime Achievement Award** in Technology Development and Innovation, on World Environment Day 2024, 05-06-2024, by Centre for Research in Environment, Sustainability Advocacy and Climate Change, SRMIST, KTR






**Congratulations Dr. S. Prabhakar on receiving the Lifetime Achievement Award! Your dedication, passion, and hard work over the years have truly made a lasting impact. This award is a testament to the incredible contributions you've made to the field and the inspiration you've provided to so many!**

# Achievements and Awards

| S. No. | Name of the Student/ Research Scholar & Faculty | Title of the Presentation | Event | Awarding Agency | Date | Award |
|---|---|---|---|---|---|---|
| 1. | **K. Balaguru** (RA2312012010007) I Year M.Tech. & **Dr. S. Vishali** | Transformation of Floral Waste into Value-Added Products: A Sustainable Approach Towards Decent Work and Economic Growth- Poster | International Conference on New Horizons in Bioengineering: Fostering Academia-Industry Partnership (ICB - 2024) | School of Bioengineering, CET, SRMIST, KTR | 16-02-2024 | I Prize for Poster Presentation |
| 2. | **Madhavan V** (RA2212012010010) II Year M. Tech. & **Dr. S. Kiruthika** | Green Hydrogen Production through Alkaline Water Electrolysis | Chemflux 11.0, A National Level Technical Symposium | Department of Chemical Engineering, CET, SRMIST, KTR | 21-02-2024 to 23-02-2024 | II Prize for Oral Presentation |
| 3. | **Shahul Hameed A** (RA2212012010008) II Year M. Tech. & **Dr. S. Sam David** | Predicting Particle Size Distribution – A Machine Learning Approach | Chemflux 11.0, A National Level Technical Symposium | Department of Chemical Engineering, CET, SRMIST, KTR | 21-02-2024 to 23-02-2024 | III Prize for Poster Presentation |
| 4. | **D. Alice Jasmine** (RA2113010011035) Research Scholar & **Dr. K. Tamilarasan** | Optimization of Enhanced Sugar Recovery from Sugarcane Leaf Waste Under Microwave-Assisted Alkaline Treatment: Sustainable Strategies and Physiochemical Structure Characterization | Research Day | SRMIST, KTR | 04-03-2024 | Gold Medal |
| 5. | **Takumi Nagasaka** (RA2213008011001) Research Scholar & **Dr. G. Keerthiga** | Green Synthesis of Copper MOF for Electrochemical Reduction of CO2 | | | | Silver Medal |

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| 6. | **Monica A**<br>(RA2113008011001)<br>Research Scholar<br>&<br>**Dr. K. Anbalagan** | Decontamination of Endocrine-Disrupting Compounds from Aqueous Solution by Adsorption Method | Dr. Paarivendhar Research Colloquium (DPRC - 2024) | SRMIST, KTR | 26-03-2024 | First Prize for Poster Presentation |
| 7. | **Shahul Hameed A**<br>(RA2212012010008)<br>II Year M. Tech.<br>&<br>**Dr. E. Poonguzhali** | Separation of phenolic compounds from aqueous solution by membrane assisted solvent extraction | Chem Project Expo (CPE – 2024) | Department of Chemical Engineering, CET, SRMIST, KTR | 26-04-2024 | First Prize for Poster Presentation |
| 8. | **Sredha J Nair**<br>(RA2212012010005)<br>II Year M. Tech.<br>&<br>**Dr.G. Keerthiga** | Photocatalytic remediation of nitrophenol using Ti nanotubes composites | Chem Project Expo (CPE – 2024) | Department of Chemical Engineering, CET, SRMIST, KTR | 26-04-2024 | First Prize for Poster Presentation |
| 9. | **Hareesh Balaji R**<br>(RA2011007010015)<br>**Suriya U**<br>(RA2011007010025)<br>IV Year B. Tech.<br>&<br>**Dr. S. Sam David** | Extended Fin Electrode System for Electrochemical Coagulation in Washing Machine Laundry Water Treatment | Chem Project Expo (CPE – 2024) | Department of Chemical Engineering, CET, SRMIST, KTR | 26-04-2024 | First Prize for Poster Presentation |
| 10. | **S. Sheik Mohamed Wahith**<br>(RA2011007010005)<br>**Sughanandhan K.**<br>(RA2011007010021)<br>**Turumella Venkata Vighnesh**<br>(RA2011007010033)<br>IV Year B. Tech.<br>&<br>**Dr. M. Magesh Kumar** | Removal of malachite green dye using surface modified mango seed adsorbent | Chem Project Expo (CPE – 2024) | Department of Chemical Engineering, CET, SRMIST, KTR | 26-04-2024 | Second Prize |
| 11. | **Rohith Ram Shanmugam**<br>(RA2011007010013)<br>IV Year B. Tech.<br>&<br>**Dr. S. Sam David** | E- waste segregation – Batch gas solid fluidization | Chem Project Expo (CPE – 2024) | Department of Chemical Engineering, CET, SRMIST, KTR | 26-04-2024 | Third Prize |
| 12 | **Ranjith R**<br>(RA2111007010021)<br>III Year B. Tech. | Crosswords | Chemflux 11.0, A National Level Technical Symposium | Department of Chemical Engineering, CET, SRMIST, KTR | 21-02-2024 to 23-02-2024 | First Prize |

# Technical Expert Members/ Resource Person

| S. No. | Name of the Faculty | Position Held | Event | Organized by | Date(s) |
|---|---|---|---|---|---|
| 1. | **Dr. S. Vishali** | Reviewer | Subject matter expert in the "Ideas to Impact (i2I)" Carbon Zero Challenge 4.0, a nationwide competition spearheaded by IIT Madras and supported by Wipro Foundation | IIT Madras | 02-01-2024 to 15-01-2024 |
| 2. | **Dr. K. Suresh** | Resource Person | Webinar on Process Modeling and Simulation in Chemical Engineering | Department of Chemical Engineering, KPR Institute of Engineering and Technology, Coimbatore | 29-01-2024 |
| 3 | **Dr. E. Kavitha** | Reviewer | Environmental Science and Pollution Research | | February 2024 |
| 4. | **Dr. S. Vishali** | Reviewer | Euro-Mediterranean Conference of Environmental Integration | In Partnership with the editorial office of the Euro-Mediterranean Journal Environmental Integration organizes the 6th EMCEI at the Congress Center of the University of Cadi Ayyad (UCA) in Marrakesh, Morocco | |
| 5. | **Dr. S. Vishali**<br>**Dr. E. Kavitha**<br>**Dr. K. Deepa**<br>**Dr. K. Tamilarasan** | Judge-Poster/Oral Presentation | International Conference on New Horizons in Bioengineering: Fostering Academia-Industry Partnership (ICB - 2024) | School of Bioengineering, CET, SRMIST, KTR | 15-02-2024 |

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| 6. | **Dr. G. Keerthiga** | Guest Lecture | Commercialization and Technology Transfer in Pharmaceutical Industries using Artificial Intelligence and Machine Learning | Gnanamani College of Technology, Namakkal | 16-02-2024 |
| 7. | **Dr. S. Vishali** | Advisory Committee Member | International Conference on Advances in Chemical, Biochemical and Microbial Technology for Sustainable Development (ACBMT 2024) | Department of Chemical Engineering, Hindusthan College of Engineering and Technology, Coimbatore | 25-03-2024 & 26-03-2024 |
| 8. | **Dr. K. Suresh** | Academic Expert Member | Board of Studies | Department of Chemical Engineering, Saveetha Engineering College, Thandalam | 2022 – 2023 to 2024 – 2025 |
| 9. | **Dr. E. Kavitha** | Reviewer | Case Studies in Chemical and Environmental Engineering | | March 2024 |
| 10. | **Dr. S. Anandhakumar** | Guest Lecture on MoS2 Based Self-Propelled Soft Nanorobots for Biomedical Applications | National Conference on Sustainable Ceramics. Pioneering Progress through Industry Academia-Research Fusion | Anna University, Chennai | 18-03-2024 |

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| 11. | **Dr. K. Deepa** | Reviewer | Biomass Conversion and Biorefinery, Springer | | 07-04-2024 |
| 12. | **Dr. E. Kavitha** | Reviewer | International Journal of Biological Macromolecules | | April 2024 |
| 13. | **Dr. P. Muthamilselvi** | Question Paper Scrutiny Member for UG and PG | | Anna University | 03-05-2024 |
| 14. | **Dr. S. Vishali** | The District Level Award Selection Committee Member | Tamil Nadu Green Champion Awards (TNGCA) | Tamil Nadu Pollution Control Board (TNPCB) at the District Collectorate of Chengalpattu | 09-05-2024 |


**Dr. S. Vishali with Thiru A.R. Rahul Nadh, I.A.S, Director, Department of Environment and Climate Change, Government of Tamil Nadu** and Dr. Indumathi M. Nambi, Professor, Civil Engineering, IIT Madras, being honored as the subject matter expert in Ideas to Impact (i2I) Challenge - Announcement of Top 25 Teams, a nationwide competition spearheaded by IIT Madras

**Dr. S. Vishali with Thiru S. Arunraj I.A.S. District Collector of Chengalpattu, during Tamil Nadu Green Champion Award selection**

# Faculty Abroad Program

**Dr. S. Anandhakumar,** Associate Professor had the opportunity to visit **Daegu Gyungbuk Institute of Science and Technology, Republic of Korea,** through SERB International Research Experience (SIRE) Fellowship from 11th September 2023 to 10th March 2024.

Dr. S. Anandhakumar had an opportunity to work with the Scientist Prof. Sukho Park, Department of Robotics and Mechatronics Engineering, Multiscale Biomedical Robotics Laboratory, Daegu Gyungbuk Institute of Science and Technology, Republic of Korea in the area of Multifunctional Nanorobots Based on MoS2 Nanoflowers: An Effective System with Enhanced Photothermal Conversion Efficiency for Magnetically Actuated Drug Delivery, Synergistic Chemo-Photothermal therapy and Cancer Cell Imaging.

A novel nanozyme based hybrid theranostics system with an ability for photo-thermal therapy, chemotherapy and imaging at a single platform was developed for advanced cancer therapy. The planned study made to move a step closer to fabricating self-delivering nanorobots for multi-modal (diagnostic, imaging and combinatorial therapy) next generation cancer therapy. Hence, it will open up new ways to diagnose and treat cancer cells. The movement of externally controlled self-propelled multifunctional nanorobots was precisely controlled in a defined manner using a microscope/electromagnetic actuation (EMA) integrated system. It is the first attempt to fabricate nanorobots based on 2D materials (MoS2 nanoflowers act as nanozymes) for synergistic cancer therapy. The established collaboration with the host organization will be sustained via future joint grant-bids, student exchange and visiting faculty programs

# Oral/Poster – Presentations

**Event I:** International Conference on New Horizons in Bioengineering: Fostering Academia-Industry Partnership (ICB - 2024) organized by School of Bioengineering, CET, SRMIST, KTR from 14-02-2024 to16-02-2024.

**Total number of presentations – 33**

| S. No. | Name of the Student/ Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1. | **Vignesh R**<br>(RA2312012010001)<br>I Year M. Tech. | Novel Membrane Developments - Poster |
| 2. | **Venkateswara Reddy**<br>(RA2312012010002)<br>I Year M. Tech. | Nanotechnology as an Emerging Technology for Treating Wastewater- Poster |
| 3. | **Antony Sebastian**<br>(RA2312012010003)<br>I Year M. Tech.<br>&<br>**Dr. E. Kavitha** | Biofilter - Poster |
| 4. | **Shemaiah Sam**<br>(RA2312012010004)<br>I Year M. Tech.<br>&<br>**Dr. E. Poonguzhali** | Synergistic process for the removal of nickel from industrial effluents - Poster |
| 5. | **Dinesh S**<br>(RA2312012010005)<br>I Year M. Tech. | Applications of Graphene Oxide in Paint- Poster |
| 6. | **Sandeep**<br>(RA2312012010006)<br>I Year M. Tech. | Reverse Osmosis and It's Development- Poster |
| 7. | **Monish Kumar P**<br>(RA2312012010008)<br>I Year M. Tech. | Forward Osmosis |
| 8. | **Prabakaran P**<br>(RA2312012010009)<br>I Year M. Tech. | Fuel Cell Varieties Characteristics- Poster |
| 9. | **Arvind Kumar R**<br>(RA2212012010001)<br>II Year M. Tech.<br>&<br>**Dr. S. Vishali** | Low-Cost Greywater Treatment using Coagulation, Electrocoagulation and Membrane Processes- Oral |
| 10. | **Sivabharathvaj P**<br>(RA2212012010002)<br>II Year M. Tech.<br>&<br>**Dr. K. Suresh** | Transportation of Crude Oil through Pipeline- Poster |

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| 11. | **Veerubhotla Anil Datta**<br>(RA2212012010003)<br>II Year M. Tech.<br>&<br>**Dr. S. Sam David** | Modelling the Adsorption Characteristics of Silica Gel- Poster |
| 12. | **Sruthi J Nair**<br>(RA2212012010004)<br>II Year M. Tech.<br>&<br>**Dr. K. Deepa** | TiO2 Based Nanocomposites for Photocatalytic Degradation of Petroleum Hydrocarbons- Oral |
| 13. | **Sredha J Nair**<br>(RA2212012010005)<br>II Year M. Tech.<br>&<br>**Dr. G. Keerthiga** | Photocatalytic remediation of pollutants by composites of Ag doped Ti nanotubes |
| 14. | **Hariprasath**<br>(RA2212012010006)<br>II Year M. Tech.<br>&<br>**Dr. K. Tamilarasan** | High Selective Conversion of Monosaccharide into Platform Chemicals by the Photothermal Strategy- Oral |
| 15. | **Irshana Shajahan**<br>(RA2212012010007)<br>II Year M. Tech.<br>&<br>**Dr. D. Nanditha** | Performance Studies of Superhydrophobic Membrane for Membrane Distillation- Oral |
| 16. | **Shahul Hameed A**<br>(RA2212012010008)<br>II Year M. Tech.<br>&<br>**Dr. E. Poonguzhali** | Extraction of phenol from aqueous solution using green solvents |
| 18. | **Madhavan V**<br>(RA2212012010010)<br>II Year M. Tech.<br>&<br>**Dr. S. Kiruthika** | Green Hydrogen Production through Alkaline Water Electrolysis - Poster |
| 19. | **Muthu Venkatesh A**<br>(RA2212012010011)<br>II Year M. Tech.<br>&<br>**Dr. M. P. Rajesh** | Spatial Distribution and Non-Carcinogenic Health Risk Assessment of Perchlorate in Groundwater Locations of Chennai City- Poster |
| 20. | **Rishi Praneash K B**<br>(RA2212012010012)<br>II Year M. Tech.<br>&<br>**Dr. P. Muthamilselvi** | Comparison of Effective Classification and Approaches to Valorization of Different Biomass Waste in Food and Agriculture for Energy Recovery- Poster |
| 21. | **Alen Augustin**<br>(RA2011007010008)<br>**Mahima Verma**<br>(RA2011007010014)<br>**Obaid Hassan**<br>(RA2011007010026)<br>IV Year B. Tech.<br>&<br>**Dr. P. Muthamilselvi** | Predicting Pharmaceutical Effluent Levels in Wastewater: A Machine Learning Approach- Poster |
| 22. | **Hareesh Balaji R**<br>(RA2011007010015)<br>**Suriya U**<br>(RA2011007010025)<br>IV Year B. Tech.<br>&<br>**Dr. S. Sam David** | Enhancing Water Sustainability: Electrochemical Purification with Stacked Extended Fin Electrodes for Efficient Laundry Wastewater Treatment - Oral |

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| 23. | **P. Ramesh**<br>(RC2113008011001)<br>Research Scholar<br>&<br>**Dr. K. Suresh** | Performance Evaluation of Hollow-Fiber Membrane Distillation as Compared with Double Pipe Heat Exchanger - Oral |
| 24. | **Meenu Mariam Jacob**<br>(RC2113008011003)<br>Research Scholar<br>&<br>**Dr. P. Muthamilselvi** | Adsorptive Removal of Chlorpyrifos using Biochar Mixed Matrix Membrane |
| 25. | **Monica. A**<br>(RA2113008011001)<br>Research Scholar<br>&<br>**Dr. K. Anbalagan** | Decontamination of Endocrine-Disrupting Chemicals from the Aqueous Solution using Low-Cost Sorbents: A Batch and Column Study - Oral |
| 26. | **Hussain Albattah Alhusni**<br>(RA2113008011002)<br>Research Scholar<br>&<br>**Dr. K. Suresh** | Assessment of Thermal Behavior in Homogeneous Fruit Juices- Oral |
| 27. | **Parthasarathi R.R**<br>(RA2313008011001)<br>Research Scholar | Extraction of Wax from Wax-Coated Cardboard Box - Poster |
| 28. | **Ponmani V**<br>(RA2313008011002)<br>Research Scholar<br>&<br>**Dr. S. Kiruthika** | Electrolytic Hydrogen Generation from Alkaline Water: A Clean Energy Approach- Oral |
| 29. | **Abinaya M B**<br>(RA2113010011020)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | Development of Bismuth Based Photocatalyst for Efficient Photocatalytic Degradation of Tetracycline Antibiotic under Visible Light Irradiation- Oral |
| 30. | **Alice Jasmine D**<br>(RA2113010011035)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | Microwave-Assisted System Development for Sugarcane Leaf Fractionation: Process Optimization and Physiochemical Structure Characterization- Oral |
| 31. | **Udita Gulia**<br>(RA2113010011030)<br>Research Scholar<br>&<br>**Dr. M. P. Rajesh** | Efficient Extraction of Lipids from Wet Microalgae Biomass Utilising Protic Ionic Liquids - Poster |
| 32. | **V. Ponmani**<br>(RA2313008011002)<br>Research Scholar<br>&<br>**Dr. S. Kiruthika** | Electrolytic Hydrogen Generation from Alkaline Water – A Clean Energy Approach |
| 33. | **Madhavan S**<br>(RA2212012010010)<br>II Year M. Tech.<br>&<br>**Dr. S. Kiruthika** | Design of Alkaline Electrolyzer for Hydrogen Production |

**Event II:** 8th International Conference on "Recent Advancements in Chemical, Environmental & Energy Engineering (RACEEE 2024) organized by the Department of Chemical Engineering, Sri Sivasubramaniya Nadar College of Engineering in association with the Indian Institute of Chemical Engineers (IIChE), Kalavakkam, TN during 15-02-2024 & 16-02-2024

**Total number of presentations – 3**

| S. No. | Name of the Student/Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **Dr. S. Kiruthika** | Micro-encapsulation of struvite (MgNH4PO4.6H2O) fertilizer recovered from wastewater using microbial fuel Cell technology |
| 2 | **Vishnu Ganesh J** (RA2011007010016) **Prasanna S** (RA2011007010042) **Subramani S** (RA2011007010059) IV Year B. Tech. & **Dr. E. Poonguzhali** | Studies in treatment of industrial effluents to recover valuables using tubular polypropylene membrane |
| 3 | **Bharath S** (RA2011007010053) **Satheeshkumar R** (RA2011007010055) **Abimanu R** (RA2011007010056) IV Year B. Tech. & **Dr. S. Vishali** | Studies on Extraction of Natural Dyes from Floral Refuse |

**Event III:** Chemflux 11.0, A National Level Technical Symposium organized by the Department of Chemical Engineering, CET, SRMIST, KTR from 21-02-2024 to 23-02-2024

**Total number of presentations – 7**

| S. No. | Name of the Student/Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **R. Arvind Kumar** (RA2212012010001) II Year M. Tech. & **Dr. S. Vishali** | Low-Cost Hybrid Greywater Treatment System |

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| 2 | **Sivabharathvaj P**<br>(RA2212012010002)<br>II Year M. Tech.<br>&<br>**Dr. K. Suresh** | Deterministic Cost Estimation for Transporting Extra Heavy / Heavy Crude Oil from Chennai Port to Chennai Petroleum Corporation Limited (CPCL) Via Pipeline |
| 3 | **Veerubhotla Anil Datta**<br>(RA2212012010003)<br>II Year M. Tech.<br>&<br>**Dr. S. Sam David** | Optimizing Moisture Control in Ac Train Interiors: Mass, Size, and Placement Strategies of Silica Gel |
| 4 | **Sredha J. Nair**<br>(RA2212012010005)<br>II Year M. Tech.<br>&<br>**Dr. G. Keerthiga** | Photocatalytic Remediation of Nitrophenol using Ti Nanotubes Composites |
| 5 | **Hariprasath**<br>(RA2212012010006)<br>II Year M. Tech.<br>&<br>**Dr. K. Tamilarasan** | Highly Efficient Conversion of Carbohydrates into Platform Chemicals |
| 6 | **Muthu Venkatesh A**<br>(RA2212012010011)<br>II Year M. Tech.<br>&<br>**Dr. M. P. Rajesh** | Spatial Distribution and Non-Carcinogenic Health Risk Assessment of Perchlorate in Groundwater Locations of Chennai City |
| 7 | **Muhammad Abdul Khader**<br>(RA2211007010008)<br>II Year B. Tech. | Machine Learning Applications for Predictive Maintenance in Chemical Plants |

**Event IV:** Research Day presentations organized by the Department of Chemical Engineering, CET, SRMIST, KTR on 04-03-2024

**Total number of presentations – 10**

| S. No. | Name of the Student/ Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **Yuvaraj K. M.**<br>(RA2212012010009)<br>II Year M. Tech.<br>&<br>**Dr. E. Kavitha** | Separation of Methylene Blue from Wastewater by Polymer Enhanced Ultrafiltration |
| 2 | **Abinaya M B**<br>(RA2113010011020)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | Designing a bismuth-based heterojunction for the photocatalytic degradation of pharmaceutical pollutants in wastewater |
| 3 | **Takumi Nagasaka**<br>(RA221300801101)<br>Research Scholar<br>&<br>**G. Keerthiga** | Green Synthesis of Copper MOF for Electrochemical Reduction of CO2 |

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| 4 | **V. Ponmani** (RA2313008011002) Research Scholar & **Dr. S. Kiruthika** and Balaji S | Hydrogen production by electrolysis |
| 5 | **D. Alice Jasmine** (RA2113010011035) Research Scholar & **Dr. K. Tamilarasan** | Optimization of enhanced sugar recovery from sugarcane leaf waste under microwave-assisted alkaline treatment: Sustainable strategies and Physicochemical structure characterization |
| 6 | **Sredha J Nair** (RA2212012010005) II Year M. Tech. & **Dr. G. Keerthiga** | Photocatalytic Remediation of Pollutants by Ag based Ti Nanotubes |
| 7 | **Parthasarathi R R** (RA2313008011001) Research Scholar & **Dr. S. Sam David** | Plastic segregation from E-waste: Batch Gas-Solid Fluidization |
| 8 | **Muthu Venkatesh A** (RA2212012010011) II Year M. Tech. & **Dr. M. P. Rajesh** | Spatial Distribution and Non-Carcinogenic Health Risk Assessment of Perchlorate in Groundwater Locations of Chennai City |
| 9 | **Sruthi J Nair** (RA2212012010004) II Year M. Tech. & **Dr. K. Deepa** | TiO2-Based Nanocomposites for Photocatalytic Degradation of Petroleum Hydrocarbons |
| 10 | **MD Shuaib Hameedh,** (RA2211007010027) **Meenakumari V** (RA2211007010048), **Rubasri P** (RA2211007010040), **Amalya V** (RA2211007010047), III Year & B.Tech. Mithuna G, Nateshwari M | Pure Innovation: Advancing Water Desalination through Membrane Technology |

**Event V:** International Conference on Advances in Mechanical Engineering (ICAME 2024) organized by the Department of Mechanical Engineering, CET, SRMIST, KTR from 20-03-2024 to 22-03-2024

**Total number of presentations – 3**

| S. No. | Name of the Student/Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **Hussain Al Husni** (RA2113008011002) Research Scholar & **Dr. K. Suresh** | Transient Velocity and Temperature Fields in A Container with Headspace |
| 2 | **V. Ganesh** (PA1813008012001) Research Scholar & **Dr. M.P. Rajesh** | Synthesis, Characterization and Thermal Property Estimation of Composite Nanofluids, their Comparison with Hybrid Nanofluids along with ANN based Optimization. |
| 3 | **Dr. S. Kiruthika** | Feasibility Assessment of Hydrothermal Carbonization for Food Waste to Biofuel |

**Event VI:** Dr. Paarivendhar Research Colloquium (DPRC – 2024) organized by SRMIST, KTR on 26-03-2024

**Total number of presentations – 7**

| S. No. | Name of the Student/Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **Takumi Nagasaka**<br>(RA2213008011001)<br>Research Scholar<br>&<br>**Dr. G. Keerthiga** | Green Synthesis of Copper MOF for Electrochemical Reduction of CO2 |
| 2 | **D. Alice Jasmine**<br>(RA2113010011035)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | Advanced Photothermal Catalytic Technique Utilized to Synthesize High Value Platform Chemicals from Pretreated Sugarcane Leaf Biomass |
| 3 | **M.B. Abinaya**<br>(RA2113010011020)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | In-Situ Growth of Direct Z-Scheme Bismuth based Photocatalysts for the Degradation of Antibiotic Residues |
| 4 | **Udita Gulia**<br>(RA2113010011030)<br>Research Scholar<br>&<br>**Dr. M. P. Rajesh** | Ionic Liquid Mediated Microalgal Cell Disruption and Biomolecules Extraction |
| 5 | **Hussain Albattah Al Husni**<br>(RA2113008011002)<br>Research Scholar<br>&<br>**Dr. K. Suresh** | Thermal Processing of Homogeneous Food Products |
| 6 | **Ponmani V**<br>(RA2313008011002)<br>Research Scholar<br>&<br>**Dr. S. Kiruthika** | Design and Fabrication of Alkaline Electrolyser for Green Hydrogen Production |
| 7 | **Parthasarathi R R**<br>(RA2313008011001)<br>Research Scholar<br>&<br>**Dr. S. Sam David** | Investigating the Influence of Fluidized Bed Column Height on Metals and Non-Metals Separation Efficiency in E-Waste Recycling |

**Event VII:** Chem Project Expo-2024 (CPE – 2024) organized by the Department of Chemical Engineering, CET, SRMIST, KTR during 25-04-2024 and 26-04-2024

**Total number of presentations – 26**

| S. No. | Name of the Student/Research Scholar & Faculty | Title of the Paper/Poster Presented |
|---|---|---|
| 1 | **R. Arvind Kumar**<br>RA2212012010001<br>II Year M.Tech.<br>&<br>**Dr. S. Vishali** | Low-Cost Hybrid Greywater Treatment System |

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|---|---|---|
| 2 | **Sivabharathvaj P**<br>(RA2212012010002)<br>II Year M. Tech.<br>&<br>**Dr. K. Suresh** | Deterministic Cost Estimation for Transporting Extra Heavy / Heavy Crude Oil from Chennai Port to Chennai Petroleum Corporation Limited (CPCL) Via Pipeline |
| 3 | **Veerubhotla Anil Datta**<br>(RA2212012010003)<br>II Year M. Tech.<br>&<br>**Dr. S. Sam David** | Optimizing Moisture Control in Ac Train Interiors: Mass, Size, and Placement Strategies of Silica Gel |
| 4 | **Sruthi J Nair**<br>(RA2212012010004)<br>II Year M. Tech.<br>&<br>**Dr. K. Deepa** | TiO2 Based Nanocomposites for the Photocatalytic Degradation of Petroleum Hydrocarbons |
| 5 | **Hariprasath**<br>(RA2212012010006)<br>II Year M. Tech.<br>&<br>**Dr. K. Tamilarasan** | Highly Efficient Conversion of Carbohydrates into Platform Chemicals |
| 6 | **Irshana Shajahan**<br>(RA2212012010007)<br>II Year M. Tech.<br>&<br>**Dr. D. Nanditha** | Performance Study of TEO Grafted ZnO Hydrophobic Membrane for Isopropyl Alcohol Separation by Vacuum Membrane Distillation |
| 7 | **Yuvaraj K.M.**<br>(RA2212012010009)<br>II Year M. Tech.<br>&<br>**Dr. E. Kavitha** | Separation<br>of Textile Dye from Wastewater by Complexation Ultrafiltration |
| 8 | **Madhavan V**<br>(RA2212012010010)<br>II Year M. Tech.<br>&<br>**Dr. S. Kiruthika** | Design and Fabrication of Alkaline Electrolyzer for Hydrogen Production |
| 9 | **Rishi Praneash K B**<br>(RA2212012010012)<br>II Year M. Tech.<br>&<br>**Dr. P. Muthamilselvi** | Recovery of Valuable Products from Food Waste |
| 10 | **Souvik Ghosh**<br>(RA2011007010018)<br>**Siddarth Murugesan**<br>(RA2011007010020)<br>**Vigneshwara M.**<br>(RA2011007010065)<br>IV Year B. Tech.<br>&<br>**Dr. K. Suresh** | Use of dynamic simulation for reactor safety analysis |
| 11 | **Ilansuriyan A.**<br>(RA2011007010024)<br>**Gridharan K.**<br>(RA2011007010037)<br>**Yogeshwar K.**<br>(RA2011007010066)<br>IV Year B. Tech.<br>&<br>**Dr. M. P. Rajesh** | Low-cost biochar composite adsorbents for removal of microplastics from wastewater |

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| 12 | **Subiksha V.**<br>(RA2011007010045)<br>**Dony Dimel S.**<br>(RA2011007010050)<br>**Ruban Kumar S.**<br>(RA2011007010051)<br>IV Year B. Tech.<br>&<br>**Dr. K. Tamilarasan** | Catalytic conversion of lignocellulose based monosaccarides to platform chemicals |
| 13 | **Bharath S**<br>(RA2011007010053)<br>**Satheeshkumar R**<br>(RA2011007010055)<br>**Abimanu R**<br>(RA2011007010056)<br>IV Year B. Tech.<br>&<br>**Dr. S. Vishali** | Extraction of value-added products from the refuse |
| 14 | **Anuragh R.**<br>(RA2011007010011)<br>**Aditya Rajan**<br>(RA2011007010040)<br>**Pol Risik Kashyap**<br>(RA2011007010063)<br>IV Year B. Tech.<br>&<br>**Dr. M. Magesh Kumar** | Sand filtration of raw wastewater using fine sand activated carbon, gravels and coconut shell as an alternative filtration media |
| 15 | **Rishabh Padh**<br>(RA2011007010030)<br>**Tanisha Panigrahi**<br>(RA2011007010038)<br>**Yuvan Sai Potru**<br>(RA2011007010047)<br>IV Year B. Tech.<br>&<br>**Dr. K. Anbalagan** | Process optimisation to extraction technologies for butterfly pea flower (Clitoria ternatea) |
| 16 | **Adithyan M. N.**<br>(RA2011007010031)<br>**Hredhya Sudheer**<br>(RA2011007010049)<br>IV Year B. Tech.<br>&<br>**Dr. K. Anbalagan** | Sorption kinetics and isotherms studies of dye, and Phenolic compounds using Arachis hypogaea modified chitosan nanoparticles as low-cost adsorbent |
| 17 | **Anuj Kakani**<br>(RA2011007010010)<br>**Shreeragh K. P.**<br>(RA2011007010028)<br>**Anshrul Gupta**<br>(RA2011007010039)<br>IV Year B. Tech.<br>&<br>**Dr. K. Selvam** | Fruit juice concentration using membranes |

| | | |
|---|---|---|
| 18 | **Atin Chattopadhyay**<br>(RA2011007010002)<br>**Saloni Battacharjee**<br>(RA2011007010004)<br>IV Year B. Tech.<br>&<br>**Dr. K. Sofiya** | Effect of sonication time on solvent extraction |
| 19 | **Devanjali Jayan**<br>(RA2011007010017)<br>**Rohith M.**<br>(RA2011007010034)<br>IV Year B. Tech.<br>&<br>**Dr. E. Kavitha** | Separation of malachite green dye from aqueous stream by polymer enhanced ultrafiltration |
| 20 | **Irene Chandrashekhar Parkar**<br>(RA2011007010006)<br>IV Year B. Tech.<br>&<br>**Dr. E. Kavitha** | Separation of methyl orange from textile dye effluent using complexation ultrafiltration |
| 21 | **Vishnu Ganesh J**<br>(RA2011007010016)<br>**Prasanna S**<br>(RA2011007010042)<br>**Subramani S**<br>(RA2011007010059)<br>IV Year B. Tech.<br>&<br>**Dr. E. Poonguzhali** | Design and fabrication of tubular membrane module for the separation of phenol from wastewater |
| 22 | **Alen Augustin**<br>(RA2011007010008)<br>**Mahima Verma**<br>(RA2011007010014)<br>**Obaid Hassan**<br>(RA2011007010026)<br>IV Year B. Tech.<br>&<br>**Dr. P. Muthamilselvi** | Potential application of machine learning in prediction of degradation efficiency of tetracycline hydrochloride using Fe-biochar catalyst |
| 23 | **Vishvaa T.**<br>(RA2011007010054)<br>**Hareesh M.**<br>(RA2011007010057)<br>**Sanjay Ram M.**<br>(RA2011007010060)<br>IV Year B. Tech.<br>&<br>**Dr. D. Nanditha** | Congo red dye removal using SiO2/ZnO Nano composites PVDF membrane in membrane distillation |
| 24 | **Reshma R.**<br>(RA2011007010044)<br>**Dhanushmani R.**<br>(RA2011007010052)<br>**Varsha Sakthivel**<br>(RA2011007010064)<br>IV Year B. Tech.<br>&<br>**Dr. K. Deepa** | Photocatalytic degradation of dyes using ZnO and metal doped ZnO nanoparticles |

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|---|---|---|
| 25 | **Janarthanan C.**<br>(RA2011007010058)<br>**Nivash R.**<br>(RA2011007010061)<br>**Sachin P.**<br>(RA2011007010062)<br>IV Year B. Tech.<br>&<br>**Dr. G. Keerthiga** | Development of salt water based portable mobile charger |
| 26 | **Kanishka G.**<br>(RA2011007010003)<br>IV Year B. Tech.<br>&<br>**Dr. G. Keerthiga** | Integrated nutrient recovery system: Ammonia extraction from urine for suitable hydroponic farming |

# Presentations in other Events

| S. No. | Name of the Student/ Research Scholar & Faculty | Title of the Paper/Poster Presented | Event | Organized by | Date |
|---|---|---|---|---|---|
| 1. | **Alice Jasmine D**<br>(RA2113010011035)<br>Research Scholar<br>&<br>**Dr. K. Tamilarasan** | Symbiotic Sustainable development of microwave-assisted chemical additive treatment of sugarcane leaf waste: Effect on physiochemical structure and process optimization | International Conference on Science & Technology Integration for Circular Economy | BITS Pilani, Hyderabad Campus | 18-01-2024 & 19-01-2024 |
| 2 | **Takumi Nagasaka**<br>(RA2213008011001)<br>Research Scholar<br>&<br>**Dr. G. Keerthiga** | Green Synthesis of Copper MOF for Electrochemical Reduction of CO2 | International Conference on Advanced Functional Materials and Devices (AFMD-2024) | Nanotechnology Research Centre, SRMIST, KTR | 26-02-2024 to 29-02-2024 |
| 3 | **Mr. V. Ganesh** | Role of nanocoolant in optimizing heat transfer | International Conference on Recent Trends in Science, Technology and Management (ICRTSTM) 2024 | Bharati Vidyapeeth's College of Engineering for Women, Pune & RSP Conference Hub, Coimbatore | 28-06-2024 To 29-06-2024 |

# Events Participated by Faculty

| S. No. | Name of the Faculty | Event Name | Event Title | Organizer | Date |
|---|---|---|---|---|---|
| 1. | **Dr. E. Poonguzhali**<br>**Dr. S. Kiruthika**<br>**Dr. S. Vishali** | National Seminar with Workshop | National Seminar with Workshop on ChatGPT & AI | Technex' 24, IIT Varanasi delivered by Innovians Technologies (India) held at Presidency College, Chennai | 09-01-2024 & 10-01-2024 |
| 2. | **Dr. P. Muthamilselvi** | UGC-Approved Short-Term Programme | Qualitative and Quantitative Assessment of Marine Microplastics | Department of Civil Engineering, CET, SRMIST, KTR | 29-01-2024 to 03-02-2024 |
| 3. | **Dr. S. Vishali** | UGC-Approved Short-Term Programme | Design & Development of e-Content for Online Learning and MOOCs | STRIDE, IGNOU, New Delhi. | 29-01-2024 to 03-02-2024 |
| 4. | **Dr. S. Kiruthika** | Five days Online Faculty Development Programme | Modelling, AI /ML in Chemical Engineering and Bioengineering | Department of Chemical Engineering, Coimbatore Institute of Technology, Tamil Nadu | 05-02-2024 to 09-02-2024 |
| 5. | **Dr. S. Kiruthika**<br>**Dr. E. Kavitha**<br>**Dr. D. Nanditha** | 1 Week Short Term Course | Green Hydrogen and Fuel Cell Technology | Department of Chemical Engineering, Malaviya National Institute of Technology, Jaipur | 19-02-2024 to 23-02-2024 |
| 6. | **Dr. S. Vishali** | Two days Workshop | Capacity Building for Women-Research in Practice | Department of Computing Technologies, Green Computing Research Vertical, SRMIST,KTR | 20-02-2024 & 21-02-2024 |
| 7. | **Dr. D. Nanditha** | Six Days Online Faculty Development Program | The Role of Artificial Intelligence in Engineering Applications | Department of Mechanical Engineering, School of Engineering and Technology, Centurion University, Odisha | 27-05-2024 to 01-06-2024 |

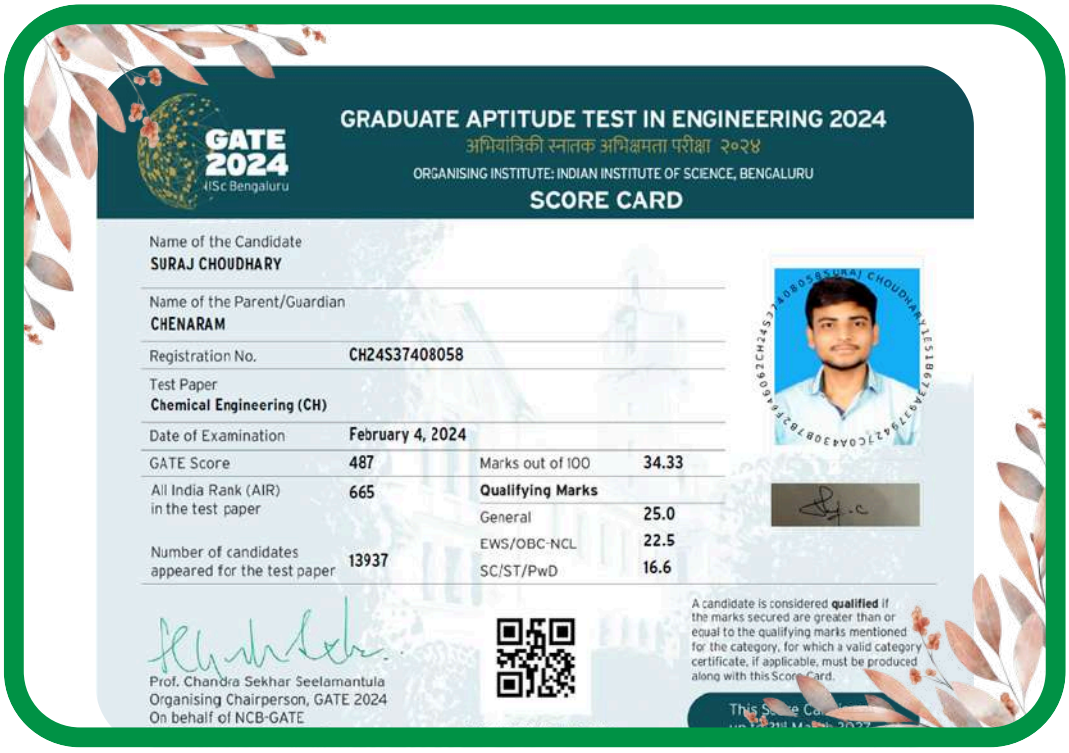
| | | | | | |
|---|---|---|---|---|---|
| **8** | **Dr. S. Vishali** | SRM Phoenix Award, SRM Revolutionary Research on Clean Water Sustainability Award | World Environmental Day 2024 | Centre for Research in Environment, Sustainability Advocacy and Climate CHange (REACH), Directorate of Research, SRMIST, KTR | 10-06-2024 |

# Events Participated by Students

| S. No. | Name of the Student/ Research Scholar | Event Name | Event Title | Organizer | Date |
|---|---|---|---|---|---|
| 1. | **MD Shauib Hameedh** (RA2211007010027) II Year B. Tech. | Project Expo '24 | Empowering Tomorrow's Energy | Department of Computational Intelligence, School of Computing, CET, SRMIST, KTR | 15-02-2024 & 16-02-2024 |
| 2 | **MD Shauib Hameedh** (RA2211007010027) II Year B. Tech. | Workshop Participation | ASPEN PLUS Workshop - CHEMFLUX 11.0 | Department of Chemical Engineering, CET, SRMIST, KTR | 21-02-2024 |
| 3 | **Chaiti Harin Butch** (RA2211007010028) II Year B. Tech. | Conference Participation | Annual District Rotaract Conference – Changing Gears | District Rotaract Council of Rotary International District 32323 held at Ethiraj College of Women, Chennai | 24-02-2024 to 25-02-2024 |
| 4 | **Chaiti Harin Butch** (RA2211007010028) II Year B. Tech. | Pals Theory to Practice Lecture | Biomass to Value Added Products- A Sustainable Approach | PALS 2023-2024 | 01-03-2024 |
| 5 | **MD Shauib Hameedh** (RA2211007010027) II Year B. Tech | Unstop -Talent Park Tech | MCQ + Coding Assessment | Unstop, CET, SRMIST, KTR | 01-03-2024 |

# Competitive Exams Participated by the Students

**Suraj Choudhary** (RA2011007010046), IV Year B. Tech. student Qualified GATE (CH24537408058) with AIR-665 and Score – 487.



GATE 2024
IISc Bengaluru

GRADUATE APTITUDE TEST IN ENGINEERING 2024
अभियांत्रिकी स्नातक अभिक्षमता परीक्षा २०२४
ORGANISING INSTITUTE: INDIAN INSTITUTE OF SCIENCE, BENGALURU
SCORE CARD

| | | | |
|---|---|---|---|
| Name of the Candidate | SURAJ CHOUDHARY | | |
| Name of the Parent/Guardian | CHENARAM | | |
| Registration No. | CH24S37408058 | | |
| Test Paper | Chemical Engineering (CH) | | |
| Date of Examination | February 4, 2024 | | |
| GATE Score | 487 | Marks out of 100 | 34.33 |
| All India Rank (AIR) in the test paper | 665 | Qualifying Marks | |
| | | General | 25.0 |
| Number of candidates appeared for the test paper | 13937 | EWS/OBC-NCL | 22.5 |
| | | SC/ST/PwD | 16.6 |

Prof. Chandra Sekhar Seelamantula
Organising Chairperson, GATE 2024
On behalf of NCB-GATE

A candidate is considered **qualified** if the marks secured are greater than or equal to the qualifying marks mentioned for the category, for which a valid category certificate, if applicable, must be produced along with this Score Card.

**Huge congratulations to Suraj Choudhary for successfully clearing the GATE exam! This is an incredible achievement that reflects your dedication and brilliance. Wishing you the very best in all your future endeavors!**

# On Campus Placements – Jan to June, 2024 (B. Tech. Batch 2020 - 2024)

**Obaid Hassan**
(RA2011007010026)
Foxconn
Graduate Engineer
(Testing Engineer)
6.0 LPA

**Hareesh Balaji**
(RA2011007010015)
SPIC
Engineering Management
Service Trainee
4.8 LPA

**Hareesh M**
(RA2011007010057)
SPIC
Engineering Management
Service Trainee
4.8 LPA

**Rohith Ram Shanmugam**
(RA2011007010013)
Nilkamal
Plant Operator
4.4 LPA

**Surya U**
(RA2011007010025)
Shree Cements
Graduate Engineer
4.2 LPA

**Reshma R**
(RA2011007010044)
Royal Enfield (off Campus)
Manufacturing System
Engineer
3.5 LPA

**Varsha Sakthivel**
(RA2011007010064)
Royal Enfield (off Campus)
Manufacturing system Engineer
3.5 LPA

| | |
|---|---|
| **Number of students registered for placements** | **38** |
| **Total number of students placed (Academic Year 2023 - 2024)** | **28** |
| **Placement Percentage** | **73.6 %** |
| **Average Salary Package (INR)** | **5.2 LPA** |

# Internship

**Soundariya N** (RA2011007010009) IV Year B. Tech. student, got Internship in Gradiant India Private Limited with a stipend of Rs. 15,000 p.m.

# On Campus Placements (B. Tech. Batch 2021 - 2025)

**Palak Kachhawah**
(RA2111007010008)
Amazon
Manager I,
Operations Intern
29.5 LPA

## KUDOS DEARS!!

# Ph.D. Progress Details of Research Scholars

| S.No. | Name | Supervisor | Title/ Area of Research | Progress | Date |
|---|---|---|---|---|---|
| 1. | **Takumi Nagasaka** (RA2213008011001) | **Dr. G. Keerthiga** | Electrochemical Reduction of CO2 | Comprehensive Viva | 31-01-2024 |
| 2. | **Hussain Albattah Al Husni** (RA2113008011002) | **Dr. K. Suresh** | Assessment of Thermal Resistance in Pasteurization of Food Products | Comprehensive Viva | 04-03-2024 |

# New Membership in Technical Society

| S. No. | Name of the Faculty | Membership Category | Society Name |
|---|---|---|---|
| 1. | **Dr. E. Kavitha** | Life member | Solar Energy Society of India |
| 2. | **Dr. E. Poonguzhali**<br>**Dr. S. Vishali**<br>**Dr. K. Sofiya**<br>**Dr. K. Deepa**<br>**Dr. S. Kiruthika**<br>**Dr. D. Nanditha** | Associate member | The Institution of Engineers (India) IEI |

# Admission Activities

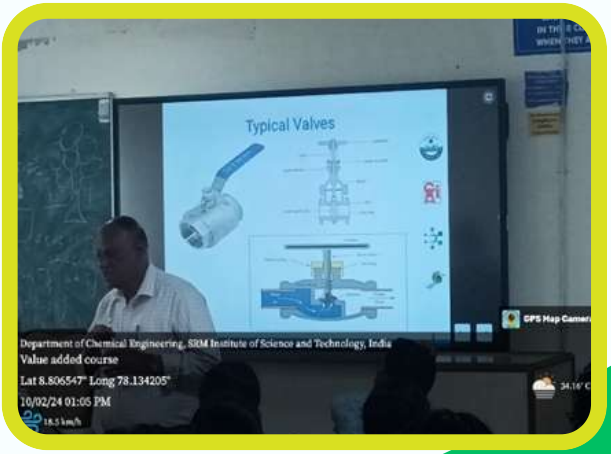
| S. No. | Faculty Coordinator | Event Title | Organizer | Date |
|---|---|---|---|---|
| 1. | **Dr. S. Sam David** | Admission Campaign | Daily Thanthi At Taj Marriage Hall, Chathiram Bus Stand, Trichy | 30-03-2024 & 31-03-2024 |

# Value-added course 18CHV321T Industry Oriented Knowledge Building (2023-2024)

**Date:** 10-02-2024 to 04-052024
**Faculty Coordinators:**
**Dr. D. Nanditha**, Assistant Professor, Chemical Engineering
**Dr. K. Anbalagan**, Assistant Professor, Chemical Engineering

**About the Course**
This course is meticulously designed to bridge the gap between traditional academic learning and the dynamic demands of the industry that enhances practical skills, industry exposure and holistic development. Learning from industry experts and seasoned professionals who bring their rich experience and knowledge into the classroom, case studies that simulate real industry challenges, offering a platform for experiential learning and to build a professional network through interactions with industry professionals, alumni, and peers, opening doors to internships and job placements.



**A glimpse of the various sessions during the Value-Added Course**

# Industrial Visit

**Place: Hatsun Agro Product Limited - Kancheepuram**
**Date:** 06-05-2024- One day visit
**No. of students:** 51(II Year B.Tech. Students)
**Faculty:** Dr. S. Kiruthika, Dr. E. Kavitha, Dr. K. Deepa, Dr. D. Nanditha & Dr. K. Selvam

## Homogenisation of milk

HAP is the world's first dairy company to develop and use thermal battery-based technology in its bulk milk coolers (BMC), for chilling milk immediately after procurement. It has worked extensively with a Boston-based US company in this regard. The bulk milk coolers run on thermal batteries which store electricity whenever available from the grid. The Ekomilk analysers, electronic weighing scales, display, stirrer, scanner, tablet and printers in all HMBs operate entirely on solar powered batteries. None of the company's HMBs has or requires any diesel generator backup for collecting milk, thereby avoiding environmental and sound pollution. Every HMB building has a rooftop solar panel and battery that can store 900 watts of power. The students visited the Research and Development centre. They learned the Gerber Method and Eko Milk Analyzers.



## Students visiting the Hatsun Agro Products Limited, Kancheepuram, Tamil Nadu

# Department Events Organized

## [1] Alumni Talk- Start-up Ecosystem and Investments how I sold my first start-up

## Date: 21-02-2024

**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering
**Chemflux Coordinator**
**Dr. K. Sofiya**, Assistant Professor, Chemical Engineering

**About the event**
Mr. G. N. Madhu, a distinguished multipreneur and prominent angel investor who is also an esteemed alumnus, inaugurated and delivered an insightful speech at Chemflux 11.0. Mr. Madhu encouraged students to hone their skills, maintain focus, and seize opportunities within the expansive field of chemical engineering. He emphasized the dedication and passion required for excellence in the field, advising students to emulate these qualities. His speech, highlighting the importance of skills, ambition, and minimizing distractions, struck a chord with the students, resonating deeply as he underscored the vast potential of chemical engineers in both engineering and business domains


## [2] Alumni Talk- Industrial Sector where a Chemical Engineer is useful

## Date: 23-02-2024

**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering
**Chemflux Coordinator**
**Dr. K. Sofiya**, Assistant Professor, Chemical Engineering

**About the event**
Ms. S. Esakkaiammal has been invited as the chief guest for the Valedictory function of Chemflux. As a member of an NGO and the project manager at Talent Quest for India Trust, she shared her journey from being a scholarship recipient to becoming a dedicated volunteer and now a professional contributing to Michelin's success. Her commitment to education, social causes, and professional development was evident in her speech. Esakkaiammal emphasized the positive impacts at Michelin that reflect her passion for sustainability, community engagement, and promoting diversity and inclusion. She encouraged students to pursue internships during their college days and engage in collaborative learning experiences.

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CHEMICAL ENGINEERING
Kattankulathur - 603 203, Tamil Nadu, India

The Department of Chemical Engineering, SRMIST, Kattankulathur along with the Directorate of Alumni Affairs (DAA) invites you to attend an

**ALUMNI TALK**

on

# "Industrial Sector where a Chemical Engineer is useful"

**23rd Feb 2024 Friday 2.30 to 4.00 PM**

**MR. ESAKKAIAMMAL SHENBAGARAMAN**
**Batch of 2016-2019**
Process industrializator
Michelin India Private ltd, Thiruvallur

**Venue**
G D Naidu Hall, Main campus, SRMIST

| CONVENORS | ALUMNI COORDINATORS | CHEMFLUX COORDINATOR |
|---|---|---|
| **Dr. A. RATHINAM,** Director, Alumni Affairs, SRMIST | **DR. M. P. RAJESH** Professor, Department of Chemical Engineering, SRM IST | **DR. K. SOFIYA** Assistant Professor, Department of Chemical Engineering, SRMIST |
| **DR. K. SURESH** HOD I/C, Chemical Engineering, SRMIST | **DR. G. KEERTHIGA** Assistant Professor, Department of Chemical Engineering, SRM IST | |


# [3] Alumni Talk- SRM as Catalyst for Launching Successful Industrial Careers
## Date: 21-03-2024

**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering

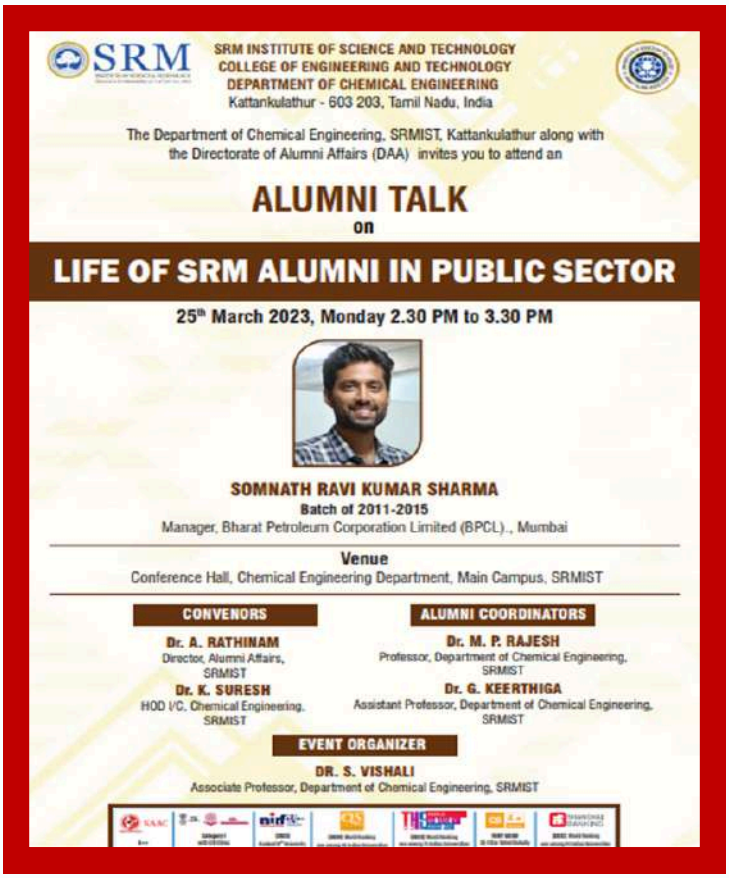
**About the event**
The objectives of the B. Tech. Chemical Engineering program include training graduates to meet the needs of Indian Chemical Industries. Mr. Balasubramanian Pillai is a shining example of these efforts. Mr. Pillai graduated with a B. Tech. in Chemical Engineering in 2020 before going for his Master's in Technology at Institute of Chemical Technology (ICT), Mumbai. After graduating from ICT, he has been successfully employed as a Senior R7D Engineer at Expanded Polymers Pvt. Ltd. in Navi Mumbai. Mr. Pillai delivered an encouraging speech to the current B. Tech. Chemical Engineering students focusing on how to leverage the excellent opportunities available at SRM to train oneself for a successful career in chemical and allied industries. He also spoke at length about how his Master's program focusing on polymer technology helped him enhance his skill sets and plan for a career in the Indian polymer industry. His speech focusing on how to plan for higher studies and write entrance examination was an eye opener for the student audience. Mr. Pillai also focused on developing soft-skills, especially team work, leadership and communication skills etc. for launching a successful industrial career.


GPS Map Camera
Kattankulathur, Tamil Nadu, India
R2CQ+9P9, Potheri, Kattankulathur, Tamil Nadu 603203, India
Lat 12.820786°
Long 80.039276°
21/03/24 12:47 PM GMT +05:30
Google

# [4] Alumni Talk- Life of SRM Alumni in Public Sector
## Date: 25-03-2024

**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering

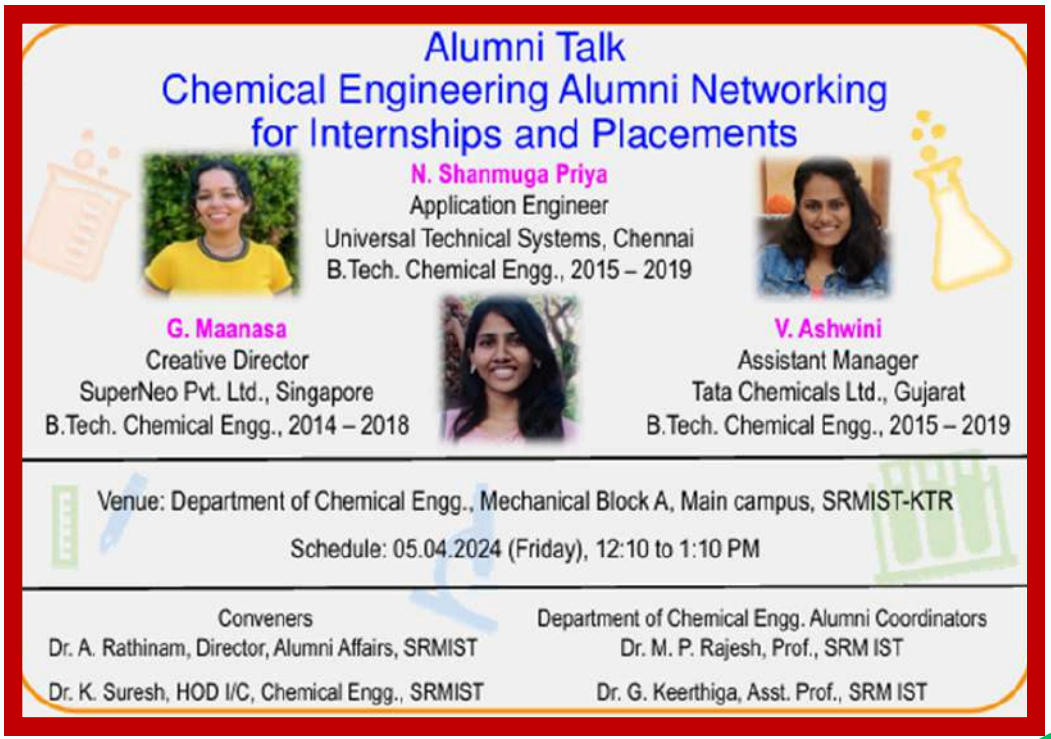
**About the event**
Mr. Somnath had a visit to the department for an interaction with faculties of the department. He is a GATE qualified candidate with an All India Ranking of 58 in 2015 and has joined public sector and now works as a Manager of BPCL refinery located in Mumbai and looks after the plant operations starting from fluid catalytic cracking and Gasoline hydrotreater unit. He takes care of both field operations and DCS panel. He discussed on building the gap in academia and industry where the students' knowledge can be improved for meeting the industry demands. He promised to meet and interact with the students of chemical engineering for knowledge sharing and skills upliftment.




# [5] Alumni Talk- Chemical Engineers - Alumni Networking for Internships and Placements
## Date: 05-04-2024

**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering

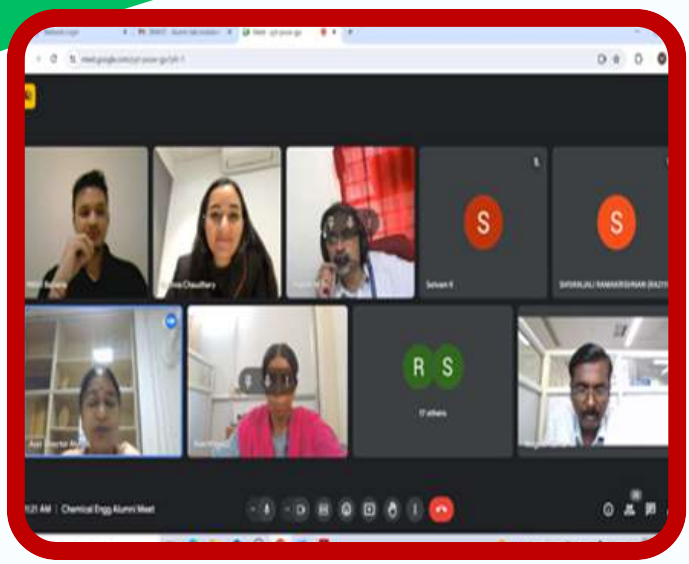
**About the event**
G. Maanasa is an SRM alumni from the batch of 2018. She's a successful person and briefed about the benefits of paid internships. She emphasized on the need of hard work and dedication towards academics during the 4-year course. She started as an intern in East-African company and currently she's the creative director of SuperNeo, Singapore. Ms. Maanasa's speech as a whole was inspiring to many.
V. Ashwini is an SRM alumni from the batch of 2019. She focused on why academic score is important to receive job offers from big companies. Being a day scholar, she suggested managing time would be useful. She also suggested that placements would be a good idea for people focused on getting a job. She wanted the students to develop soft skills. She's an assistant manager in Tata Chemicals, Gujarat currently.
Shanmuga Priya is an SRM alumni from the batch of 2019. She spoke about her work from home experience and how she got help from SRM for her research in post-graduation. She spoke on the importance of design whereas the onsite plant work might not be suitable for all. She's currently an application engineer in Universal Technical Systems, Chennai.

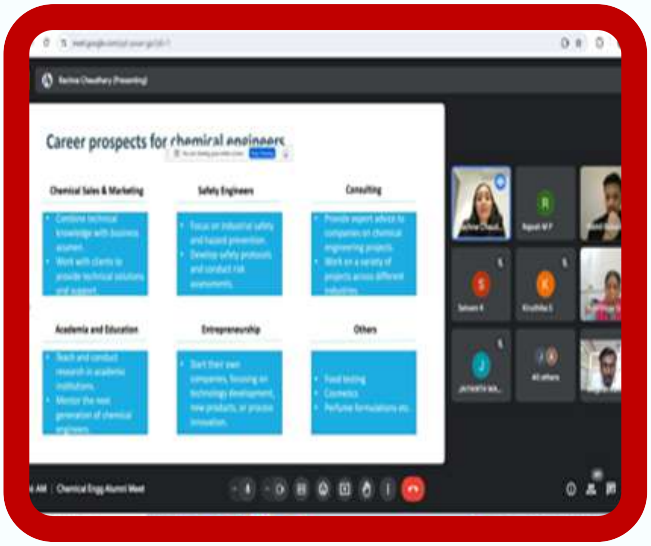


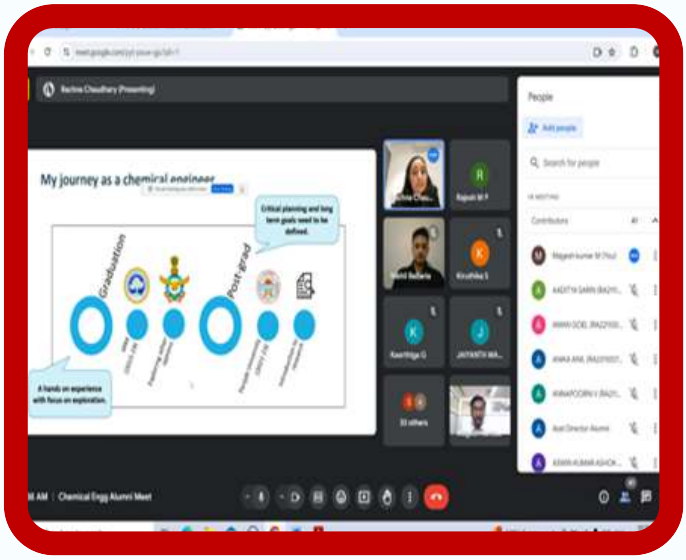
## [6] Alumni Talk- Life in SRM: A place to build bonds and create future opportunities
## Date: 22-04-2024

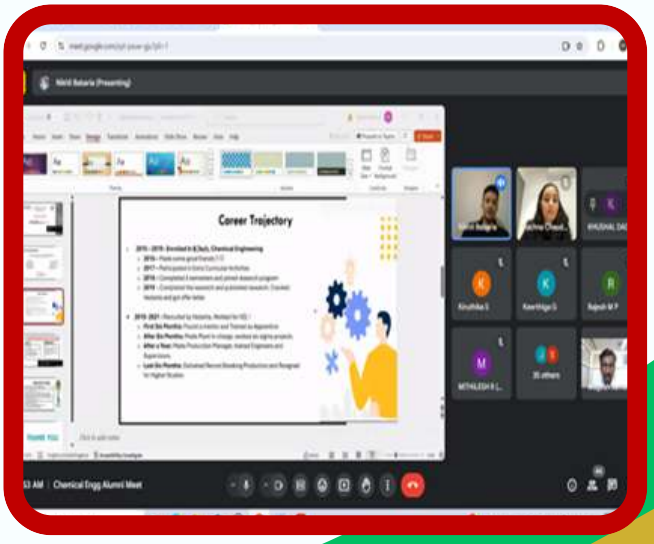
**Program Chair**
Dr. A. Rathinam, Director, Alumni Affairs
**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Alumni Coordinators**
**Dr. M. P. Rajesh**, Professor, Chemical Engineering
**Dr. G. Keerthiga**, Assistant Professor, Chemical Engineering
**Event Organizer**
**Dr. M. Magesh Kumar**, Assistant Professor, Chemical Engineering

**About the event**
Rachna Chaudhary: After completing her M. Tech. in Environmental Engineering, works for a multinational intellectual property and innovation consultancy organization, GreyB in Mohali, Punjab. Rachna spoke at length about her journey from SRM to her current role. Her talk was peppered with insight into how the students should plan and focus on their career. She also spoke about how innovation will prime economic growth, create jobs and propel a country to a knowledge economy.
Nikhil Babaria: Nikhil spoke to the students about his career path so far. He emphasized on how his internships and apprenticeships during his B.Tech. helped him obtain an understanding about the Chemical Engineering industry. He also emphasised on how this exposure was crucial for his on-campus placement in Hindustan Zinc Ltd. With interesting examples and anecdotes, he recounted his experiences in the industry and how the exposure led him to choose an MBA program in Canada. He was able to impress the students with his experience in Canada and how he intends to utilize his heavy engineering industry experience with MBA to chart a career in the Canadian mining industry.




Career prospects for chemical engineers
Chemical Sales & Marketing
Safety Engineers
Consulting
Academia and Education
Entrepreneurship
Others


My journey as a chemical engineer
Graduation
Post grad


Career Trajectory

# [7] CHEMFLUX 11.0 A National Level Technical Symposium
## Date: 21-02-2024 to 23-02-2024

**Convenors**

**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Dr. K. Sofiya**, Assistant Professor, Chemical Engineering

**About the event**

The 11th edition of our department's flagship National level technical symposium - CHEMFLUX 11.0 was held from 21st to 23rd February, 2024. It was a celebration of the innovation, intellect, and passion driving the field of chemical engineering. The theme of this year's symposium was "Circulareconomy" - a call to push the boundaries of what is possible in areas like green and sustainable technologies, energy and environment, materials science, and process engineering. And the inspiring guest lectures, insightful paper presentations and exciting competitions certainly rose to meet that challenge. The event attracted over 150 participants from engineering colleges across India, including Mumbai, Bangalore, Kerala and Chennai. It was a true meeting of minds, bringing together some of the brightest young talents and most experienced veterans in chemical engineering.


SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, KTR
Department


Classification of Membranes


Chemical Process Modelli
Simulation using ASPEN

## [8] Fresco 2024 - Fresher's Day
## Date: 06-03-2024

**Event Co-ordinator**
Dr. S. Kiruthika, Assistant Professor, Chemical Engineering
Dr. K. Selvam, Assistant Professor, Chemical Engineering

**About the event**
Fresher's day function 2024 was organized for the 2023-2027 batch, on the 6th of March, 2024. Stude
were welcomed with so much of enthusiasm which was organized by the II students. The fresher's day
filled with excitement, joy, music, enthusiasm, laughter and happiness. As a trend of the institute, the pa
began with the auspicious prayer to almighty, followed by Lamp lighting and inaugural speech.
Programmed was structured in the four categories based on Entertainment, Games, Mr. & Ms. Fresher's 2
and the DJ.

## [9] Outreach Activity – Think before you trash
## Date: 07-03-2024

**Convenors**

Dr. K. Suresh, Associate Professor & Head in - charge, Chemical Engineering
Dr. K. Sofiya, Assistant Professor, Chemical Engineering

**About the event**

The Department organized an outreach activity titled “Think before you trash” as a part of the National Technical Symposium CHEMFLUX 11.0 at Gnanodhaya unaided school, Venkatapuram. The team trained the school students about the importance of source reduction of waste generation through recycling. The team has distributed 250 notebooks made from unused pages of assessment papers (generally discarded as trash) to help the students realize the importance of recycling and reuse.


# [10] CHEM PROJECT EXPO 2024 – Idea Innovation & Incubation
## Date: 25-04-2024 & 26-04-2024

**Convenors**

**Dr. K. Suresh**, Associate Professor & Head in - charge, Chemical Engineering
**Dr. E. Kavitha**, Assistant Professor, Chemical Engineering
**Dr. E. Poonguzhali**, Assistant Professor, Chemical Engineering

**About the event**

UG and PG students showcased various innovative projects, each demonstrating creativity and technical prowess in their field. Participants presented their research findings and practical applications, highlighting advancements in their fields. The Expo served as a platform for networking and knowledge exchange, fostering collaboration among students, researchers, and professionals. It provided a valuable opportunity for students to gain practical experience, refine their presentation skills, and receive feedback from esteemed judges and peers. Overall, the Chem Project Expo was a resounding success, inspiring the next generation of chemical engineers and showcasing the profound impact of chemical engineering on our society and industries.


GPS Map Camera
Kattankulathur, Tamil Nadu, India
R2CQ+44Q, college road, Potheri, Kattankulathur, Tamil Nadu 603203, India
Lat 12.820342°
Long 80.037899°
26/04/24 03:29 PM GMT +05:30
GPS Map Camera
Kattankulathur, Tamil Nadu, India
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GPS Map Camera
Kattankulathur, Tamil Nadu, India
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GPS Map Camera
Kattankulathur, Tamil Nadu, India
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26/04/24 03:40 PM GMT +05:30


GPS Map Camera
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R2CQ+44Q, college road, Potheri, Kattankulathur, Tamil Nadu 603203, India
Lat 12.820356°
Long 80.037888°
26/04/24 03:37 PM GMT +05:30


GPS Map Camera
Kattankulathur, Tamil Nadu, India
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Lat 12.820309°
Long 80.037906°
26/04/24 03:44 PM GMT +05:30

## [II] International Conference- New Horizons in Bioengineering: Fostering Academia Industry Partnership (ICB -24)

**Date: 14-02-2024**




The first plenary talk of the session was given by Prof. Ahmad Ziad Sulaiman, Deputy Vice-Chancellor, University of Malysia Pahang, Malaysia. The lecture began with an overview of the University of Malaysia Pahang, its campuses and facilities. Dr. Sulaiman expressed a deep interest to collaborate with SRMIST in aspects of both academics and research. Dr. Sulaiman then shared his valuable insights on the 'Use of Ultrasound in Enhancing the Productivity of Biotechnological Processes'.


**Prof. Ahmad Ziad Sulaiman, Deputy Vice-Chancellor, University of Malysia Pahang, Malaysia after interaction with department faculty**


**Dr. Sridhar Rajam, Head, R & D. Cavinkare Pvt. Ltd.**

The second speaker for the session was Dr. Sridhar Rajam, Head, R & D. Cavinkare Pvt. Ltd. He delivered a talk on ‘Bio-engineering driven specialty products in Personal care & Hygiene domains in FMCG sector’. Dr. Rajam accentuated the increase in annual growth rate of bio-engineering driven products due to demand and need for organic and sustainable products.

Dr. Avrajit Chakraborty, Scientist Academic Lifecell Diagnostics delivered the next talk for the session on ‘Pivotal techniques and Future Prospects’. Dr. Chakraborty gave an overview of the Genome sequencing techniques at Lifecell where they are currently specializing in NGS (Next Generation Sequencing) process. The lecture provided an insight on Whole genome sequencing, Metagenomics, and Genotyping by Sequencing (GBS).


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## [12] One Last Dance 2024 – Farewell 2024
## Date: 16-05-2024

**Organizing committee:**
Student coordinators: **Mr. D. Sam Daniel**, Mr. Aditya Sarin, Ms. M. Praveena
Faculty coordinators: **Dr. K. Sofiya, Dr. D. Nanditha**
No. of Participants: 80

**About the Event:**
One Last Dance - 24 is an event organized for outgoing students. This farewell event is always a memorable day for graduating students. It marks the end of their college experience and the start of a new chapter. It is a day of celebration, reflection, and gratitude – a time to look back on the memories and friendships made over the years. Several Fun games and activities were conducted for the students.


## [13] Farewell to Dr. D. Nanditha
## Date: 25-06-2024

**Faculty coordinator:**
**Dr. K. Sofiya**

**About the Event:**
The farewell for Dr. D. Nanditha, who has been a part of the department since December 2012 (11.5 years), took place on June 25th at Padmam Veg Restaurant in SRM Hotel. The event was attended by faculty members, non-teaching staff, and research scholars. During the gathering, faculty members reflected on their experiences with Dr. Nanditha, praising her courteous, student-friendly demeanour and collaborative spirit. Dr. Nanditha also shared her own experiences with everyone, culminating in a poignant and emotional conclusion.

# Memories Corner

## The Chemical Engineering Team – Final Year - UG and PG


B. Tech. Chemical Engineering Batch 2020 – 2024

M. Tech. Chemical Engineering Batch 2022 – 2024

# Creative Corner

## Innovative Wastewater Technologies: A Key Solution to Combat Environmental Degradation

**Chaiti Harin Buch (RA2211007010028), III Year B. Tech.**

Wastewater pollution presents one of the most formidable environmental challenges of our time, impacting water quality, aquatic ecosystems, and human health. As chemical engineers, our role in developing and implementing cutting-edge technologies to tackle this issue is crucial. This newsletter explores some of the most promising advancements in wastewater treatment technologies, highlighting their potential to revolutionize how we address wastewater pollution and contribute to a sustainable future.

**Key Technologies in Wastewater Treatment**

**Advanced Oxidation Processes (AOPs):** AOPs are at the forefront of wastewater treatment innovations. By using potent oxidants like ozone ($O_3$) and ultraviolet (UV) light, AOPs break down complex pollutants into less harmful substances. This method is highly effective for degrading persistent organic pollutants and pharmaceuticals, producing water that meets rigorous quality standards. For chemical engineers, AOPs represent a critical tool in the arsenal against resistant contaminants.

**Membrane Bioreactors (MBRs):** MBRs combine biological treatment with advanced membrane filtration to enhance wastewater processing. The synergy between biological degradation and membrane separation results in high-quality effluent, making MBRs suitable for applications requiring stringent water quality standards. The ability to produce treated water with minimal sludge production and high contaminant removal efficiency makes MBRs a key technology for both municipal and industrial applications.

**Constructed Wetlands:** Constructed wetlands utilize natural processes to treat waste-water, integrating plant and soil interactions with microbial activity. These systems offer a sustainable and low-cost solution for wastewater treatment, especially in rural or less-developed areas. The design and optimization of constructed wetlands provide an interesting challenge for chemical engineers, balancing ecological benefits with treatment efficiency.

**Smart Water Monitoring Systems:** The advent of smart water monitoring systems has transformed the management of wastewater treatment facilities. By deploying sensors and leveraging Internet of Things (IoT) technologies, these systems deliver real-time data on water quality parameters. This enables proactive management, rapid response to pollution events, and enhanced compliance with environmental regulations. For chemical engineers, integrating smart monitoring systems into treatment processes enhances operational efficiency and decision-making.

**Bioremediation:** Bioremediation harnesses microorganisms or plants to neutralize or remove contaminants from wastewater. This approach offers a natural, cost-effective solution for treating pollutants, with applications ranging from industrial wastewater to oil spill remediation. Chemical engineers are actively exploring the optimization of bioremediation processes, including the selection of effective microbial strains and the design of bioreactor systems.

**Electrochemical Treatment:** Electrochemical treatment leverages electrical currents to remove contaminants, including heavy metals and organic compounds. This method offers advantages in terms of precision and reduced chemical use compared to traditional treatments. For chemical engineers, the development of electrochemical cells and optimization of operational parameters represent exciting areas for research and application.

**Nano-Technology:** Nano-technology introduces high-efficiency filtration techniques through the use of nanometer-scale materials. Nano-filters are capable of removing fine particles and pollutants that traditional filters cannot capture. This technology promises significant advancements in wastewater treatment, and chemical engineers are at the forefront of developing and integrating nano-materials into practical applications.

**Zero Liquid Discharge (ZLD) Systems:** ZLD systems aim to eliminate liquid waste by recycling and reusing all wastewater. This approach conserves resources and minimizes environmental impact by turning waste into valuable by-products. The design and implementation of ZLD systems involve complex chemical engineering principles, including solvent recovery and waste minimization strategies.

**Electro-dialysis:** It employs an electric field to separate ions through selective ion-exchange membranes, making it an effective method for desalting and purifying water. This technique offers a low-energy alternative to traditional desalination methods and is valuable for treating brackish and seawater. Chemical engineers are exploring ways to enhance the efficiency and scalability of electro-dialysis systems.

**Artificial Intelligence (AI) and Machine Learning:** AI an ML are revolutionizing wastewater treatment by optimizing processes and predicting potential issues. AI algorithms analyse data to improve operational efficiency, forecast maintenance needs, and identify emerging problems. The integration of AI into treatment systems represents a cutting-edge development in chemical engineering, offering new possibilities for data-driven decision-making.

Innovative technologies are reshaping the landscape of wastewater treatment, providing powerful tools for mitigating pollution and enhancing water quality. As chemical engineers, our engagement with technologies such as Advanced Oxidation Processes, Membrane Bioreactors, and Artificial Intelligence is crucial for advancing sustainable water management practices. By leveraging these advancements, we can significantly reduce environmental impact, protect water resources, and contribute to a healthier planet. Our continued commitment to research, development, and application of these technologies will play a pivotal role in addressing one of the most pressing environmental challenges of our time. Let us embrace these innovations and drive forward the evolution of wastewater treatment to ensure a cleaner, more sustainable future.

# Digitalization and Automation in the Chemical Engineering Industry: Transforming the Future

**Muhammad Abdul Khader (RA2211007010008), III Year B.Tech.**

In today's rapidly evolving chemical engineering landscape, digitalization and automation stand at the forefront of innovation, redefining traditional methodologies and enhancing operational efficiency, safety, and sustainability. As industries across the globe increasingly integrate advanced technologies, the chemical engineering sector is witnessing significant transformations, driven by the adoption of Artificial Intelligence (AI), Machine Learning (ML), and automation.

**The Role of AI and ML in Optimizing Chemical Processes**

AI and ML are revolutionizing chemical engineering by providing powerful tools to optimize processes. These technologies analyze vast amounts of data in real-time, allowing for predictive modeling and decision-making with unprecedented accuracy. For instance, AI-driven algorithms can predict the behavior of chemical reactions under various conditions, enabling engineers to fine-tune processes to achieve optimal yields and quality.

One of the most impactful applications of AI in the chemical industry is predictive maintenance. By continuously monitoring equipment performance and analyzing historical data, AI can predict potential equipment failures before they happen. This proactive approach not only reduces unexpected downtime but also extends the lifespan of equipment and minimizes maintenance costs.

ML algorithms can detect patterns and anomalies in complex datasets that would be impossible for humans to identify. By understanding these patterns, chemical engineers can adjust process parameters to enhance efficiency and reduce waste. For example, in a distillation process, AI can optimize temperature and pressure settings to maximize separation efficiency while minimizing energy consumption.

**Accelerating Innovation with AI-Driven Material Discovery**

Beyond process optimization, AI is accelerating innovation in material science and chemical discovery. Machine learning models are capable of processing and analyzing complex chemical data, identifying new materials and compounds that meet specific criteria faster than traditional methods.

In industries like pharmaceuticals, where the discovery of new compounds is critical, AI-driven simulations are drastically reducing the time and cost associated with R&D. By predicting the properties and behaviors of new molecules, AI enables researchers to focus their efforts on the most promising candidates, accelerating the path from lab to market. AI allows for the customization of materials to meet specific industrial needs. By analyzing data on existing materials and their applications, AI can suggest modifications or new formulations that enhance performance, such as improving durability or reducing environmental impact.

**Process Automation: Enhancing Safety and Efficiency**

Automation is reshaping the operational landscape of chemical plants, bringing about significant improvements in safety and efficiency. Automated systems are now integral to managing complex chemical processes, from raw material handling to final product packaging.

The deployment of robotics in chemical plants is reducing the need for human intervention in hazardous environments, significantly lowering the risk of accidents. Automated control systems provide real-time monitoring and adjustments, ensuring processes are continuously operating at optimal conditions. This not only enhances productivity but also ensures consistent product quality.

Automation also plays a crucial role in ensuring compliance with environmental and safety regulations. Automated systems can monitor emissions and detect leaks or spills in real-time, enabling immediate corrective action. This capability is particularly important in managing hazardous substances, where prompt response is essential to prevent accidents and protect worker safety.

**The Future of Digitalization and Automation in Chemical Engineering**

As the chemical engineering industry continues to embrace digitalization and automation, the potential for innovation and growth is immense. The integration of AI, ML, and automation is not only driving operational efficiencies but also fostering a culture of continuous improvement and sustainability. By optimizing processes and reducing waste, digitalization and automation contribute to the industry's sustainability goals. AI can help identify areas where energy consumption can be reduced or where renewable resources can be utilized more effectively, minimizing the environmental footprint of chemical processes. Companies that successfully leverage these technologies are positioning themselves as leaders in the global market. The ability to operate more efficiently, reduce costs, and innovate faster provides a significant competitive edge in an increasingly competitive industry.

The chemical engineering industry is undergoing a digital transformation, driven by the adoption of AI, ML, and automation. These technologies are not just enhancing efficiency and safety but are also opening new avenues for innovation and growth. As the industry moves towards a more digital future, companies that embrace these changes will be well-positioned to lead in a rapidly evolving global market.

# Sustainable Buildings: Paving the Way for a Greener Future

**Adithya S S (RA2211007010020) , III Year B. Tech.**

As the world grapples with the urgent need to address climate change, the construction industry is undergoing a significant transformation. At the forefront of this shift are sustainable buildings—structures designed to minimize environmental impact while promoting the health and well-being of their occupants. These green buildings are rapidly becoming a cornerstone in the global effort to create a more sustainable future. Sustainable buildings, also known as green buildings, are designed with a focus on reducing resource consumption and environmental degradation throughout their lifecycle. These structures incorporate energy-efficient systems, sustainable materials, and water-saving technologies, all while ensuring a healthy and comfortable environment for those who live and work in them. Key strategies include implementing energy-saving technologies and renewable energy sources, utilizing low-flow fixtures, rainwater harvesting, and greywater recycling, choosing materials that are recycled, locally sourced, or have a lower environmental impact, and ensuring good indoor air quality, natural lighting, and the use of non-toxic materials.

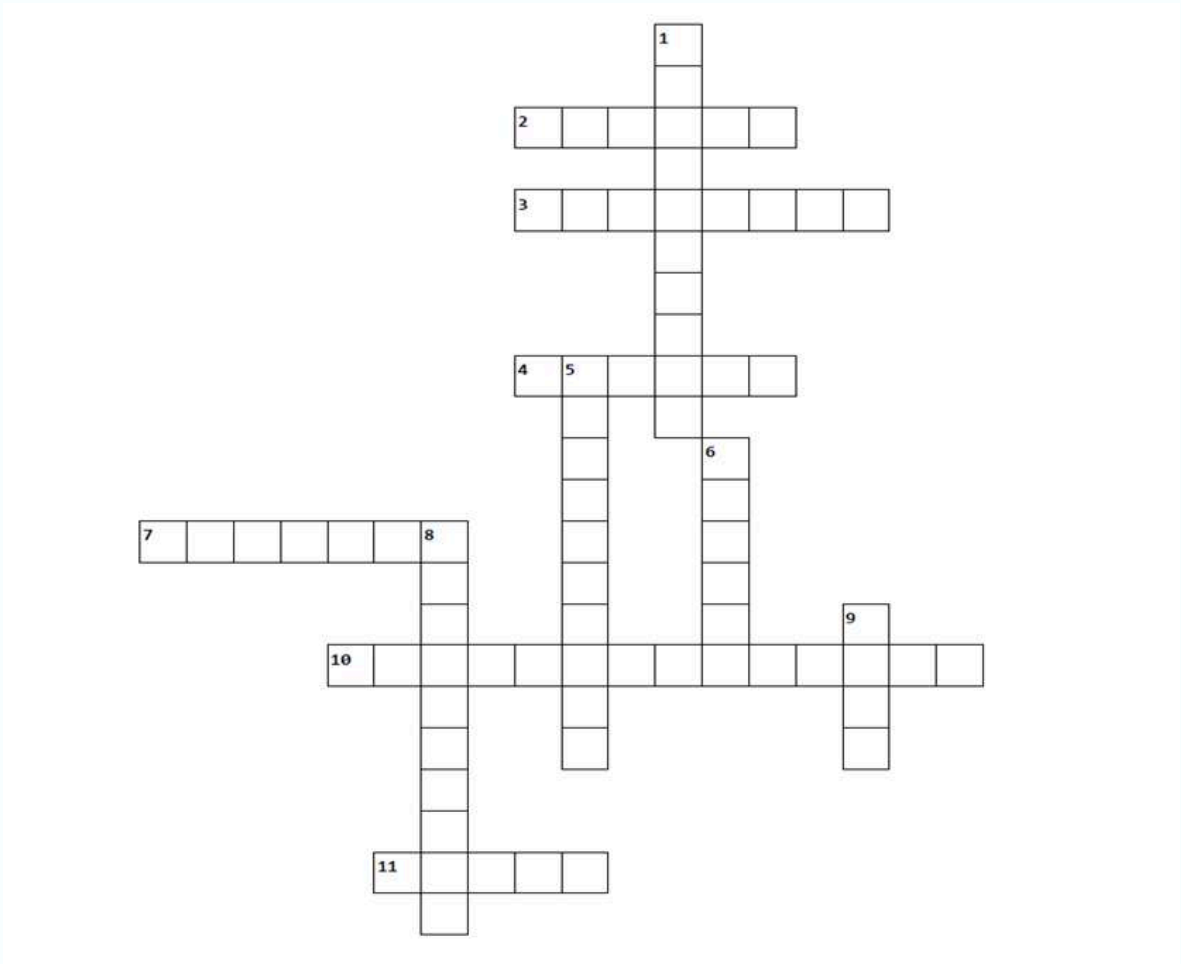
The rise of sustainable buildings is not just a trend—it's a necessity. These buildings offer significant environmental benefits by lowering carbon emissions through reduced energy use and the incorporation of renewable energy sources. They also enhance resource efficiency and minimize waste by using recycled materials and promoting recycling programs. Economically, sustainable buildings are advantageous due to their lower operating costs, resulting from reduced energy and water use, and their higher property values, driven by the growing demand for green spaces. Additionally, governments are incentivizing the adoption of sustainable practices through various grants, tax rebates, and other financial incentives. Socially, sustainable buildings contribute to healthier living environments through better indoor air quality and natural lighting, which in turn boosts productivity and overall well-being. These buildings also inspire communities to adopt greener practices, further amplifying their positive impact.

Looking ahead, the future of sustainable buildings lies in the integration of advanced technologies and innovative design principles. Smart building systems, which optimize energy use through automation and real-time monitoring, are set to become more prevalent. Moreover, the concept of regenerative buildings—structures that generate more energy than they consume and restore natural ecosystems—is gaining traction. Governments and international organizations are also playing a crucial role in this evolution, with stricter regulations, certification systems like LEED (Leadership in Energy and Environmental Design), and new green building codes promoting sustainable practices on a global scale.

In conclusion, sustainable buildings are not just a trend; they are a necessary response to the environmental challenges we face today. By embracing green building practices, we can significantly reduce our impact on the planet while creating healthier, more efficient spaces for people to live and work. As the construction industry continues to evolve, sustainable buildings will play a pivotal role in shaping a greener, more resilient future for all.

# Textbook Trivia: Crossword

**Dr. K. Deepa, Assistant Professor**



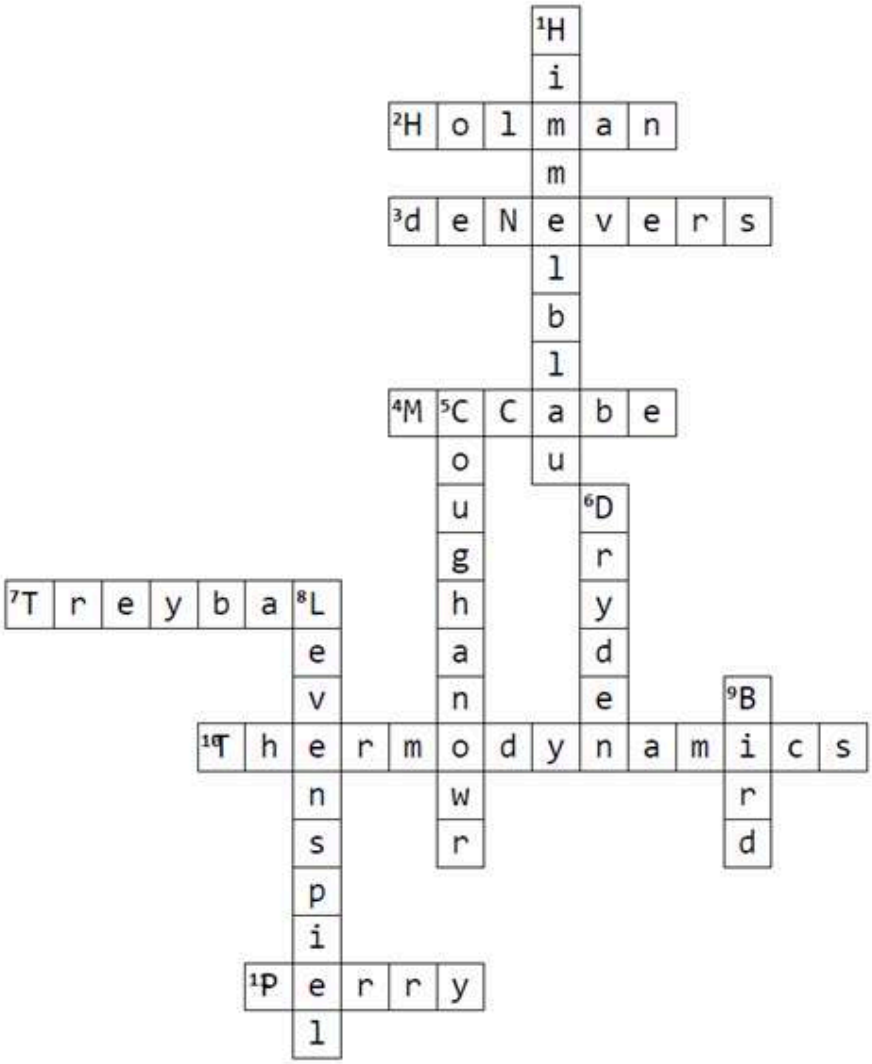

## Across

**2.** Conduct, Convect, Radiate
**3.** Never forget Fluid mechanics
**4.** Unit Operations is my game
**7.** Diffuse, Absorb,Dry
**10.** J. M. Smith., H. C. Van Ness., M. M. Abbott
**11.** Hand me my ChemE handbook

## Down

**1.** Balance thy materials
**5.** Controls Chemical Engineers
**6.** Chemical Process Technology
**8.** Reaction Engineering to the rescue
**9.** Transport is phenomenal!

# Solution to Crossword:



# Alumni Corner

## Message from the Alumni

N. Shanmuga Priya
Application Engineer
Universal Technical Systems, India B. Tech. (2015-2019

I am N. Shanmuga Priya, graduated from SRM Institute of Science and Technology in 2019. I am grateful to have pursued my Chemical Engineering degree from SRM Institute of Science and Technology. The faculties of the Chemical Engineering department are one of the most knowledgeable and supportive individuals I have ever met. They truly care about the success and growth of their students and are always eager to go that extra mile to ensure we understand every material and feel confident in our abilities. A bachelor's degree program in chemical engineering provides a strong foundation in chemical and process engineering principles. The program includes courses on Thermodynamics, Transport Phenomena, Reaction Engineering, Process Control, Heat Transfer, Mass Transfer Operations, and Mechanical Operations. This strong foundation helped me to pursue a Master's in Chemical Engineering (A.C. Tech., Chennai) and gave me the confidence to work as an Application Engineer dealing with various Mathematical Modelling and Simulations. SRMIST has changed my life and helped me to grow professionally. It has helped me to learn and expand my way of thinking and I am always thankful for that.

Aswini V Pursuing MBA, IIM Calcutta Ex: Assistant Manager, Tata Chemicals Limited, Gujarat B. Tech. (2015-2019)

I am Aswini Venkatesan, a proud graduate of Chemical Engineering from SRM Institute of Science and Technology (2015-2019). The dedicated faculty at the Chemical Engineering Department not only enriched our academic knowledge but also immersed us in research activities, ensuring a deep understanding of core concepts. My experience at SRM was truly holistic, from organizing technical and cultural events to actively participating in inter-college symposiums. This strong foundation played a pivotal role in shaping my career. Upon graduating, I joined Tata Chemicals Ltd as a GET, where my blend of technical expertise and confidence helped me excel in the manufacturing sector. My time at SRM truly prepared me to navigate real-world challenges, laying the groundwork for my success at Tata Chemicals.

**திருக்குறள்**
குறள் எண் – 634
பால் –பொருட்பால்
இயல் - அமைச்சியல்
அதிகாரம் – அமைச்சு / The Office of Minister of state

தெரிதலுந் தேர்ந்து செயலும் ஒருதலையாச்
சொல்லலும் வல்ல தமைச்சு.

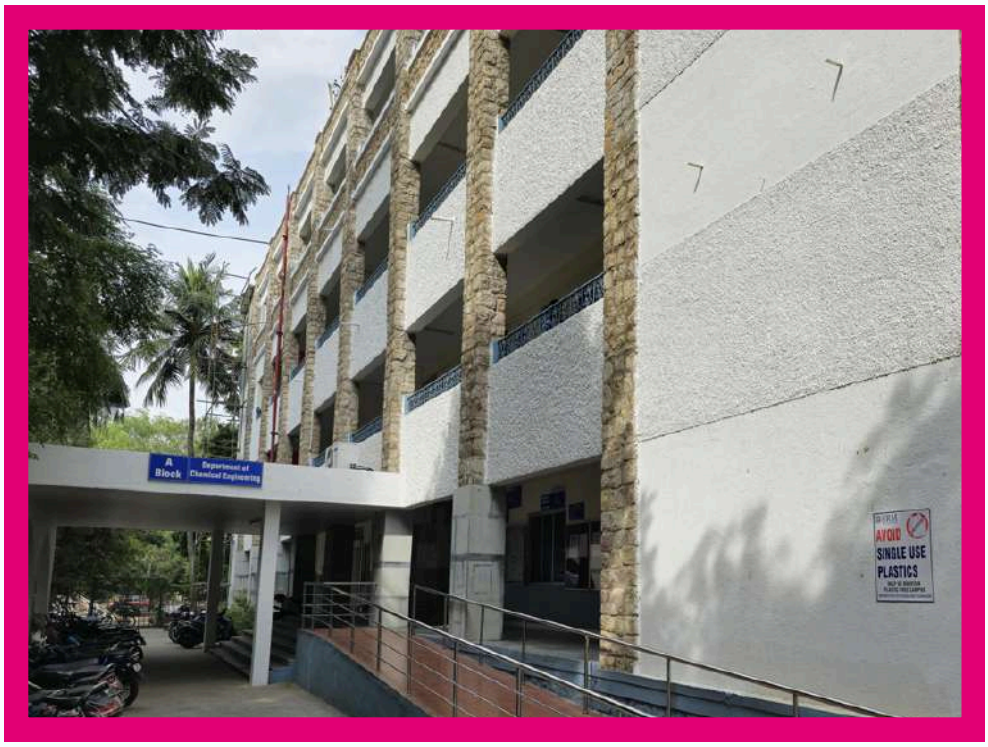
Transliteration (Tamil to English):
Theridhalum Therndhu Seyalum Orudhalaiyaach
Chollalum Valladhu Amaichchu.

English Couplet 634:
A minister has power to see the methods help afford,
To ponder long, then utter calm conclusive word.

பொருள்
ஒரு செயலைத் தேர்ந்தெடுத்தாலும், அதனை நிறைவேற்றிட வழிவகைகளை ஆராய்ந்து ஈடுபடுதலும், முடிவு எதுவாயினும் அதனை உறுதிபடச் சொல்லும் ஆற்றல் படைத்திருத்தலும் அமைச்சருக்குரிய சிறப்பாகும்.

Couplet Explanation:
The minister is one who is able to comprehend (the whole nature of an undertaking), execute it in the best manner possible, and offer assuring advice (in time of necessity).

Translation:
A minister has power to see the methods help afford,
To ponder long, then utter calm conclusive word.




# Deparment of Chemical Engineering at SRM IST, KTR

**Website :** https://www.srmist.edu.in/department/department-of-chemical-engineering/
**Facebook:** https://www.facebook.com/profile.php?id=100083228537110
**Instagram:** https://instagram.com/srmchemicalofficial?igshid=ZDdkNTZiNTM=
**LinkedIn:** https://www.linkedin.com/company/the-srm-chemical-club/about/
**Twitter:** https://twitter.com/srm_chemclub