SRM INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

Chemical Chronicle

NEWSLETTER

Volume 3, Issue 1 (July to December 2023)

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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LinkedIn: https://www.linkedin.com/company/the-srm-chemical-club/about/
Twitter:https://twitter.com/srm_chemclub

NAAC A++ | Category 1 with 12B Status | (2023) Ranked 18th University | (2023) World Ranking one among 41 Indian Universities | (2023) World Ranking one among 75 Indian Universities | (2021) Ranked 4th | (2023) World Ranking one among 14 Indian Universities

Message from the Chairperson
School of Bioengineering

Dr. M. Vairamani
Chairperson, School of Bioengineering, CET, SRMIST

I would like to congratulate the Department of Chemical Engineering at SRM Institute of Science and Technology on the release of Volume III, Issue I of the newsletter, ***'Chemical Chronicle'****. This edition highlights the various activities and achievements of our students and faculty from July to December 2023. Regularly compiling the milestones not only fosters team spirit but also identifies areas for improvement and growth in the future. Recognizing the importance of interdisciplinary collaboration in both academia and research, I believe this newsletter will serve as a catalyst for many such collaborations. I congratulate the editorial team for producing yet another engaging issue of the Chemical Chronicle. I look forward to witnessing the continued progress of the department through this platform.*

From the HoD's Desk

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

*I am excited to present the first issue of volume III of '**Chemical Chronicle'**, the newsletter of the Department of Chemical Engineering. It is indeed a proud moment to share the achievements of all our students, faculties and research scholars. I extend my heartfelt gratitude to our students, parents, alumni, research scholars, faculty, and non-teaching staff for being integral to this remarkable journey. Your continued support is essential as we strive to elevate our department to new heights. I also want to thank the management for creating a supportive environment that enables us to combine our strengths in pursuit of our departmental and institutional goals. I believe this compilation will serve as a valuable tool for reflecting on our progress and planning for future improvements.*

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Editorial Desk

Dear Readers,

We are overwhelmed to present to you the Third Volume – Issue – I of the Chemical Chronicle. This issue serves to showcase all the aspects of growth of the department observed over a period of six months from ***July to December 2023****. The students, faculty, and supporting staff have always put in their best efforts for the growth of the department and this period is no exception. The quality of the research publications has increased from* ***50 % to 88 % publications in SCI Journals*** *with an* ***average impact factor of 5.4*** *during the period. In the placement season for final year B. Tech. (2020-2024), most of the students have bagged core job offers in reputed companies.* ***Paper/poster presentations*** *by the students in various conferences as well as other events with the help of their mentors has provided opportunities for the students to explore many new areas in Chemical Engineering.*

The creativity of the students is portrayed in the ***Creative corner*** *section featuring articles contributed by them. Hope you have a wonderful time reading our newsletter!*

Dr. E. Poonguzhali
Assistant Professor, Chemical Engineering

Ms. B. Anitha,
Secretary to HoD
Data Collection

Mitun A U
(RA2111007010009),
III Year B. Tech.
Student Contributor

Tramila B.
(RA2111007010010),
III Year B. Tech.
Student Contributor

Shemaiah Sam
(RA2312012010004),
I year M. Tech.
Student Contributor

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, 25 batches of B. Tech. students and 20 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.

Paper Publications

The **faculty members** along with their **students** have published **25 papers** in refereed journals and **2 book chapters** during the period, July to December 2023. 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	July to December 2023
Number of Publications	25
Number of Corresponding Author Publications	14 (56 %)
Number of First Author Publications	5 (20 %)
Number of Science Citation Indexed (SCI) Publications	22 (88 %)
Highest Impact Factor	13.3
Average Impact Factor	5.391
Number of Q1 Publications	14 (56 %)
Number of Q2 Publications	5 (20 %)
Number of International Collaborative Publications	16 (64 %)
Number of National Collaborative Publications	12 (48 %)

Dr. S. Anandhakumar - Publication with highest IF:13.3

1. **K. Sofiya *,** Ashish Kapoor, P. Senthil Kumar, S. Balasubramanian, Gayathri Rangasamy, **Solvent extraction of acetic acid from aqueous solutions: A review**, Separation Science and Technology, 03-07-2023, 58, 11, 1985-2007, Print ISSN: 0149-6395, EISSN: 1520-5754. https://doi.org/10.1080/01496395.2023.2225734, **SCI, IF: 2.8, Q2.**

2. Zerihun Feyisa, Neeraj Kumar Gupta, Gemechu Deressa Edossa, **S. Anandhakumar,** Ashish Kapoor, Leta Guta Inki, **Fabrication of pH-sensitive double crosslinked sodium alginate/chitosan hydrogels for controlled release of amoxicillin**, Polymer Engineering and Science, 03-07-2023, 63, 8, 2546-2564, Print ISSN: 0032-3888, EISSN: 1548-2634.https://doi.org/10.1002/pen.26395, **SCI, IF: 3.2,** Q3.

3. Vijay Vaishampayan, Oinam Robita Chanu, S. Balasubramanian, **P. Muthamilselvi,** Varshini Karthik, **Ambar Pendharkar, Lohith Srinivas Thotakura, Aryan Prabhu**, D. Venkatesan, Ashish Kapoor, **Microfluidic paper-based device coupled with 3D printed imaging box for colorimetric detection in resource-limited settings**, HardwareX, 14-07-2023, 15, 2023, e00456 ISSN: 2468-0672. https://doi.org/10.1016/j.ohx.2023.e00456, **SCI, IF:2.2, Q2.**

4. Nishakavya Saravanan, Prasanna Ganesh, Sudhagar Pitchaimuthu, **S. Anandhakumar, Nanozyme Controlled Photothermal Heat Generation on Nanoceria Decorated MoS_2 Nanoflowers for Enhanced Cytotoxicity in Cancer Chemo-Photothermal Therapy**, Surfaces and Interfaces, 27-07-2023, Volume 41, October 2023, 103225; EISSN: 2468-0230. https://doi.org/10.1016/j.surfin.2023.103225, **SCI, IF: 6.2, Q1.**

5. P.N. Blessy Rebecca, **Aswin Krishna,** D. Durgalakshmi, S. Balakumar, R. Ajay Rakkesh, **Rational design of an innovative hybrid biosensor utilizing functionalized ZnO-Cys-graphene ternary composite for enzyme-free glucose detection**, Surfaces and Interfaces, 19-08-2023, Volume 42, Part A, 2023, 103275, ISSN 2468-0230. https://doi.org/10.1016/j.surfin.2023.103275. **SCI, IF: 6.2, Q1.**

6. Tariku Bayisa, Sakshi Bajhal, **S. Anandhakumar*,** Ashish Kapoor, Kim Han Tan, Saidur Rahman, Neeraj K. Gupta*, Gemechu D. Edossa, **Stabilization of Ag nanoparticles and ZnO-Ag nanocomposite onto L-methionine-modified cotton fabric for antibacterial durability**, Fibers and Polymers, 28-08-2023, 24, (2023), 3537–3555, ISSN 1229-9197, EISSN 1875-0052. https://doi.org/10.1007/s12221-023-00324-3. **SCI, IF: 2.5, Q2.**

7. P. Mullai, **S. Vishali,** S. M. Sambavi, K. Dharmalingham, M. K. Yogeswari, V. C. Vadivelraja, B. Bharathiraja, Bayar Busra, H. N. Abubackar, M. A. Al. Noman, Eldon. R. Rene, **Energy generation from bioelectrochemical techniques: Concepts, reactor configurations and modeling approaches**, Chemosphere, 28-08-2023, 342, 2023, 139950, ISSN 0045-6535, EISSN 1879-1298. https://doi.org/10.1016/j.chemosphere.2023.139950, **SCI, IF: 8.8, Q1.**

8. Sharmiladevi Ramamoorthy, Rence Painappallil Reji, Surya Velappa Jayaraman, **S. Anandhakumar*, Fabrication of BiCuOS nanoflowers acting as nanoarrays on photonic nanoparticles for chemo-photothermal therapy**, Applied Surface Science, 01-09-2023, 640, (2023) 158360, ISSN 0169-4332, EISSN: 1873-5584. https://doi.org/10.1016/j.apsusc.2023.158360, **SCI, IF: 6.7, Q1.**

9. Varsha Sharma, Maarten Vergaelen, Sangamithra Nehru, Richard Hoogenboom, **S. Anandhakumar*, Poly(2-n-propyl-2-oxazoline)/tannic acid nanocapsules with in-situ synthesized gold nanorods for cancer theranostics**, European Polymer Journal, 03-09-2023, 198 (2023) 112409, ISSN 0014-3057, EISSN: 1873-1945. https://doi.org/10.1016/j.eurpolymj.2023.112409, **SCI, IF: 6.0, Q1.**

10. Akash Kumar, Sharmiladevi Ramamoorthy, **S. Anandhakumar *, Synthesis of Ag Nanoparticles for Selective Dual Detection of Glutathione and Dopamine using N, N-Dimethyl- p-Phenylenediamine Mediated Colorimetric Probe,** Chemosphere, 12-09-2023, 342 (2023) 140124, ISSN 0045-6535, EISSN: 1879-1298. https://doi.org/10.1016/j.chemosphere.2023.140124, **SCI, IF: 8.9, Q1.**

11. **Monica A. V., K. Anbalagan*, Becky Miriyam I. An integrated approach to remove endocrine-disrupting chemicals bisphenol and its analogues from the aqueous environment: a review**, Water Science & Technology, 15-09-2023, 88 (6),1518–1546, ISSN: 0273-1223, EISSN: 1996-9732. https://doi.org/10.2166/wst.2023.280, **SCI, IF: 2.7,** Q3.

12. **Abinaya Stalinraja, G. Keerthiga*, Electrochemical reduction of CO_2 to C_2 products - effect of surfactant on copper electrodeposition,** Journal of Solid State Electrochemistry, 19-09-2023, Electronic ISSN 1433-0768, Print ISSN 1432-8488, https://doi.org/10.1007/s10008-023-05671-y, **SCI, IF: 2.5, Q2.**

13. **Ravi Kumar Singarapu,** Bala Reddy Bheema Reddy, **M. P. Rajesh*, Heterologous expression of phytase in Schizochytrium sp. as a fortified feed additive for the Livestock industry,** Journal of Applied and Natural Science, 19-09-2023, 15 (3), 1245 – 1253, ISSN: 0974-9411, EISSN:2231-5209. https://doi.org/10.31018/jans.v15i3.4858, SCOPUS, **SNIP: 0.262**, Q4.

14. Hajeesh Kumar Vikraman, Jeena George, Rence P. Reji, Guru Prasad Kuppuswamy, Sanjay D Sutar, Anita Swami, Sharmiladevi Ramamoorthy, **S. Anandhakumar,** Sumit Pramanik, Surya Velappa Jayaraman, Suresh Perumal, Yuvaraj Sivalingam, S R N Kiran Mangalampalli, **Unprecedented Multifunctionality in Monophase Micro/Nanostructured Ti-Zn Alloy,** Small, 21-09-2023, 20(5), e2305126, 2305126, ISSN: 1613-6829. https://doi.org/10.1002/smll.202305126, **SCI, IF 13.3, Q1.**

15. **Ravi Kumar Singarapu,** Bala Reddy Bheema Reddy, **Mathur Rajesh*, Identification of Phytate Degrading Probiotic Bacillus Sp. – potent Source of Phytase for Phosphate Bioavailability,** Current Trends in Biotechnology and Pharmacy, 27-09-2023, 17(4), 1448-1456, ISSN: 0973-8916, EISSN: 2230-7303.https://doi.org/10.5530/ctbp.2023.4.80, **Scopus, SNIP: 0.328,** Q3.

16. E. Ragulkumar, Paulsamy Sambath, **K. Suresh,** S. Balasubramanian, Ali J. Chamkha, **Soret–Dufour mass transfer effects on radiative chemically dissipative MHD plain convective water nanofluid (Al_2O_3, Cu, Ag, & TiO_2) flow across a temperature-controlled upright cone surface with heat blow/suction,** Numerical Heat Transfer, Part A: Applications, 09-10-2023, ISSN: 1521-0634. https://doi.org/10.1080/10407782.2023.2261624, **SCI, IF: 2, Q2.**

17. Shalini Nagabooshanam, Akash Kumar, Sharmiladevi Ramamoorthy, Nishakavya Saravanan, **S. Anandhakumar*, Rapid and sensitive electrochemical detection of oxidized form of glutathione in whole blood samples using Bi-metallic nanocomposites**, Chemosphere, 23-10-2023, 346, (2024), 140517, ISSN: 0045-6535. https://doi.org/10.1016/j.chemosphere.2023.140517, **SCI, IF: 8.8, Q1.**

18. Adithya Sridhar, **P. Muthamilselvi**, P. Senthil Kumar, Ashish Kapoor, Dai-Viet Nguyen Vo, Gayathri Rangasamy, **Digitalization of the agro-food sector for achieving sustainable development goals: a review,** Sustainable Food Technology – Royal Society of Chemistry, 27-10-2023, 2023, 1, 783-802, EISSN:2753-8095. https://doi.org/10.1039/D3FB00124E, **Scopus.**

19. Zerihun Feyisa, Neeraj K Gupta, Gemechu Deressa Edossa, **S. Anandhakumar,** Ashish Kapoor, **Synthesis and Characterization of Chitosan/Polyvinylpyrrolidone Hydrogels for Controlled Amoxicillin Release,** Journal of Bioactive and Compatible Polymers, 02-11-2023, 38(6), 458-479, ISSN: 0883-9115. https://doi.org/10.1177/08839115231207817, **SCI, IF 1.7, Q3.**

20. Akash Balakrishnan**, Meenu Mariam Jacob, D. Nanditha,** Mahendra Chinthala, **P. Muthamilselvi,** Dai-Viet N. Vo, Sowmya Appunni, Adaikala Selvan Gajendhran, **Chitosan/metal organic frameworks for environmental, energy, and bio-medical applications: a review,** Materials Advances – Royal society of Chemistry, 08-11-2023, **4**, 2023, 5920-5947, ISSN: 2633-5409. https://doi.org/10.1039/D3MA00413A, **SCI, IF: 5, Q1.**

21. **P. Muthamilselvi *,** Ashish Kapoor, **Meenu Mariam Jacob,** Anjali Awasthi, Moitraiyee Mukhopadhyay, **N. Shanmugapriya, Akshara Raghav, Deepshika Arvind**, Paromita Chakraborty, **S. Prabhakar, Adsorptive removal of endocrine disruptor bisphenol A from aqueous environment using sugarcane bagasse derived biochar,** Journal of the Taiwan Institute of Chemical Engineers, 10-11-2023, 2023,105216, ISSN 1876-1070. https://doi.org/10.1016/j.jtice.2023.105216, **SCI, IF: 5.7, Q1.**

22. Kavitha Munisamy Sambasivam, Praveen Kuppan, Lafiya Shanavas Laila, Viswanaathan Shashirekha, **K. Tamilarasan,** Sudharsanam Abinandan, **Kernel-Based Biodiesel Production from Non-Edible Oil Seeds: Techniques, Optimization**, and Environmental Implications Energies, 15-11-2023, 16, (22), 7589, ISSN:1996-1073. https://doi.org/10.3390/en16227589, **SCI, IF: 3.2, Q1.**

23. Punitha Shanmugam, Ramji Kalidoss, **S. Anandhakumar*,** Yuvaraj Sivalingam, **Work function analysis of photo-enhanced triethylamine adsorption impact on Au embedded CeO2 coated ZnO hybrid nanostructures: An investigation by scanning kelvin probe,** Surfaces and Interfaces, 13-12-2023, 44 (2024) 103749, ISSN: 2468 – 0230. https://doi.org/10.1016/j.surfin.2023.103749, **SCI, IF 6.2, Q1.**

24. Alice Jasmine David, **K. Tamilarasan*, Sustainable process for fractionation of lignin by the Microwave-assisted Chemical additive approach: Towards Sugarcane leaf Biorefinery and Characterization,** International Journal of Biological Macromolecules, 22-12-2023, 258, 2024, 128888, PISSN: 0141-8130, EISSN: 1879-0003. https://doi.org/10.1016/j.ijbiomac.2023.128888, **SCI, IF:8.2, Q1.**

25. Sangamithra Nehru, Ajay Guru, R. Pachaiappan, Ashraf Atef Hatamleh, Munirah Abdullah Al-Dosary, Selvaraj Arokiyaraj, **S. Anandhakumar*,** Jesu Arockiaraj, **Co-encapsulation and release of apigenin and ascorbic acid in polyelectrolyte multilayer capsules for targeted polycystic ovary syndrome**, International Journal of Pharmaceutics, 28-12-2023, 651 (2024) 123749, ISSN: 0378-5173. https://doi.org/10.1016/j.ijpharm.2023.123749, **SCI, IF 5.8, Q1.**

Book Chapters Published

S. Supreetha, J. Jeslin, M. Chamundeeswari **K. Tamilarasan, Chapter. 10 Microalgae-derived biofuel production via nanocatalysis,** Microalgal Biomass for Bioenergy applications - Woodhead Series in Bioenergy, 2024, 191-204, 29-09-2023, 978-0-443-13927-7, Woodhead Publishing, https://doi.org/10.1016/B978-0-443-13927-7.00009-8

B. S. Dhanya, **K. Tamilarasan,** M. Chamundeeswari, **Chapter-14 Microalgal-based biodiesel and its lifecycle assessment,** Microalgal Biomass for Bioenergy applications - Woodhead Series in Bioenergy, 2024, 287-302, 29-09-2023, 978-0-443-13927-7, Woodhead Publishing, https://doi.org/10.1016/B978-0-443-13927-7.00008-6.

Patent Granted

Dr. S. Anandhakumar, Ms. Varsha Sharma, Polymer Coated Metal Grid for Transmission Electron Microscopy and Process for Manufacture thereof, 29-09-2023, The Patent Office, GOI. 201941024888/ 455613

Projects Sanctioned

Dr. P. Muthamilselvi (PI), received 7 Lakhs for the project titled "Removal of emerging contaminants from wastewater using green technology" from **Universiti Sains Malaysia**, on 01-10-2023 for 2 Years.

Dr. S. Sam David (PI), received 2 Lakhs for the project titled "Liquid fluidized bed separation: A sustainable solution for segregating precious metals and polycarbonate from e-waste" under **Selective Excellence Research Initiative (SERI), SRMIST** on 14-10-2023 for 2 Years.

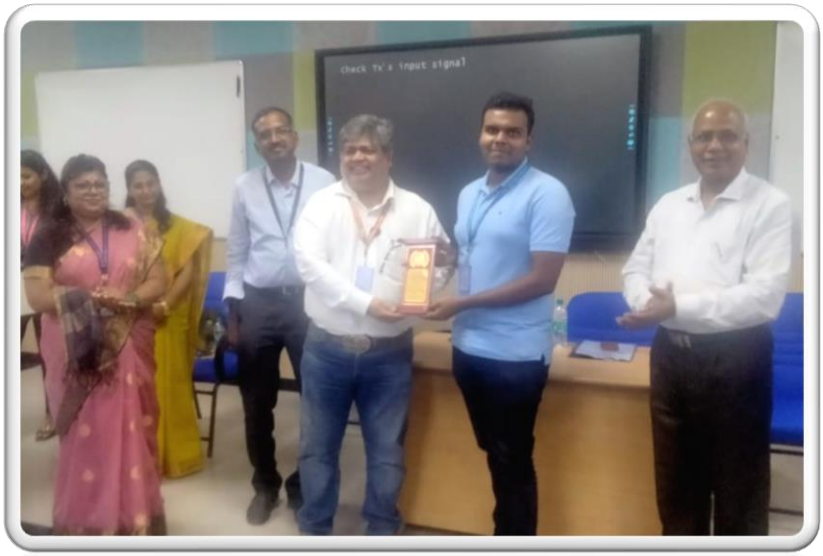
Hearty Congratulations to **Dr. S. Anandhakumar** for the patent and **Dr. P. Muthamilselvi** and **Dr. S. Sam David** for procuring the grants. We wish you all the best for the successful completion of the projects!

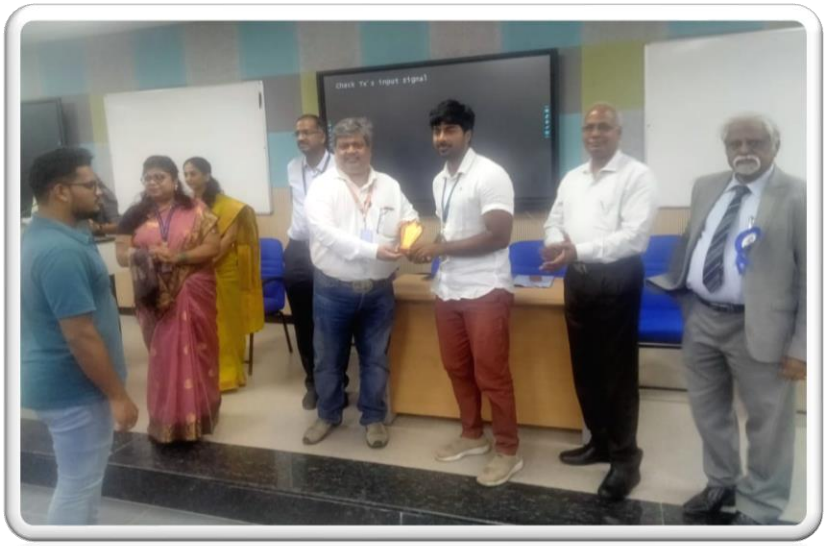
Awards & Achievements

Event : "2nd International Conference on Higher Education Institutes Challenges and Solutions for Sustainable Development Goals 2023" (ICSDG 2023) - SDG 06 (Clean water and Sanitation)", Organised by Centre for Research in Environment, Sustainability Advocacy and Climate CHange (REACH), Directorate of Research, SRMIST, KTR on 03-11-2023,

Shemaiah Sam (RA2312012010004) I Year M. Tech.& **Dr. E. Poonguzhali was awarded I prize for poster presentation on the title "**Synergistic process for the removal of nickel from industrial effluents"

Hareesh Balaji R (RA2011007010015), **Suriya U** (RA2011007010025) IV Year B. Tech. & **Dr. S. Sam David was awarded II prize for poster presentation on the title "**Electrochemical purification of laundry water using extended fins"





Shemaiah Sam & **Hareesh Balaji R** receiving the prize

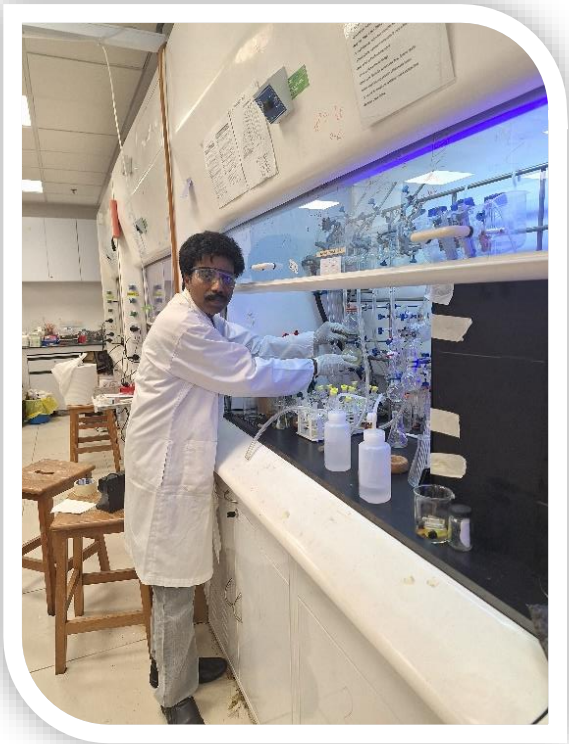
Hearty Congratulations dear students!

Technical Expert Members/ Resource Person

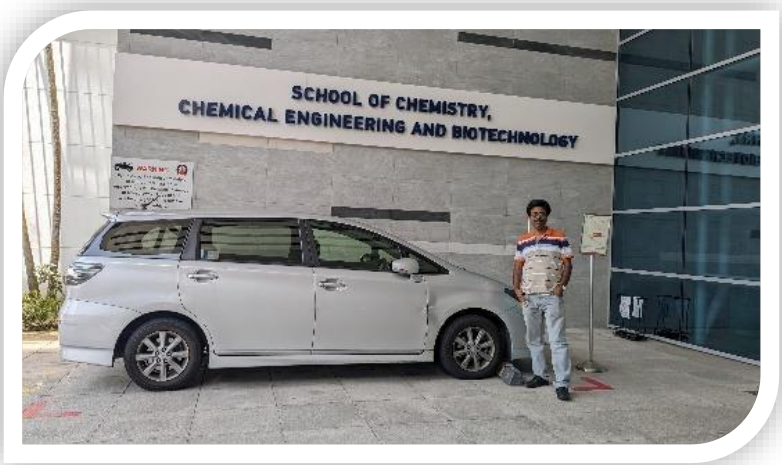
S. No.	Name of the Faculty	Position Held	Event	Organized by	Date (s)
1.	**Dr. K. Tamilarasan**	Doctoral Committee Member	Doctoral Committee Meeting	St. Joseph College of Engineering, Chennai	30-11-2023
2.	**Dr. K. Selvam**	Session Chair	DBT Sponsored First International Conference on Robotics in Agriculture, Bio-Waste Management and Surgery (ICRABS – 2023)	Department of Mechatronics Engineering, CET, SRMIST, KTR	14-09-2023 & 15-09-2023
3.	**Dr. E. Kavitha**	Reviewer	Asian Journal of Chemical Sciences		27-07-2023
			International Journal of Biological Macromolecules		31-10-2023
			Environmental Science and Pollution Research		05-10-2023
4.	**Dr. S. Vishali**	Judge	2nd International Conference on Higher Education Institutes Challenges and Solutions for Sustainable Development Goals 2023" (ICSDG 2023) –**SDG 06 (Clean water and Sanitation)**	Centre for Research in Environment, Sustainability Advocacy and Climate CHange (REACH), Directorate of Research, SRMIST, KTR	02-11-2023 2:00–5:00 PM
			2nd International Conference on Higher Education Institutes Challenges and Solutions for Sustainable Development Goals 2023" (ICSDG 2023) – **SRM Innovative Sustainable Technology Award**		02-11-2023 5:00 - 8:00 PM

Faculty Abroad Program

SRMIST provides an opportunity to experience global educational/research exposure by sending faculties abroad for one or more semesters to world-renowned Universities. **Dr. K. Tamilarasan**, Associate Professor had the opportunity to visit **Nanyang Technological University (NTU) Singapore** in Faculty Abroad program (FAP) during June to November 2023.



NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE



Dr. K. Tamilarasan in NTU, Singapore

Dr. K. Tamilarasan's journey at Nanyang Technological University, Singapore, spanning six months during the Faculty Aboard Program, has been a transformative experience that extended beyond academic learning to encompass valuable research exposure, state-of-the-art technology engagement, and immersion in a vibrant cultural environment.

NTU is recognized for its cutting-edge research and innovation across multiple disciplines, including sustainability and environmental technologies. Upcycling of biomass and plastic waste are the key areas of research where NTU has made significant contributions, aiming to convert biomass/plastics into valuable chemicals, materials, and fuels, thereby supporting the circular economy and reducing reliance on fossil fuel resources.

Engaging in cutting-edge research on upcycling of biomass for high value products development, Dr. Tamilarasan had the opportunity to work closely with esteemed professors and industry professionals. The blend of rigorous research, advanced technological engagement, and a dynamic cultural setting has not only honed professional skills but also enriched global outlook and cultural sensitivity.

Oral/Poster – Presentations

S. No.	Name of the Student/ Research Scholar & Faculty	Title of the Paper Presented	Event/ Organizer/ Date
1.	**Soundariya N** (RA2011007010009) **S. Sheik Mohamed Wahith** (RA2011007010005) **Sughanandhan K** (RA2011007010021) IV Year B. Tech. & **Dr. S. Kiruthika**	Electrochemical Recovery of Struvite from Nutrient Rich Water	National Conference on Environmental and Sustainable Technologies (NEST 2023) Department of Chemical Engineering, Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Avadi, Chennai 14-09-2023 & 15-09-2023
2.	**A Shahul Hameed** (RA2212012010008) **Madhavan V** (RA2212012010010) II Year M. Tech. **&** **Ponmani V** (RA2313008011002) Research Scholar & **Dr. S. Kiruthika**	Green Hydrogen Production from Alkaline Water Electrolysis	
3.	**Arvind Kumar R** (RA2212012010001) **Sivabharathvaj P** (RA2212012010002) **Veerubhotla Anil Datta** (RA2212012010003) II Year M. Tech.	Sustainable Method to Degrade Naphthol Green B Dye Using Bacterial Strains	
4.	**Hariprasath T** (RA2212012010006) **Yuvaraj K M** (RA2212012010009) **Rishi Praneash K B** (RA2212012010012) II Year M. Tech. & **Dr. S. Vishali**	Assessment of Binary Coagulation System – Grey Water Treatment	
5.	Irshana Shajahan (RA2212012010007) Sruthi J Nair (RA2212012010004) Sredha J Nair (RA2212012010005) II Year M. Tech. & **Dr. E. Kavitha**	Biosynthesis of zinc oxide nanoparticles using banana empty fruit bunch and their antibacterial and antifungal studies	SCHEMCON 2023 Department of Chemical Engineering, Kongu Engineering College, Perundurai 22-09-2023 & 23-09-2023
6.	**Takumi Nagasaka** (RA2213008011001) Research Scholar & **Dr. G. Keerthiga**	Green Synthesis of Cu-based MOF for Electrochemical Reduction of CO_2	SCHEMCON 2023 Department of Chemical Engineering, Kongu Engineering College, Perundurai

S. No.	Name of the Student/ Research Scholar & Faculty	Title of the Paper Presented	Event/ Organizer/ Date
7.	**Sredha Nair** (RA2212012010005) II Year M. Tech. & **Dr. G. Keerthiga**	Conversion of Carbon dioxide to useful Chemicals by Metal doped Ti nanotubes	22-09-2023 & 23-09-2023
8.	**Md Shuaib Hameedh** (RA2211007010027) **Rubasri P** (RA2211007010040) **Santhoskumar K** (RA2211007010041) **Meenakumari V** (RA2211007010048) II Year B. Tech. & **Dr. S. Kiruthika**	Empowering Tomorrow	
9.	**Muhammad Abdul Khader** (RA2211007010008) II Year B. Tech.	Act of Petrochemical Industry in India's Economic and Industrial Growth	
10.	**Chetna Gurunath Patil** (RA2211007010031) II Year B. Tech.	Existence of Per and Poly-fluoroalkyl Compounds	
11.	**Devanshu Soneta** (RA2111007010040) III Year B. Tech.	A Review on Bioelectricity Production using Microbial Fuel Cells from Wastewater Substrates	
12.	**Sam Daniel** (RA2111007010015) III Year B. Tech.	Study of the Potential for using PEMs in Large Scale Energy Storage Systems	
13.	**Aaditya Sarin** (RA2111007010004) III Year B. Tech.	A Review of Recent Developments in Ammonia as Marine Fuel	
14.	**V. Anil Datta** (RA2212012010003) II Year M. Tech. & **Dr. S. Sam David**	Modelling the Adsorption Characteristics of Silica Gel	2nd International Conference on Higher Education Institutes Challenges & Solutions for Sustainable Development Goals 2023" (ICSDG 2023) Centre for Research in Environment, Sustainability, Advocacy and Climate Change (REACH), Directorate of Research, SRM IST, KTR 01-11-2023 to
15.	**Arvind Kumar R** (RA2212012010001) II Year M. Tech. & **Dr. S. Vishali**	Low-Cost Grey Water Treatment	
16.	**Hariprasath T** (RA2212012010006) II Year M. Tech. & **Dr. S. Vishali**	Studies on the Assessment of Binary Coagulation System for Grey Water Treatment	

S. No.	Name of the Student/ Research Scholar & Faculty	Title of the Paper Presented	Event/ Organizer/ Date
17.	**Irshana Shajahan** (RA2212012010007) II Year M. Tech. & **Dr. D. Nanditha**	Performance Study of Superhydrophobic Membrane	03-11-2023 2nd International Conference on Higher Education Institutes Challenges & Solutions for Sustainable Development Goals 2023" (ICSDG 2023) Centre for Research in Environment, Sustainability, Advocacy and Climate Change (REACH), Directorate of Research, SRM IST, KTR 01-11-2023 to 03-11-2023
18.	**A Shahul Hameed** (RA2212012010008) II Year M. Tech. & **Dr. E. Poonguzhali**	Removal of Nitro Phenol by Solvent Extraction	
19.	**Sruthi J Nair** (RA2212012010004) II Year M. Tech. & **Dr. K. Deepa**	Nanocomposite for the Treatment of Oil Spills	
20.	**Sivabharathvaj P** (RA2212012010002) II Year M. Tech. & **Dr. K. Suresh**	Transportation of Crude Oil through Pipeline	
21.	**Ponmani V** (RA2313008011002) Research Scholar & **Dr. S. Kiruthika**	Green Hydrogen Production through Alkaline Water Electrolysis	
22.	**Antony Sebastian** (RA2312012010003) I Year M. Tech.	BIOFEN – A biofilter	Workshop on Recent Advances in Water Purification & Wastewater Treatment Department of Chemical Engineering & Department of Biochemical Engineering, Harcourt Butler Technical University, Kanpur, Uttar Pradesh 29-11-2023 & 30-11-2023
23.	**R Sandeep** (RA2312012010006) I Year M. Tech.	Wastewater Treatment in Industrial Area	
24.	**Venkateswara Reddy** (RA2312012010002) I Year M. Tech.	Nanotechnology as an Emerging Technology	
25.	**Irshana Shajahan** (RA2212012010007) II Year M. Tech. & **Dr. D. Nanditha**	Performance Study of Superhydrophobic Membrane	
26.	**Yuvaraj K. M** (RA2212012010009) II Year M. Tech. & **Dr. E. Kavitha**	Separation of Textile Dye Effluent	
27.	**Shemaiah Sam** (RA2312012010004) I Year M. Tech. & **Dr. E. Poonguzhali**	Synergistic Removal of Nickel from Industrial Effluent	

S. No.	Name of the Student/ Research Scholar & Faculty	Title of the Paper Presented	Event/ Organizer/ Date
28.	**Dr. P. Muthamilselvi**	Tribological study of surface characterization of basalt fiber with and without surface modification with silane	29th International Conference on Processing and Fabrication of Advanced Materials IIT - Tirupati 06-09-2023 to 08-09-2023
29.	**Ravi Kumar Singarapu,** (PA1813010013002) Research Scholar Bala Reddy Bheema Reddy, & **Dr. M. P. Rajesh**	Heterologous Expression of Phytase in Schizochytrium sp. as a fortified feed additive for the Livestock Industry	International Conference on Current Sustainable Agricultural, Biotechnological, Nutritional, and Pharmaceutical Interventions to Combat Global Challenges (SABINP-2023) Koneru Lakshmaiah Education Foundation, Vaddeswaram, Mangalagiri, Guntur District, Andhra Pradesh 19-12-2023 to 21-12-2023
30	**S. Bharath** (RA2011007010053) IV Year B. Tech. **K. Balaguru** (RA2312012010007) I Year M. Tech. & **Dr. S. Vishali** **Dr. S. Kiruthika**	Transformation of Floral Waste into Value-Added Products	Ideation and Hackathon - 1.0 Department of Electrical and Electronics Engineering, SRMIST, KTR 12-10-2023 & 13-10-2023
31.	**R. Satheesh Kumar** (RA2011007010055) IV Year B. Tech. & **Dr. S. Vishali** **Dr. S. Kiruthika**	A Sustainable Approach Towards Decent Work and Economic Growth	

Events Participated by Faculty

S. No	Name of the Faculty	Event Name	Event Title/ Organizer/ Date
1.	**Dr. K. Deepa, Dr. K. Sofiya, Dr. G. Keerthiga**	Faculty Development Program Convocation Ceremony	Design the Thinking Directorate of Entrepreneurship and Innovation, SRMIST, KTR 11-07-2023
2.	**Mr. V. Ganesh**	Faculty Training Programme	Machine Learning in MATLAB MathWorks & SRMIST, KTR 26-07-2023 & 27-07-2023
3.	**Dr. K. Selvam**	Workshop	Energy Production, Utilization and Storage Department of Chemical Engineering, National Institute of Technology, Calicut 04-09-2023 to 08-09-2023
4.	**Dr. G. Keerthiga**	Professional Development Program	Personal Excellence in Academic Arena Career Development Centre, SRMIST, KTR 11-09-2023 to 16-09-2023
5.	**Dr. K. Deepa**	Online quiz, Stay Safe online Campaign	Mobile and Mobile App Security Ministry of Electronics and Information Technology (MeitY), Government of India 16-09-2023 to 31-10-2023
6.	**Dr. K. Suresh**	Management Development Program	Universal Human Values and Professional Ethics All India Council for Technical Education (AICTE), 19-10-2023 to 21-10-2023
7.	**Dr. K. Sofiya, Dr. D. Nanditha, Dr. E. Kavitha**	Online Faculty Development Program	Challenges & Recent Trends in Mathematical Modelling and Scientific Computing Department of Mathematics, Harcourt Butler Technical University, Kanpur, Uttar Pradesh 18-12-2023 to 22-12-2023
8.	**Dr. S. Sam David**	Certification	Advanced Certification in Data Science and AI Indian Institute of Technology, Madras 31-12-2023

Events Participated by Students

S. No	Name of the Student/ Research Scholar	Event Name	Event Title/Organizer/Date
1.	**Aaditya Sarin** (RA2111007010004) III Year B. Tech.	Certificate for German Language	German Language A1 Association of Language Testers in Europe 13-07-2023
2.		Online Internship Program	Developing a digital twin of a Hybrid Energy System Energy Mentors, USA and IIT Ropar-TIF-AWADH 21-05-2023 to 24-07-2023
3.		Hackathon	Flipkart Grid 5.0 Robotics Challenge Flipkart 21-08-2023
4.	**Aaditya Sarin** (RA2111007010004) **Devanshu Soneta** (RA2111007010040) III Year B. Tech.	Hackathon	Hybrid hack AARUUSH, SRMIST, KTR 25-07-2023 to 22-08-2023
5.	**G. Kanishka** (RA2011007010003) IV Year B. Tech.	Grand Expo of the Carbon Zero Challenge	Pitch for the Plant Indian Institute of Technology, Madras 26-07-2023 to 28-07-2023
6.	**Devanshu Soneta** (RA2111007010040) III Year B. Tech. & **Saanz Wanjari** (RA2211007010001) **Md Shuaib Hameedh** (RA2211007010027) **Kushal Manojkumar Sarda** (RA2211007010030) II Year B. Tech.	Volunteered in Defence & Technology Expo – Transforming India – Edition 2.0	Defence & Technology Expo – Transforming India – Edition 2.0 The Swatantra Foundation In collaboration with the Federation of Industry & Management Association (FIMA), Chennai Trade Centre, Nandambakkam, Chennai 03-09-2023 to 05-09-2023
7.	**Tamilarasan N** (RA2211007010002) & **Praveenraj M** (RA2211007010049) II Year B. Tech.	Skill Development and Entrepreneurship Training Program	Drone Technology, SRMIST, KTR 11-09-2023 to 15-09-2023
8.	**Saanz Wanjari** (RA2211007010001) II Year B. Tech.	Six Days Online Students' Workshop	Universal Human Values All India Council for Technical Education 18-09-2023 to 23-09-2023
9.	**Mridu Tewari** (RA2111007010033) **Anagha K** (RA2111007010001) **Aaditya Sarin** (RA2111007010004) III Year B. Tech.	Technical Seminar	Plot, Analyze, Excel: Origin Software for Research & Higher Studies Department of Electronics and Communication Engineering, SRMIST, KTR 20-09-2023

S. No	Name of the Student/ Research Scholar	Event Name	Event Title/Organizer/Date
10.	**Mohamed Shibin** (RA2111007010014) **Anagha K** (RA2111007010001) III Year B. Tech.	HEI NET ZERO Workshop	Leadership in starting action SRMIST, KTR 25-09-2023
11.	**Devanshu Soneta** (RA2111007010040) III Year B. Tech.	MUN	JIGYASA 2.0 United Nations Human Rights Committee (UNHRC) 01-09-2023
12.		Hands on Workshop	ARDUINO Department of Electronics and Instrumentation Engineering, SRMIST, KTR 25-09-2023 & 26-09-2023
13.		BOOTCAMP	Berkeley Method of Entrepreneurship Bootcamp SRMIST, KTR 03-10-2023 to 07-10-2023
14.	**Mridu Tewari** (RA2111007010033) III Year B. Tech.	Online Quiz	Chandrayan 3 ISRO & MyGov 19-09-2023
15.		Online Quiz	Sardar Unity Trinity Quiz MyGov platform 30-10-2023 to 30-11-2023
16.	**Charan** (RA2111007010027) III Year B. Tech.	International Conference - SRM-REACH	SDG-6 (Clean water and Sanitation) SRM Institute of Science and Technology, Kattankulathur 01-11-2023 to 03-11-2023

Online Courses Completed

S. No.	Name of the Faculty	Course Title	Course Platform	Date of Completion
1.	**Dr. K. Deepa**	Nanotechnology: Introduction, Essentials, and Opportunities	Udemy	11-09-2023
2.	**Dr. K. Sofiya**	Process Control and Instrumentation	Udemy	16-09-2023
3.		Introduction to Thermodynamics: Transferring energy from here to there	Udemy	02-10-2023
4.	**Aaditya Sarin** (RA2111007010004) III Year B. Tech.	Polymers: Concepts, Properties, Uses and Sustainability	NPTEL	July to October 2023
5.	**Raman T** (RA2111007010042) III Year B. Tech.	Chemical Process Safety	NPTEL	July to October 2023
6.	**Ranjith R** (RA2111007010021) III Year B. Tech.	Organic Chemical Technology	NPTEL	July to October 2023
7.	**Aaditya Sarin** (RA2111007010004) III Year B. Tech.	Research Methodology	NPTEL	August to October 2023

Rank Holders and Students Performance (2023 batch)

Achyuta K
(RA1911007010038)
CGPA - 9.68
B.Tech.- I Rank
Gold Medal

Anagha Sunil
(RA1911007010037)
CGPA - 9.58
B.Tech.- II Rank
Silver Medal

Gopika L
(RA2112012010003)
CGPA 9.17
M.Tech.- I Rank
Gold Medal

Summary of Results	B. Tech. (2019 - 2023 batch)	M. Tech. (2021-2023 batch)
Total number of students	72	6
Number of students graduated in 2023	**70 (97.2 %)**	**6 (100 %)**
Number of students graduated in first class	**70 (100 %)**	**6 (100 %)**

Admitted for Higher Studies (Batch 2019 - 2023)

Name of the Student	Degree/University
 **Achyuta K** RA1911007010038	M.S. in Chemical Engineering, Georgia Institute of Technology, Atlanta, United States
 **Raghul S** RA1911007010042	Ph.D. in Biomedical Engineering. Purdue University, West Lafayette, United States
 **Mayank Lakhotia** RA1911007010025	Master's in Chemical Engineering. University of Toronto, Ontario, Canada
 **Sarthak Asthana** RA1911007010008	M.Sc. in Chemical Process Engineering, University College London, United Kingdom

Anagha Sunil
RA1911007010037

M.Sc. in Advanced Chemical Engineering,
The University of Edinburgh,
Scotland, United Kingdom

Amrutha S
RA1911007010022

M.S. in Chemical Engineering,
Imperial College London,
United Kingdom

Amaan Sait
RA1911007010013

M.S. in Water Resources Engineering,
University of Stuttgart, Germany

Haran Kishore R
RA1911007010004

M.Sc. International Business,
Bayes Business School, London,
United Kingdom

Ishaan S Davariya
RA1911007010032

M.S. Chemical Engineering,
Purdue University,
West Lafayette,
United States

Srivarsan R K
RA1911007010020

Master’s in chemical engineering,
The University of Queensland,
Australia

S Shriram
RA1911007010026

Master’s in chemical engineering,
The University of Queensland,
Australia

Soumyadeep Mukherjee
RA1911007010039

M.B.A in Marketing,
St. Xavier's University, Kolkata

Shemaiah Sam
RA1911007010024

M. Tech. in Chemical Engineering
SRMIST, Kattankulathur,
Tamil Nadu

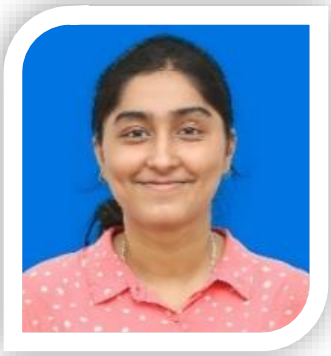
BalaGuru
RA1911007010070

M. Tech. in Chemical Engineering
SRMIST, Kattankulathur,
Tamil Nadu

Merit Based Scholarships Awarded by SRMIST

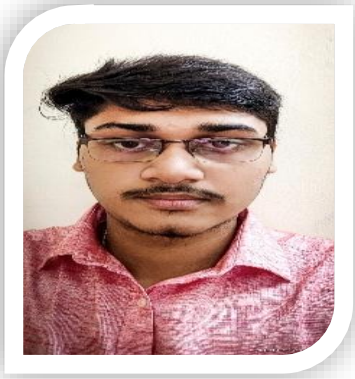
Year of Study/ Merit Position	IV Year B. Tech.	III Year B. Tech.	II Year B. Tech.
Ranking 1			
	Parkar Irene Chandrashekar RA2011007010006 **CGPA - 9.33** **Rs. 62,500**	**D Sam Daniel** RA2111007010015 **CGPA - 9.7** **Rs. 62,500**	**Adithya S S** RA2211007010020 **CGPA - 9.920** **Rs. 62,500**
Ranking 2			
	Sughanandhan K RA2011007010021 **CGPA - 9.25** **Rs. 58,750**	**Annapoorni V** RA2111007010039 **CGPA - 9.3** **Rs. 58,750**	**Varshika S** RA2211007010025 **CGPA - 9.360** **Rs. 58,750**
Ranking 3			
	Mahima Verma RA2011007010014 **CGPA - 9.27** **Rs. 55,000**		**Archana Narayanan** RA2211007010036 **CGPA - 8.960** **Rs. 55,000**

On Campus Placements - July to December, 2023 (B. Tech. Batch 2020 - 2024)



Saloni Bhattacharjee
RA2011007010004

Graduate Engineer Trainee,
Hindustan Unilever Limited
10 LPA



Souvik Ghosh
RA2011007010018

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Sughanandhan K
RA2011007010021

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Siddarth M
RA2011007010020

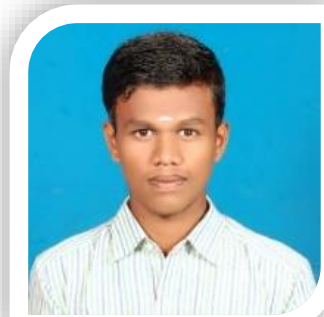
Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Atin Chattopadhyay
RA2011007010002

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Sheik Wahith
RA2011007010005

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA



Vishvaa
RA2011007010054

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Sanjay Ram M
RA2011007010060

Graduate Engineer
Trainee Reliance Industries Limited
8 LPA

Ruban Kumar S
RA2011007010051

Graduate Engineer Trainee,
Philips Carbon Black Limited (PCBL),
Tamil Nadu
6 LPA

Gururanga Ramanujam B
RA2011007010007

Graduate Engineer Trainee,
Philips Carbon Black Limited (PCBL),
Tamil Nadu
6 LPA

Tanisha Panigrahi
RA2011007010038

Graduate Engineer Trainee, Tata Advanced Systems Limited
5 LPA

Hareesh Balaji R
RA2011007010015

Graduate Engineer Trainee,
SPIC
5 LPA

Industrial Visit

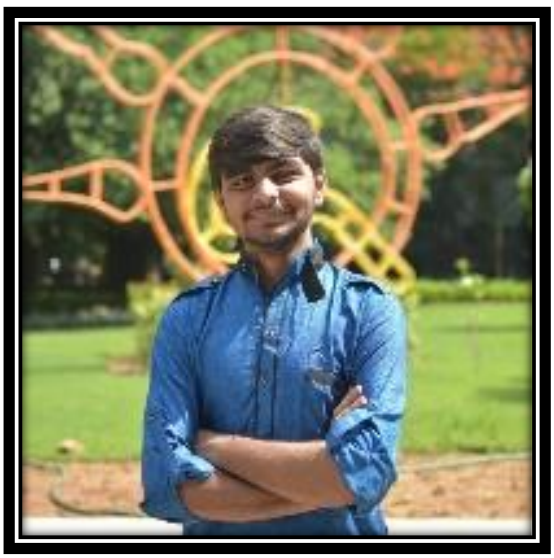
[1] Place: Karnataka Soaps & Detergents Limited, Bengaluru and Satyam Chemicals, Goa
III- & IV-year B. Tech. Students
Date: 02-08-2023 to 06-08-2023
Faculty Coordinators: **Dr. K. Sofiya & Dr. S. Sam David**

Industrial visit was organized by the department for the 3rd and 4th year students to get practical knowledge about advanced technology and equipment's used in manufacturing process of various industries. Visit to the Mysore Sandal Factory owned by the Government of Karnataka was arranged to learn about all the unit operations involved in soap manufacture from the primary raw material, sandalwood oil. The next industry visited was Satyam Chemicals, which was located in north Goa. They produce product offerings including high-quality furniture polish, varnish, solvents etc. The industry mainly focused on recycling and using the raw materials effectively. The founder of Satyam Chemicals briefly explained how the industry was started and the financial problems faced during the period. The students were inspired and motivated to become entrepreneurs.

Satyam Chemicals

Mysore Sandal Factory

[2] Place: Nuclear Desalination Demonstration Plant (NDDP) – Kalpakkam, Tamil Nadu
IV-year B. Tech., I & II - year M. Tech. Students
No. of students: 48 (27 B. Tech and 19 M. Tech)
Date: 27-10-2023 - one day visit
Faculty: Dr. S. Prabhakar, Dr. S. Kiruthika, Dr. S. Vishali, Dr. E. Poonguzhali, Dr. K. Sofiya, Dr. E. Kavitha, Dr. D. Nanditha, Dr. K. Deepa & Dr. G. Keerthiga.



Report by **Khushal Dadhania** (RA2011007010036), IV-year B. Tech.

Thrilled to share insights from my recent visit to the Indira Gandhi Centre for Atomic Research, Kalpakkam! Had an amazing experience exploring the Sea Water Reverse Osmosis (SWRO) Plant & Multi Stage Flash (MSF) Desalination Plant at Nuclear Desalination Demonstration Plant (NDDP) located at Kalpakkam with the Department of Chemical Engineering, SRMIST. Witnessing the integration of nuclear power and desalination was truly fascinating. It's incredible to see how what we study in the classroom translates into real-world solutions at NDDP. The Sea Water Reverse Osmosis Plant showcased cutting-edge advancements in water purification. Understanding the intricacies of reverse osmosis and its application in converting seawater into potable water highlighted the role of technological innovation in meeting the global demand for clean water.

One key takeaway was the evident need for interdisciplinary collaboration. Bringing together expertise from various fields like nuclear engineering, chemical engineering, and environmental science can result in holistic solutions to complex challenges like water scarcity. The visit underscored the importance of sustainable practices in water management. As we face increasing water stress globally, it's inspiring to see institutions like NDDP - IGCAR actively working towards sustainable solutions. A huge thank you to the Department of Chemical Engineering at SRM IST for organizing this insightful visit. Engaging with real-world applications of theoretical knowledge is invaluable, and this experience will undoubtedly shape my perspective as I continue to explore the intersection of engineering and environmental sustainability. Looking forward to more opportunities for hands-on learning and collaboration in the pursuit of a water-secure future!

SWRO plant

MSF TD Plant

Ph.D. Progress Details of Research Scholars

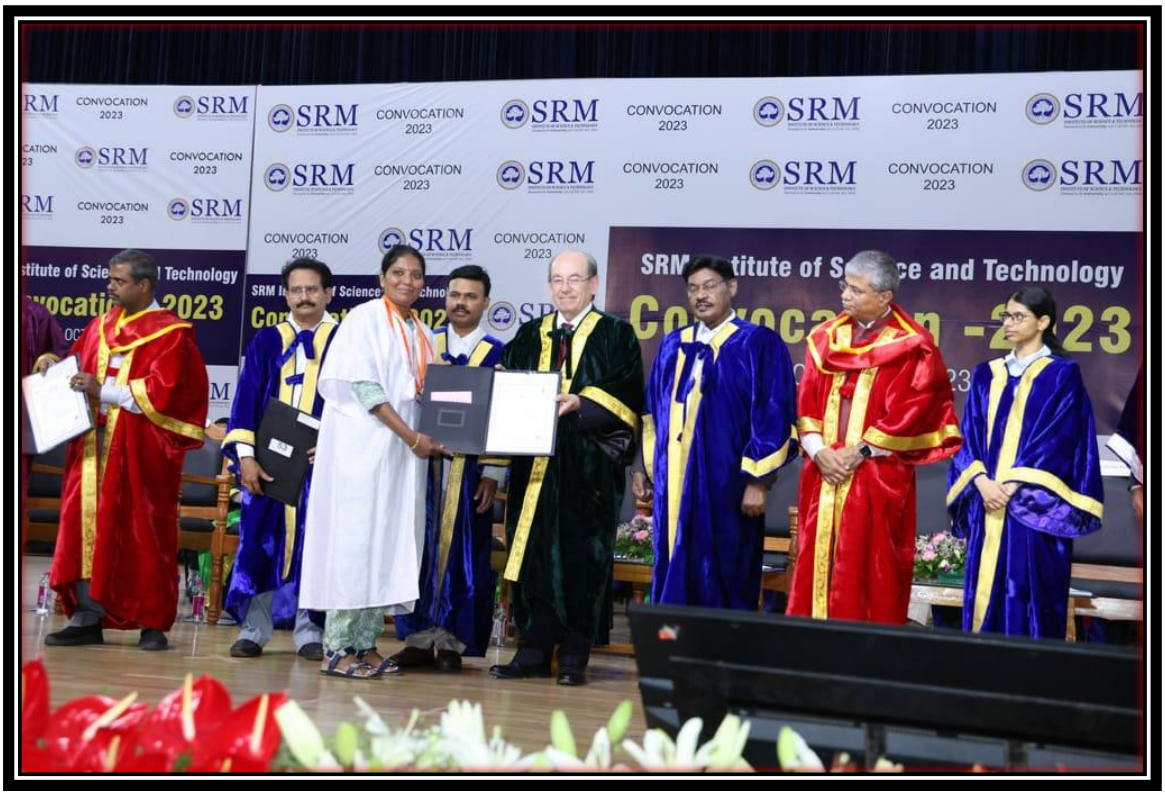
S. No.	Name	Supervisor	Title/Area of Research	Progress/ Date
1.	**Monica A** (RA2113008011001) (Full-Time)	**Dr. K. Anbalagan**	Decontamination of endocrine-disrupting compounds from aqueous solution by adsorption method	Comprehensive Viva 21-07-2023
2.	**Ponmani V** (RA2313008011002) (Full-Time)	**Dr. S. Kiruthika**	Design and Fabrication of Alkaline Electrolyzer for Green Hydrogen Production	DC Meeting-I 18-08-2023
3.	**Parthasarathi RR** (RA2313008011001) (Full-Time)	**Dr. S. Sam David**	Segregation of polycarbonate and heavy metals in PCBs through gas-solid fluidized bed	DC Meeting-I 18-08-2023
4.	**Thilakavathi R** (RA1513008011001) (Full-Time)	**Dr. K. Suresh**	Numerical Analysis on Heat Transfer Behavior in Thermal Processing of Homogeneous Liquid Foods	Ph.D. Viva-voce Completed 25-09-2023

Ph.D. Awarded

Ms. R. Thilakavathi (RA1513008011001) successfully defended her Ph.D. thesis at a public viva-voce examination on 25th September 2023 at SRM Institute of Science and Technology, Kattankulathur and received the doctoral degree on 3rd October 2023 at the special convocation.

Title: Numerical analysis on heat transfer behavior in thermal processing of homogeneous liquid foods

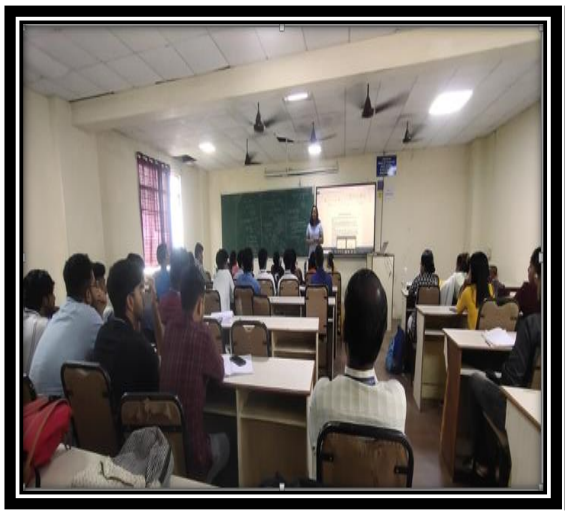
Supervisor: Dr. K. Suresh



Department Events Organized

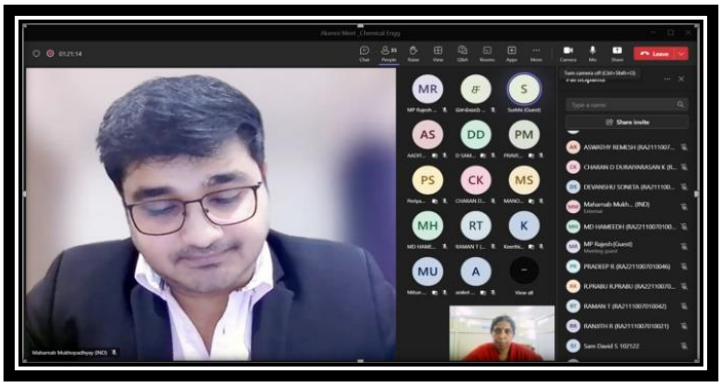
[1] Alumni Talk- Future Prospects after Graduation
Date: 18-08-2023
Program Chair
Dr. A. Rathinam, Director, Alumni Affairs
Dr. K. Suresh, Associate Professor & Head in - charge, Chemical Engineering
Alumni Coordinators
Dr. M. P. Rajesh, Professor, Chemical Engineering
Dr. G. Keerthiga, Assistant Professor, Chemical Engineering

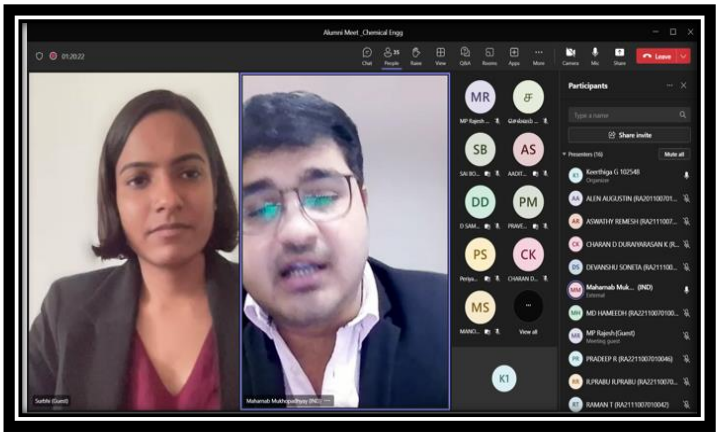
About the event
The Department of Chemical Engineering brought upon their alumni, **Jewel Ann Saji (B. Tech. 2015 – 2019)** to enlighten the students with her words of wisdom from her experience. Ms. Jewel is an ardent learner with passion towards expanding her knowledge using her analytical skills. She was a former technical expert who got placed into **Amway** through SRM placements who then decided to upscale her career by opting for a master's education in business administration with the hopes of landing a high-end managerial position in companies like Nestle and Pepsi to keep her profile both technical and management focused. She is currently pursuing her **Masters certification in DeGroote School of Business, Canada**.




[2] Alumni Talk- Echoes of Excellence: Personal Perspectives from the Past
Date: 25-08-2023
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

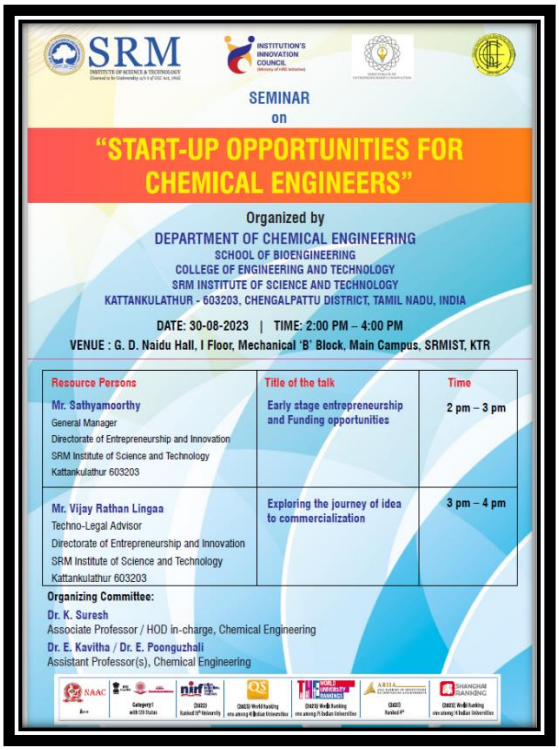
About the event
The Department of Chemical Engineering hosted two of its alumni on personal perspectives from the past, namely **Surbhi Rathi and Maharnab Mukhopadhyay (B. Tech. 2015 – 2019)** for an online Alumni talk on 25th August, 2023. Mr. Maharnab, who climbed the ranks from being a Process Engineer to now a Senior Consultant at Protiviti Global Consulting, gave prominence to the importance of industrial training and internship experience when stepping into the chemical engineering industry.
Ms. Surbhi Rathi subsequently talked about how she landed a core job that involves work consisting of simulation and mathematical tools as a quality assurance engineer at BASF. She began her career as an intern as her first step into the company for a few months and later on she clasped onto the growing ladder as a trainee and ultimately as a quality assurance engineer. She now is working as an Executive Manager at Cummins which would not have been possible if she wasn't persistent in moving forward and determined towards her goals.





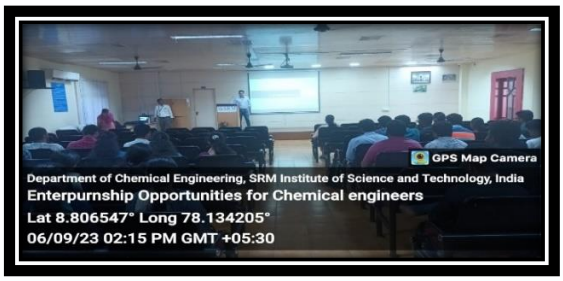
[3] Seminar on Start-up Opportunities for Chemical Engineers
Date: 30-08-2023
Convenors
Dr. E. Kavitha, Assistant Professor, Chemical Engineering
Dr. E. Poonguzhali, Assistant Professor, Chemical Engineering

About the event
The objective of this event is to provide a platform for the Chemical Engineering students to get exposed to start-up opportunities. This would motivate and facilitate the students to interact with the experts and provide them with an opportunity to generate novel ideas. The major outcome is that the Chemical Engineering students get to know about the various start-up and funding opportunities for transforming their ideas into patents/products and their commercialization.



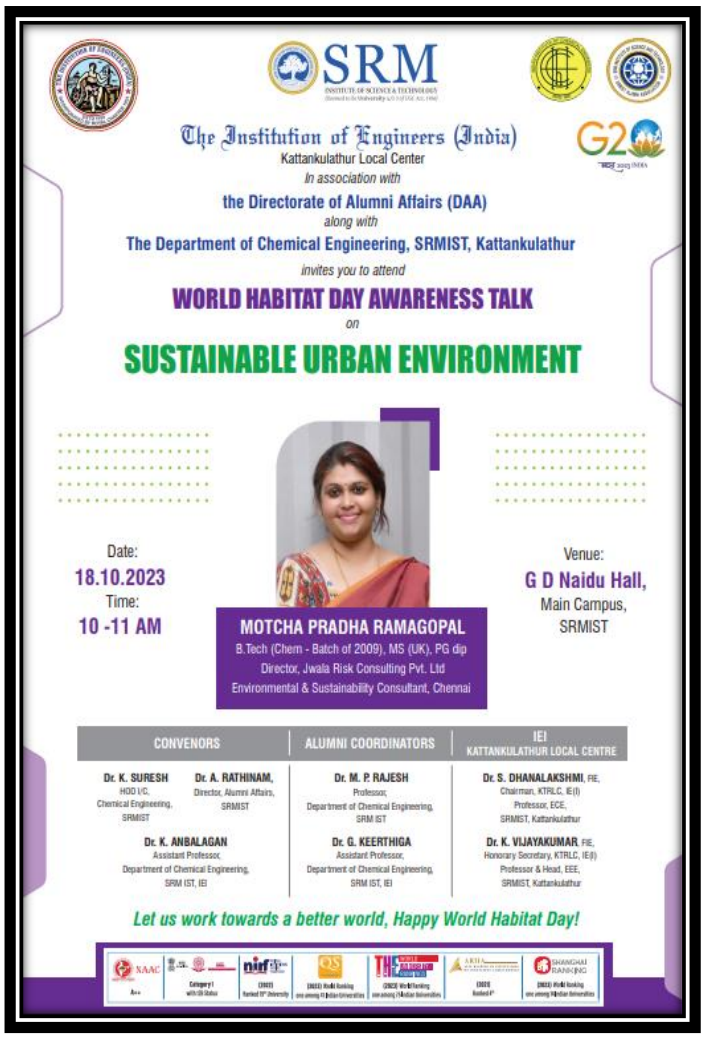
[4] One-Day Seminar on Entrepreneurship Opportunities in Chemical Engineering
Date: 06-09-2023
Convenors
Dr. K. Anbalagan, Assistant Professor, Chemical Engineering
Dr. G. Keerthiga, Assistant Professor, Chemical Engineering

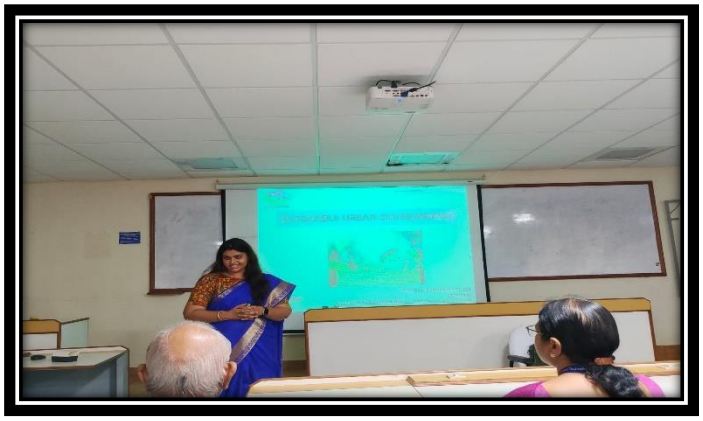
About the event
The Department of Chemical Engineering organized an interactive session on 'Entrepreneurship for Chemical Engineers' for its final year students. The session was conducted by Mr. K. N Easwaran, founder of Lakshaya Consulting and an experienced professional in the field of marketing and management. **Mr. Easwaran** shed light on the flourishing entrepreneurial environment in the country at the moment. He emphasized how even a small yet unique idea has the potential to become a successful business of tomorrow. Students were made aware that SRMIST's start-up funding initiatives have helped realize several student-driven ideas.



[5] Alumni Talk - World Habitat Day Awareness Talk
Date: 18-10-2023
Program Chair
Dr. A. Rathinam, Director, Alumni Affairs
Dr. K. Suresh, Associate Professor & Head in - charge, Chemical Engineering
Dr. K. Anbalagan, Assistant Professor, Chemical Engineering
Alumni Coordinators
Dr. M. P. Rajesh, Professor, Chemical Engineering
Dr. G. Keerthiga, Assistant Professor, Chemical Engineering

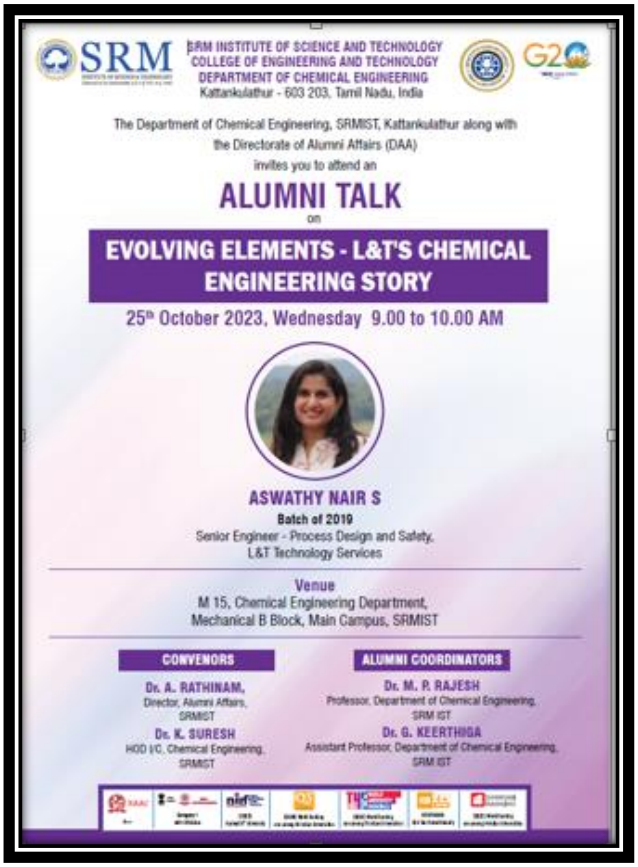
About the event
Our alumna **Ms. Motcha Pradha Ramagopal (B.Tech. 2005 – 2009)** gave an enlightening talk on the topic sustainable urban environment highlighting the sustainable practices that can be inculcated in our lifestyle and also enlightened about the current sustainable health of the world. As an active member of the sustainable community, she inspired all to follow in her footsteps. She spoke on features of sustainable urban development, united sustainable goals, net zero waste, circular economy and gaining carbon credits for healthier environment. The session was more interactive and all the students' questions were well deliberated.





[6] Alumni Talk- Evolving Elements – L&T's Chemical Engineering Story
Date: 25-10-2023
Program Chair
Dr. A. Rathinam, Director, Alumni Affairs
Dr. K. Suresh, Associate Professor & Head in - charge, Chemical Engineering
Dr. K. Anbalagan, Assistant Professor, Chemical Engineering
Alumni Coordinators
Dr. M. P. Rajesh, Professor, Chemical Engineering
Dr. G. Keerthiga, Assistant Professor, Chemical Engineering

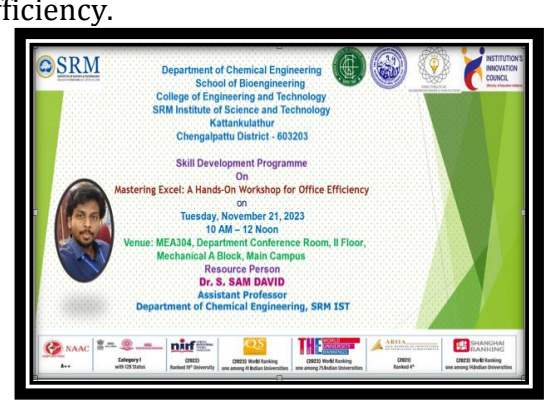
About the event
Department of Chemical Engineering had the privilege of hosting our alumna **Aswathy Nair S** of **B. Tech. 2015 – 2019** batch. Aswathy commenced her talk by reminiscing about her student days at SRM and described her journey by emphasizing the importance of a strong academic foundation as the bedrock of her subsequent success. The speaker delved into her placement experience at SRM, particularly highlighting her successful placement at L&T. She discussed the dynamics of the placement process and provided insights into the corporate world's expectations from young engineers. Aswathy offered a detailed account of her current role as a Senior Engineer in process design and safety at L&T. Her experiences in the field shed light on the practical applications of her academic background.






[7] Skill Development Programme on Mastering Excel: A Hands-on Workshop for Office Efficiency
Date: 21-11-2023
Organizer
Dr. E. Kavitha, Assistant Professor, Chemical Engineering
Resource Person
Dr. S. Sam David, Assistant Professor, Chemical Engineering

About the event
This event is conducted for the benefit of the non-teaching staff to master in Excel and improve office efficiency.



[8] Ayudha Pooja Celebration 2023
Date 20 October, 2023
Organizer
Dr. K. Sofiya, Assistant Professor, Chemical Engineering

About the event
Each educational institution or entity linked to education commemorates and observes Ayudha Pooja. In 2023, the team of faculty members from the Chemical Engineering Department took the initiative to plan and coordinate the Ayudha Pooja celebration. Invitations were extended to all teaching and non-teaching staff, research scholars, and students to participate in this event. The gathering took place in the conference room of the department, where everyone came together with a shared sense of devotion to worship their workplace. This collective celebration infused an additional sense of joy and positivity among all attendees.

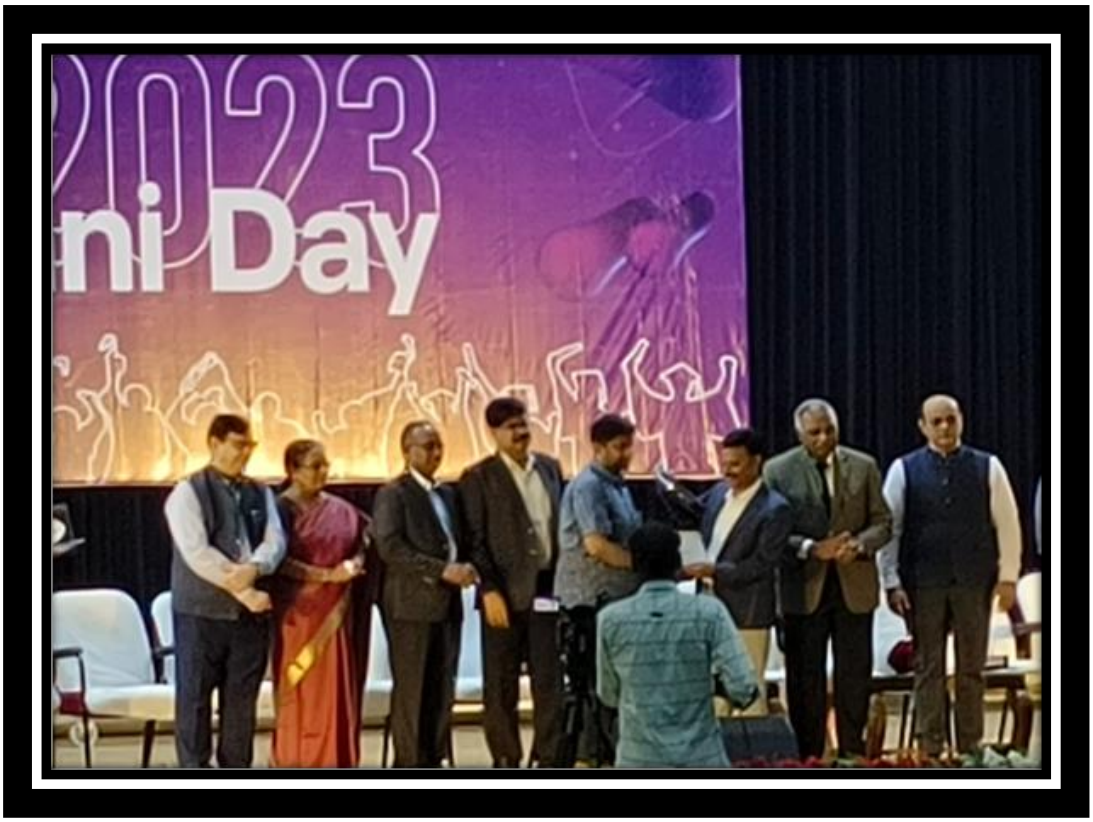
Alumni Day – 2023 by SRMIST, KTR

Date: 23.12.2023

SRMIST organized Alumni Day on 23-12-2023, invitation has been sent to all alumni and their registrations has been sought. More than 60 registrations have been received from alumni from India and Abroad. Around 15 Chemical Engineering alumni visited the campus on Alumni day and participated in the event.

Alumni Attended	Degree / Passing Year
Mr. G. N. Madhu	B.Tech. 2001
Mr. Vipin Kumar Sharma	B.Tech. 2010
Mr. Raghuraman	B.Tech. 2007
Mr. Bhargav Vivekanand	B.Tech. 2002
Ms. Esakkaiammal S	B.Tech. 2019
Mr. Jeeva R	B.Tech. 2021
Mr. Mohana Krishana S	B.Tech. 2021
Mr. Abhilash A	B.Tech. 2021
Ms. Sandhiya J	B.Tech. 2021
Ms. Lavanya S I	B.Tech. 2023
Dr. E. Poonguzhali	B.Tech. 2003
Dr. K. Selvam	Ph. D. 2022
Dr. E. Kavitha	Ph. D. 2020
Dr. K. Anbalagan	Ph. D. 2016
Dr. K. Sofiya	Ph. D. 2017

It was a proud moment for the department when two of our alumni **Mr. G. N. Madhu & Mr. Vipin Kumar Sharma** received awards during the event.



Mr. G. N. Madhu (B.Tech. 1997 – 2001 Batch), CTO, Garuda Aerospace receiving **Distinguished Alumni Award - 2023**

Mr. Vipin Kumar Sharma (B.Tech. 2006 - 2010 Batch), Addl. Superintendent Mill & Safety at the Uranium Corporation of India Limited, A. P. receiving **Eminent Alumni Award – 2023**

Group photo with our Alumni

Alumni Corner - Message from Alumni

Hello,
*I am **Soumya Vijayshankar from the batch of 2014 - 2018,** B.Tech. Chemical Engineering. Going down memory lane, the four years in SRM were very experiential in terms of both academics and personal development. The pedagogy of mixing both theory and practical were very useful in understanding the concepts taught and applying them to various problems. The accomplished faculty members were approachable and amiable. They were patient enough to answer even the silliest of doubts I had. There are many opportunities for placements with MNCs and manufacturing companies providing core opportunities. Soft skill training is also a part of the course to be corporate-ready before companies' recruit. There are plenty of competitions you can be a part of from paper presentations to tech festivals, cultural & sports competitions as well. The learning opportunities here are abundant and utilizing them is what is important. SRM provided me a jump start to my career and I am very proud to be an Alumna of this prestigious institution.*

Soumya Vijayshankar MBA (IB),
Indian Institute of Foreign Trade,
Ex Associate Senior Manager,
Reliance Industries Limited
B. Tech. (2014-2018)

Hello everyone!
*I am **Soumyajit Chowdhuri**, and I was a part of the SRM **2014 - 2018 batch** of B.Tech. Chemical Engineering. My experience at SRM is one I will always hold close to my heart! Throughout my entire journey at SRM I had the opportunity to interact with great faculty, students and alumni, many of whom I am still in touch with. The courses along with the rich co-curricular and extra-curricular activities during my 4 years have given me the skill sets to seamlessly collaborate with teams and solve many problems till date. The personal experiences and connections will always keep me connected to the Department of Chemical Engineering for many years to come*

Soumyajit Chowdhuri,
Process Development Engineer,
CMC Drug Product Development
Sanofi, US
B. Tech. (2014-2018)

Creative Corner

Bungy Jumping

Dr. G. Keerthiga
Assistant Professor, Chemical Engineering

My experience during the industrial visit to Goa and Coorg, along with my B. Tech. batch of 2019-2023, was truly unforgettable. Such visits play a crucial role in translating theoretical knowledge into practical insights, fostering creativity, and honing troubleshooting skills in students. This exposure brings about a positive transformation in their mindset, enhancing their technical prowess. Our itinerary included visits to Pradeep Phosphates Limited (PPL) in Goa and Satyam Chemicals Goa. PPL, a prominent player in the fertilizer manufacturing sector, showcased its various departments during a demonstrative visit led by Dr. K. Anbalagan. Satyam Chemicals, on the other hand, provided insights into the preparation of raw materials for active pharmaceutical ingredients used in drug synthesis. As the faculty coordinator of the student's group, the week-long journey, comprising train and bus rides with two nights' stay in Goa, allowed me to spend more time with the students. In my role as a class advisor, I enjoyed connecting with students on a deeper level. The long walks along the seashore and the spontaneous shopping excursions added to the camaraderie and created cherished memories.

During our stay, I was inspired by some enthusiastic students who had booked a **Bungy Jumping** experience in Goa, at an **exhilarating altitude of 55 meters**. Despite not having pre-booked, my confidence led me to participate in this adventurous sport. After a basic health check, we were securely tied with thick elastic cords and taken to the jumping platform. The instructor's stern instructions to jump or face a non-refundable drop heightened the adrenaline rush. The experience of leaping from such heights provided an international standard thrill, offering breathtaking views of Goa's hills, valleys, and wilderness. Overcoming the initial fear of looking down from such heights, I followed the trainer's instructions step by step, my heartbeat echoing in my ears. The jump itself was a surreal bounce with the elastic thread, providing a unique perspective as the world turned upside down for a brief, yet exhilarating moment. Completing this challenge instilled a newfound sense of accomplishment and hope within me. Though it was an adventurous sport, it gave me a confidence to face problems that we come across in life. I am deeply grateful to SRMIST, the HOD, and the department for providing me with this wonderful opportunity to push my limits and create lasting memories during the industrial visit.

Unveiling the Fascinating World of Chemical Engineering: A Journey Through Intriguing Facts

Tramila Bhattacharjee (RA2111007010010), III Year B. Tech.

Introduction

Chemical engineering is a diverse and dynamic field that plays a crucial role in shaping the modern world. From designing processes for manufacturing pharmaceuticals to optimizing energy production, chemical engineers contribute significantly to various industries. In this article, we will explore some fascinating facts about chemical engineering that highlight the innovation, impact, and versatility of this field.

Roots in Ancient Times

Chemical engineering principles have ancient roots, with early examples dating back to the practice of metallurgy and alchemy. However, it wasn't until the 19th century that the discipline truly emerged as a distinct field with the development of chemical industries.

Birth of the Chemical Engineering Profession

The term chemical engineering was first used in 1888 by George E. Davis, a British chemical engineer. Davis is often considered the founding father of the profession for his work in applying scientific principles to industrial processes.

Process Optimization with Unit Operations

Chemical engineering revolves around the concept of unit operations, which are basic steps in a chemical process. Examples include distillation, filtration, and reaction engineering. Engineers use these operations to optimize processes for efficiency and productivity.

Petroleum Refining Marvels

Chemical engineers play a pivotal role in the petroleum industry, particularly in refining crude oil. The process involves separating crude oil into various

components such as gasoline, diesel, and petrochemicals, demonstrating the intricate expertise of chemical engineers.

Green Chemistry Initiatives

In recent years, there has been a growing emphasis on green chemistry within the field. Chemical engineers work on developing environmentally friendly processes and sustainable materials, reducing the environmental impact of chemical manufacturing.

Nanotechnology and Materials Engineering

Chemical engineers are at the forefront of developing materials with unique properties at the nanoscale. This includes applications in medicine, electronics, and manufacturing, showcasing the interdisciplinary nature of the field.

Biotechnology Integration

With advancements in biotechnology, chemical engineering has expanded its scope to include the production of biofuels, pharmaceuticals, and biodegradable materials. Engineers combine principles of chemistry, biology, and engineering to create innovative solutions.

Food and Beverage Industry Contributions

Chemical engineers contribute significantly to the food and beverage industry by optimizing processes for food production, preservation, and packaging. They ensure that the food we consume is safe, nutritious, and efficiently manufactured.

Global Energy Solutions

Chemical engineers play a critical role in developing alternative energy sources, including solar, wind, and bioenergy. Their expertise is vital in designing processes that harness and store energy sustainably.

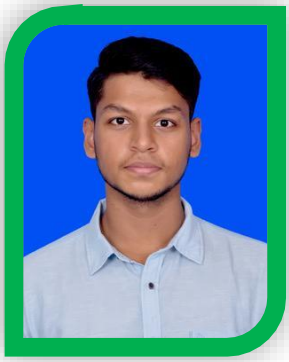
AI and Computational Tools in Chemical Engineering

Modern chemical engineering relies heavily on artificial intelligence and computational tools for simulation, optimization, and data analysis. These technologies enhance the precision and efficiency of various processes.

Conclusion:

Chemical engineering is a dynamic field that continues to evolve and shape the world we live in. From ancient roots to cutting-edge technologies, chemical engineers are at the forefront of innovation, contributing to industries that impact our daily lives. As we move into the future, the role of chemical engineering is likely to expand, addressing global challenges and creating solutions for a sustainable and technologically advanced world.

Sustainable Practices Shaping Chemical Engineering



Mitun A U (RA2111007010009), III Year B. Tech.

In the dynamic realm of chemical engineering, a compelling narrative is unfolding—a story of relentless commitment to sustainability through the lens of green chemistry. At the forefront of this narrative are chemical engineers pioneering innovative approaches to mitigate the environmental impact of industrial processes. Process intensification, a cornerstone of this movement, involves optimizing chemical processes for heightened efficiency and reduced resource consumption. This entails not just tweaking existing methodologies but reimagining them with a focus on minimizing waste and maximizing output.

Sustainable manufacturing is emerging as a pivotal theme, encompassing practices like utilizing renewable feedstocks and adopting eco-friendly solvents. These practices not only align with global environmental goals but also foster a circular economy, where waste is minimized, and resources are recycled. The development of advanced materials is another noteworthy facet. From biodegradable polymers to catalysts designed for minimal environmental impact, these materials promise a paradigm shift in how we approach traditional manufacturing processes, emphasizing durability, performance, and ecological responsibility. Bioprocessing, leveraging the power of biological systems, is carving a niche as a sustainable alternative to conventional chemical synthesis. Engineers are tapping into the potential of microorganisms and enzymes to create products with reduced ecological footprints. In conclusion, the ongoing strides in green chemistry within the realm of chemical engineering underscore a collective commitment to forging a sustainable path forward. Embracing these advancements not only ensures responsible industrial practices but also contributes to a harmonious coexistence with our planet for generations to come.

Navigating the crossroads: Automotive NO_X reduction with advanced catalysis

Shemaiah Sam (RA2312012010004), I year M. Tech.

In the current scenario of chemical reaction engineering, the selective catalytic reduction (SCR) of nitric oxides (NO_X) from diesel-powered automobiles is an interesting yet important problem. While recent trends place an obsession on EVs, it is important to note the reality behind electric-powered vehicles. EVs, powered by electric batteries, often draw power from the grid, which mainly relies on coal. This paradox highlights the importance of optimizing conventional automobiles to reduce NO_X emissions while the global economy navigates the complex web of energy utilization methods and their environmental impacts.

Distinguishing between petrol and diesel-propelled engines offers deeper insights into the complicated challenges of emission control. Petrol engines, though initially emit less NO_X, demonstrate diminished fuel efficiency in the long run when compared to their diesel counterparts. This efficiency is shown in the cumulative NO_X emissions per kilometer. Diesel engines, owing to their superior mileage, offer a more enduring solution when assessing the cumulative NO_X emissions of an automobile over its lifespan. However, diesel engines come with their own set of disadvantages such as the large size of particles that are emitted and their combustion complexity. This is where leveraging catalytic converters comes into the picture. These converters, which mostly use catalysts such as transition metal oxides, work by converting the NO_X to other molecules that are less harmful. This works by having a reduction reaction in an oxygen-rich environment.

In recent times, a lot of interest has been shown in exploring novel catalysts to further optimize NO_X reduction. The use of reducing agents has also increased. The challenge lies in finding the optimal way of synthesizing these catalysts as selectivity greatly depends on the method of synthesis. Methods such as wet impregnation, single-step sol-gel synthesis, and one-pot synthesis methods have been widely used in production. The converter's performance is also enhanced by using and carrying out modeling of different inlet manifolds, central monoliths, and outlet sections to alter the inlet flow distribution. Commonly, a straight manifold or U-bends are used by most manufacturers. The difference occurs in non-isothermal conditions where the manifold used can affect the reaction mechanism due to the temperature variation on the geometries. Recyclability is another factor when developing a novel catalyst; Modern catalysts such as Ni/Ru supported on Al-SBR-15 can provide 5 cycles without much difference in NO_X conversion, thus showcasing its stability. Another area where there has been a lot of interest in research is proposing kinetic

models for optimization; multi-scale microkinetic modeling. Various variables such as temperature, inlet feed composition, inlet velocity, NO ratio, and metal-metal interface activity on catalyst surface sites are studied. The challenges at present include reducing the reaction mechanisms while also pushing the effectiveness of catalysts at a lower temperature window or reducing the temperature at which absolute conversion occurs. Coking is another issue at present for which finding the optimal conditions for NO_X conversion to N_2 is currently an interesting area of research.

Thus, when looking at the broader landscape of transport fuel sustainability, IC engines at present surpass EVs considering the environmental, economic, and even ethical factors, particularly when EVs run on electricity generated from coal and the poorly regulated mining industries with child labor and hazardous working conditions that shadow the seemingly green image of EVs. Goals such as a 100 % transition to EVs by 2040 or 2050 are highly unrealistic given the constant economic instability. The catalytic converter industry was valued at around 42.8 billion USD in 2021 and is expected to grow to 76.7 billion USD by 2030 with a CAGR of 9 %, with the leading players being Tenneco, Faurecia, Bosal, and Eberspächer, and Rhodium being the leading material produced in 2021. Diesel-propelled engines are here to stay for a long time, and now, with the development of excellent catalysts which even show 100 % conversion of NO_X, it is no doubt that automotive catalysis will be a key area in which research and industry will flourish in the near future, where catalyst innovation and optimization in IC engines will be a driver in steering the industry to a more economical and responsible future.

திருக்குறள்

குறள் எண் – 35
பால் – அறத்துப்பால்
அதிகாரம் – அறன் வலியுறுத்தல்/ Assertion of the Strength of Virtue

அழுக்காறு அவாவெகுளி இன்னாச்சொல் நான்கும்
இழுக்கா இயன்றது அறம்.

Transliteration (Tamil to English):
azhukkaaRu avaavekuLi innaachchol naankum
izhukkaa iyandradhu aRam

English Couplet 35:
Tis virtue when, his footsteps sliding not through envy, wrath,
Lust, evil speech-these four, man onwards moves in ordered path

பொருள்
பிறர் மேன்மை கண்டு பொறாமை, அளவற்ற ஆசை, இவை தடைபடும் போது வரும் கோபம், கோபத்தில் பிறக்கும் தீய சொல் எனும் இந்நான்கையும் விலக்கித் தொடர்ந்து செய்யப்படுவது அறம்.

Couplet Explanation:
That conduct is virtue which is free from these four things, viz, malice, desire, anger and bitter speech

Translation
Envy, greed, wrath and harsh words: These four avoided is virtue.