



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)



CHEM-REFLECT

ISSUE - 6 (JAN 2022- JUN 2022)

NEWSLETTER FROM

SCHOOL OF CHEMICAL ENGINEERING.

VELLORE INSTITUTE OF TECHNOLOGY

www.vit.ac.in/schools/scheme

The Mission Of the School

To prepare the graduates for a rewarding career by providing quality education in Chemical Engineering in tune with evolving requirements of the society.

To impart knowledge and develop technology through quality research in frontier areas of chemical and inter-disciplinary fields.

Vision



To improve the quality of life through innovations in Chemical Engineering



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About SCHEME

“Making the world a better place by chemical engineering”

The School of Chemical Engineering (SCHEME) is determined to nurture new talents and create leaders and entrepreneurs who can bring value addition to the chemical and allied process industries. Besides high quality teaching and instruction at UG level, the faculty members of the school are actively involved in executing a number of R&D and consultancy projects from government agencies including DST, DBT and also from many reputed industries. The school has also regularly benefited from international linkages facilitated by University-level MoU-Js with a number of leading foreign universities



CHEMICAL ENGINEERING

WORLD RANK: 301 – 350

INDIAN RANK: 11

Message From The Dean

Dear readers,

Welcome to the 6th issue of the newsletter of the School of Chemical Engineering.

This issue provides information about the publications and research work of our faculty and students. The awards and honours received, the teaching-learning and research process and much more is explored.

SCHEME houses B.Tech and PhD programmes in Chemical Engineering. All faculty members are doctorates from reputed institutions in India and abroad. There are 124 students in the final year, 136 students in the third year, 107 students in the second year, 164 students in the first year of B.Tech and 18 PhD students in our school.

I hope you find this newsletter engaging. While the newsletter provides a bird's eye view of the accomplishments of the School, you are welcome to contact the Office of SCHEME to know further details about us

Dr. Muruganandam L
Dean, SCHEME - VIT



Our Faculty members



Dr. Muruganandam. L
Professor & Dean



Dr. Anand V P Gurumoorthy
Professor



Dr. Mahesh Ganesa Pillai
Professor



Dr. Shishir Kumar Behera
Professor



Dr. Thomas Theodre
Professor



Dr. Aruna Singh
Professor



Dr. Velu S
Professor



Dr. Chitra D
Associate Professor



Dr. Monash P
Associate Professor



Dr. Mohammed Rehaan Chandan
Associate Professor



Dr. Nagamalleswara Rao K
Associate Professor



Dr. Nirmala G S
Associate Professor



Dr. Shankar Raman
Dhanushkodi
Associate Professor



Dr. Sivagami K
Associate Professor



Dr. Babu
ponnusami A
Associate Professor



Dr. Aabid Hussain
Shaik
Assistant Professor



Dr. Aslam Abdullah M
Assistant Professor



Dr. Bandaru Kiran
Assistant Professor



Dr. Dharmendra Kumar
Bal
Assistant Professor



Dr. Karthika S
Assistant Professor



Dr. Samarshi Chakraborty
Assistant Professor



Dr. Rima Biswas
Assistant Professor

Student Achievements



•Sparsh Modi (18BCM0001) has secured the first position in Ergnization, organised by UPES AAPG student chapter in Crust 2022 from 8th-10th April. The event involved a quiz and energy calculation problem.

•A 3 membered team, comprising of Sparsh Modi(18BCM0001), Neeraj Warriier (18BCM0002) and Haile T Jose has secured 1st position in Ergnization in Crust'22, held by UPES AAPG.



•Satvik Verma (18BCM0066) has secured 8th all India Rank for GATE Chemical Engineering paper in 2022.



•Alavya Tiwari (19BCM0036) has secured 1st position in Raman Research Award for the month of March 2022, conducted online.



•Shaily Gupta (19BCM0132) has secured 2nd position in CHEM-E-Naire Quiz competition under Swanirvahan 2022, organised by ICT IOCB.

•A 3 membered team comprising of Sachin Bhaskar Rajesh (20BCM0046), Ganpati S Nayak (29BCM0044) and Trisha Daftari (20BCM0067) has secured the 1st position in Chem-e-Case, an IDP based competition held by AIC-hE-BITS and AICHE-NITR.

•Shriman K (20BCM0170) has secured 1st position in U-2000 rating category chess tournament held online by Kasparov Chess Foundation(KCF).



•Meenakshi MS (21BCM0054) has secured the 3rd position in Innovation and Invention Competition (IIC) ORGANISED BY IChemE Malaysia.

•Meenakshi MS (21BCM0054) has secured the 2nd position in the Paper Presentation on Nanocatalysis organized by AAPG UPES.



•Meenakshi MS(21BCM0054) has secured the 1st position in the Chem-E-Jeopardy. This event was organized in collaboration with AIChE RGIPT and BITS Pilani Dubai.

•Meenakshi MS(21BCM0054) has secured the 1st position in the Solo Eastern Dance Competition organized by VIT during the Prima Vera fest.

•Meenakshi MS (21BCM0054) has secured the 1st position in Carbo Corrosion: a two-round abstract presentation event for solutions to machinery corrosion. The event was organized by IChE-VIT.

•Meenakshi MS (21BCM0054) has secured the 2nd position in an event called Eleven Hour, organized by AIChE-VIT.

•Kritika Agarwal (21BCM0180) has secured the 1st position in a Fresher's Basketball Tournament organized by VIT's Sports Department.



Student Achievements in Higher Studies



Saakshi M. Jilhewar has secured excellent Marks on the Graduate Record Exam (GRE) Test. With a 148 in Verbal Reasoning, 160 in Quantitative Reasoning, and a 3 for the Analytical Reasoning section, her score can almost be considered a perfect GRE score.

Rajvansh Singh Verma, with his excellent resume and academic results, was accepted to the State University of Arizona for higher education in the MS program for Chemical Engineering



Yash Agarwal was admitted to AMITY University for his Higher Education. He will be pursuing his MBA during the Academic time period of 2021-2023

Sanjay Venkatachalam was admitted to the EPFL doctoral program in Chemistry and Chemical Engineering, one of the most prestigious European schools for Engineering, thanks to his excellent academic performance



Faculty Achievements

Dr. Mohammed Rehan Chandan was awarded with Reviewer certificate for Advanced Engineering Materials, by the American multinational publishing company Wiley on 29th of March, 2022.

Dr. Nagamalleswara Rao K was given Recognition by STM Journals on 8th March, 2022.

Dr. Aruna Singh was awarded a certificate of Reviewing by Institute of Food Science and Technology on 6th March, 2022.

Dr. Nagamalleswara Rao K was awarded a certificate of Reviewing by Journal of Cleaner Production on 23rd February, 2022.

Dr. Mohammed Rehan Chandan was awarded with Reviewer certificate for Applied Polymer Science by Wiley, on 10th February, 2022.

Our Sponsored Projects

Prof. Bibhuti Bhusan Sahoo (SMEC) and Prof. Dharmendra Kumar Bal (SCHEME), joint project- A Novel and Cost-effective Biogas Purification Technology using Polyacrylamide, was funded by the agency DST, sanctioned on 21st February, 2022

Patent Filed

*" Ethylene Propylene Diene Monomer (EPDM)
Hybrid Composite for High Voltage Outdoor
Insulation Applications "*

Inventors:

- 1. Mohammed Rizwan (18PHD0134)**
- 2. Dr. Aabid Hussain Shaik**
- 3. Dr. Mohammed Rehaan Chandan**



Events organised By Chapters



American Institute of Chemical Engineers – VIT

American Institute of Chemical Engineers, Vellore Institute of Technology, Student Chapter has organized 13 events.



Indian Institute of Chemical Engineers – VIT

Indian Institute of Chemical Engineers, Vellore Institute of Technology, Student Chapter has organized 43 events.



Society of Petroleum Engineers – VIT

Society of Petroleum Engineers, Vellore Institute of Technology, Student Chapter has organized 08 events



Events organised By School

Industrial Academy Conclave - 2022

VIT
Vellore Institute of Technology

SPE
Society of Petroleum Engineers

INDUSTRY ACADEMIA CONCLAVE - 2022

ORGANIZED BY
SCHOOL OF CHEMICAL ENGINEERING (SCHEME),
VELLORE INSTITUTE OF TECHNOLOGY, VELLORE
AND
SOCIETY OF PETROLEUM ENGINEERS - VIT, CHAPTER

ORGANIZING CHAIR
DR. L. MURUGANANDAM,
DEAN, SCHEME, VIT

ORGANIZING COMMITTEE
DR. ARUNA SINGH, SCHEME
DR. M ASLAM ABDULLAH, SCHEME
DR. MAHESH GANESA PILLAI, SCHEME
DR. BANDARU KIRAN, SCHEME

DETAILS
DATE: 2nd FEBRUARY,
INAUGURATION: 10:00 HRS
PROGRAMME: 9:30 to 17:30 HRS

Mr. Kumar Padmanabhan
Business Head - Asia Pacific,
Packaging coatings,
Asian Paints PPG.
Title: Focus areas and behaviors
required to succeed in the
next decades

Mr. Shyamal Kumar De
Senior Vice President
(Technology and Operations),
Atul Ltd, Chemicals Company
India.
Title: Sustainable manufacturing
practices in Chemical Industry –
current trend and future challenges

Mr. Vijay Vir Singh
National Head (Sales & Marketing),
Mightman Organics Ltd,
India.
Title: Role of Pesticides in
Indian Agriculture

Mr. Madhavan Iyengar
Managing Director & CEO,
MWI Pharma,
India.
Title: Career Opportunities for
Chemical Engineers:
Specific Focus on Supply
Chain Management

Mr. Shaheel TTP
Managing Director,
India & South Asia,
Takasago International India Pvt. Ltd,
India.
Expert Talk

JOINT THROUGH
Meeting ID: 861 4498 2984
Passcode: 045028

The Faculty, Staff, and Students of the School of Chemical Engineering (SCHEME) at VIT organized an Industry Academic Conclave, the Inaugural ceremony of which was held on 2nd February 2022, at 10:00 am. Mr. Kumar Padmanabhan was the Chief Guest. Mr. Vijay Vir Singh and Mr. Madhavan Iyengar were the Guests of Honor. Dr. G Vishwanathan presided over the ceremony that was organized by Dr. K. Sathiyarayanan and Dr. L. Muruganandam.

VAC – on Computer Aided Simulation in Chemical Engineering

(March 05th to 20th, 2022)



Coordinators:


*Dr Bandaru Kiran &
Dr Monash P*

Resource Persons:

1. *Dr. L Muruganandam*
2. *Dr. Bandaru Kiran*
3. *Dr. Monash P*

This course aimed to provide students rich hands on experience on the use of simulation tools such as MATLAB; ASPEN PLUS; COMSOL MULTIPHYSICS in addressing Chemical Engineering Problems. The students learnt how to simulate the design of new plants, debottlenecking, optimizing the performance of units. It proved very beneficial to participants.

Webinar Attended

- Dr. V Bhadra Rao Koruprolu and Dr. Nirmala Gnanasundaram's Abstract, titled The Effect of Different Type of Grinding Media and its Weight Ratios on Rougher Flotation Performance of Calcareous low-grade Graphite Ore, was accepted as a contributory paper for the presentation in the ACMS 2022.
 - Dr. K Sivagmi successfully participated in the First International Conference for Sustainable Water Management from 23rd to 25th March 2022. This was Organized by the Indian Institute of Technology Madras, Chennai, India.
 - Dr. Jayakaran P, Dr. Nirmala G.S., and Dr. Nachiapan Senthilnathana participate and presented the paper titled Novel Green Synthesis of MgO Nanoparticles for Effective Photocatalytic Applications at the first International Conference for Environmental Science and Engineering for a Sustainable Development (EESD 2022).
 - Dr. Mahesh Ganesapillai, Aritro Sinha, Rishabh Mehta, and Aditya Tiwari participated in the 2nd International Conference on Water, Megacities, and Global Change (EAUMEGA 2022) which took place from 11th to 14th January 2022. They presented the Abstract Poster for Recovery of Nutrients from Human Urine through Precipitation and Dehydration.
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Guest Lectures

- Dr. Bandaru Kiran has organised an Industry Expert Lecture on “An Overview on Petroleum Refinery” delivered by Dr. Chiranjeevulu S, Retired Chief Manager, MRPL, Mangalore, on 13th April 2022. Industry Expert Lecture on “Rubber Process Oils - shift from conventional to bio-sustainable products”, delivered by Mr. Victor Chatterjee, Research Engineer, Total Energies Marketing India Limited, on 28th April 2022.
- Dr. Reema Biswas, Dr. Monash P, and Dr. Reema Biswas organised a guest lecture on “Java Future Entrepreneurs- Vision and Execution”, by Mr. Prosenjit Singhroy, Sr. Technical Lead, Application Development Tata Consultancy Services, Kolkata, on 22nd May, 2022.
- Dr. Rima Biswas has organised an Industry Expert Lecture on “Fundamentals, preparation, and applications of polymeric membranes” delivered by Dr. Mrinmoy Mondal, Scientist, CSMCRI, Gujarat, on 28th April, 2022.
- Dr. L Muruganandam and Dr. Reema Biswas have organised a guest lecture on “Data Mining and Machine Learning in Science and Engineering” delivered by Dr. Yang, Yan-Ling, and Asst. Professor, Department of Chemical and Materials Engineering Tamkang University, Taiwan, on 24th June 2022.
- Dr. D Chitra and Dr. Aabid Hussain Shaik organised a Guest Lecture on “Flow Assurance and Thermal Management in Oil and Gas Industry” delivered by Mr. Srihari Sampathkumar, Principal Process Engineer, Saipem India Projects Pvt. Limited, India on 23rd April 2022.
- Dr. Shishir Kumar Behera organised a Guest Lecture on “Compressed air in Process industry” delivered by Mr. Deepak Gokhale, General Manager (Energy and Sustainability), Aditya Birla Science & Technology Company Pvt. Ltd., India on 23rd April 2022.

- Dr. M Aslam Abdullah and Dr. Rima Biswas organised an Industry Expert Lecture on “3D Reservoir Modelling” delivered by Mrs. Sarah Nagasawa, Petroleum Geologist, Schlumberger, USA, on 23rd April, 2022.
- Dr. Mohammed R Chandan and Dr. Aabid Hussain Shaik organised a Foreign Expert Lecture on “Chemical Engineering in the Era of Pollution” delivered by Dr. Karishma P, Research Scientist, Canadian Nuclear Lab, Canada, on 11th April 2022.
- Dr. Chitra D and Dr. Mohammed R Chandan organised a Guest lecture on “Predictive Maintenance of Chemical Engineering Processes” delivered by Dr. Subramani A, Sr. Engineering, GE Aviation, India, on 16th April 2022.
- Dr.A. Babu Ponnusami and Dr.K.Sivagami organised a Guest Lecture on “Applications of biological processes for waste treatment” delivered by Mr. Bharat Thyagarajan, Manager - Sales, Environment Division, Ion Exchange India Limited, Chennai, on 21st April 2022.
- Dr. Dharmendra Kumar Bal and Dr. Karthika S organised a Guest Lecture on “Industrial Data Analytics for Industrial Engineers” delivered by Mr. Aswin Venugopal, Data Science Research Engineer, Siemens Technology & Services Pvt. Ltd. Bangalore on 12th April 2022.
- Dr. Velu S and Dr. Aabid Hussain Shaik organised a Guest Lecture on “Fluid Catalytic Cracking for Enhanced Gasoline Production” delivered by Mr. Muktyar, Sr. Scientist, IOCL, Faridabad on 23rd April 2022.
- Dr. Shishir Kumar Behera organised a Guest Lecture on “Applications of Drying in Food Industry” delivered by Dr. Amarvir Goverdhan Chilka, Head, CFD Modeling Group, AG Furnace Improvements Pvt. Ltd., India on 16th April 2022.

Books Chapters by

SCHEME



- Aishwarya, G. Sruthi, M. N. Aditya, K. Sivagami & Samarshi Chakraborty, Chapter Title: Biomass Energy Conversion Using Thermochemical and Biochemical Technologies, Publisher: Springer Link, Ed: Dan Bahadur Pal, Jay Mant Jha In Sustainable and Clean Energy Production Technologies, pp. 93-131, ISBN: 9789811691355. DOI: 10.1007/978-981-16-9135-5
- V. Sruthi, P. Jyothirmai, E. Anagha, S. Aishwarya, Abhilash T. Nair, Samarshi Chakraborty, K. Sivagami, Chapter Title: Microalgae Coupled Biofuel Production and Carbon Capture from Thermal Power Plant: A Biorefinery Approach, Publisher: Springer Nature Singapore, Ed: Yogalakshmi Kadapakkam Nandabalan, Dr. Vinod Kumar Garg, Dr. Nitin K. Labhsetwar, Dr. Anita Singh In Zero Waste Biorefinery, pp. , ISBN: 9789811686825, DOI:
- M.N. Aditya, Mrigank Sharma, S.Aishwarya, Sivagami K, Karthika S, Samarshi Chakraborty, Chapter Title: Water Pollution Hazards of Single-Use Face Mask in Indian Riverine and Marine System, Publisher: Springer Singapore, Ed: Manish Kumar, Sanjeeb Mohapatra In Impact of Covid-19 on Emerging Contaminants, pp. 177-209, ISBN: 9789811918476, DOI: 10.1007/978-981-19-1847-6
- Aditi Bilgaiyan, Riddhi Goel, Sonali Singh, and Anand V. P. Gurumoorthy, Chapter Title: A Review of Alternative Sustainable Methods of Ammonia Production, Publisher: Springer Cham, Ed: Jatinder Kumar Ratan, Deepak Sahu, Nitin Naresh Pandhare, Anjireddy Bhavanam In Advances in Chemical, Bio and Environmental Engineering, pp. 121-133, ISBN: 9783030965549, DOI: 10.1007/978-3-030-96554-9



Journal Publications

1) Shenbagamuthuraman, V., Patel, A., Khanna, S., Banerjee, E., Parekh, S., Karthick, C., Ashok, B., Velvizhi, G., Nanthagopal, K. and Ong, H.C., 2022. State of art of valorising of diverse potential feedstocks for the production of alcohols and ethers: Current changes and perspectives. **Chemosphere**, 286, p.131587.

2) Chadha, U., Bhardwaj, P., Selvaraj, S.K., Kumari, K., Isaac, T.S., Panjwani, M., Kulkarni, K., Mathew, R.M., Satheesh, A.M., Pal, A. and Gunreddy, N., 2022. Advances in chitosan biopolymer composite materials: from bioengineering, wastewater treatment to agricultural applications. **Materials Research Express**, 9 052002.

3) Shukla, M., Baksi, B., Mohanty, S.P., Mahanty, B., Mansi, A., Rene, E.R. and Behera, S.K., 2022. Remediation of chromium contaminated soil by soil washing using EDTA and N-acetyl-L-cysteine as the chelating agents. **Progress in Organic Coatings**, 165, p.106704.

4) Jacqueline, P.J., Muthuraman, V.S., Karthick, C., Alaswad, A., Velvizhi, G. and Nanthagopal, K., 2022. Catalytic microwave preheated co-pyrolysis of lignocellulosic biomasses: A study on biofuel production and its characterization. **Bioresource Technology**, 347, p.126382.

5) Arumugam, C., Shaik, S., Shaik, A.H., Kontoleon, K.J., Mazzeo, D. and Pirouz, B., 2022. Polymer and non-polymer admixtures for concrete roofs: Thermal and mechanical properties, energy saving and carbon emission mitigation prospective. **Journal of Building Engineering**, 45, p.103495.

Journal Publications

- 6) Aditya, M.N., Chellapandi, T., Prasad, G.K., Venkatesh, M.J.P., Khan, M.M.R., Madhumitha, G. and Roopan, S.M., 2022. Biosynthesis of rod shaped Gd₂O₃ on g-C₃N₄ as nanocomposite for visible light mediated photocatalytic degradation of pollutants and RSM optimization. **Diamond and Related Materials**, 121, p.108790.
- 7) Thawani, B., Mahanty, B. and Behera, S.K., 2022. Characterization of refuse derived fuel samples prepared from municipal solid waste in Vellore, India. **Environmental Technology**, 43(12), pp.1843-1852.
- 8) Vinay, V.C., Varma, D.S., Chandan, M.R., Sivabalan, P., Jaiswal, A.K., Swetha, S., Kaczmarek, B. and Sionkowska, A., 2022. Study of silver nanoparticle-loaded auxetic polyurethane foams for medical cushioning applications. **Polymer Bulletin**, 79(6), pp.4233-4250.
- 9) Arumugham, T., Ouda, M., Krishnamoorthy, R., Hai, A., Gnanasundaram, N., Hasan, S.W. and Banat, F., 2022. Surface-engineered polyethersulfone membranes with inherent Fe–Mn bimetallic oxides for improved permeability and antifouling capability. **Environmental Research**, 204, p.112390.
- 10) Rambabu, K., AlYammahi, J., Thanigaivelan, A., Bharath, G., Sivarajasekar, N., Velu, S. and Banat, F., 2022. Sub-critical water extraction of reducing sugars and phenolic compounds from date palm fruit. **Biomass Conversion and Biorefinery**, pp.1-12.
- 11) Zafar, M., Aggarwal, A., Rene, E.R., Barbusiński, K., Mahanty, B. and Behera, S.K., 2022. Data-Driven Machine Learning Intelligent Tools for Predicting Chromium Removal in an Adsorption System. **Processes**, 10(3), p.447.
- 12) Joy, M., Chandrasekharan, G., Khan, M.A., Arunachalapandi, M., Chellapandi, T., Harish, D., Chitra, D. and Roopan, S.M., 2022. Citrus lemon mediated green synthesis of ZnTiO₃ nanospheres for the degradation of petrochemical wastewater. **Environmental Quality Management**.
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Journal Publications

- 13) Al-Hoqani, M., Zafar, M., Al Musharafi, S.K., Mahanty, B. and Behera, S.K., 2022. COD fractionation and solubility assessment of sonicated waste-activated sludge. **Environmental Quality Management**, 31(3), pp.347-354
- 14) Sivagami, K., Kumar, K.V., Tamizhdurai, P., Govindarajan, D., Kumar, M. and Nambi, I., 2022. Conversion of plastic waste into fuel oil using zeolite catalysts in a bench-scale pyrolysis reactor. **RSC advances**, 12(13), pp.7612-7620.
- 15) Khanongnuch, R., Abubackar, H.N., Keskin, T., Gungormusler, M., Duman, G., Aggarwal, A., Behera, S.K., Li, L., Bayar, B. and Rene, E.R., 2022. Bioprocesses for resource recovery from waste gases: Current trends and industrial applications. *Renewable and Sustainable Energy Reviews*, 156, p.111926. Patil, G.N. and Gnanasundaram, N., 2022. Energy-saving investigation of vacuum reactive distillation for the production of ethyl acetate. **Chemical Product and Process Modeling**.
- 16) Tang, V.T., Li, Q., Rene, E.R., Behera, S.K., Maleki, A., Da, C.T. and Phong, N.T., 2022. Immobilization of microorganisms in activated zeolite beads and alkaline pretreated straws for ammonium-nitrogen removal from urban river water. **Water Science and Technology**, 85(1), pp.63-76.
- 17) Ganesa Pillai, M., Goyal, S., Zawar, A., Kumar, M.A., Bakshi, H.S. and Nakamura, K., 2022. An experimental study probing moisture kinetics and indices of microwave dried fecal sludge with an insight on real world applications. **Separation Science and Technology**, pp.1-15
- 18) Ganesapillai, M., Sinha, A., Mehta, R., Tiwari, A., Chellappa, V. and Drewnowski, J., 2022. Design and Analysis of Artificial Neural Network (ANN) Models for Achieving Self-Sustainability in Sanitation. **Applied Sciences**, 12(7), p.3384.
- 19) Dhayananth, N., Karthika, S., Kalaichelvi, P. and Radhakrishnan, T.K., 2022. Correlation of solubility data and solution properties of chlorzoxazone in pure solvents. **The Journal of Chemical Thermodynamics**, 170, p.106777

Journal Publications



20) Devi Priya, D., Rahman Khan, M.M., Mohana Roopan, S., Sreedhar, D., Nandhakumar, M. and Ganesapillai, M., 2022. Organic contaminants: photocatalytic degradation using HHP/CuONPs (2D/3D) composite as a heterogeneous catalyst. **International Journal of Environmental Analytical Chemistry**, pp.1-19.


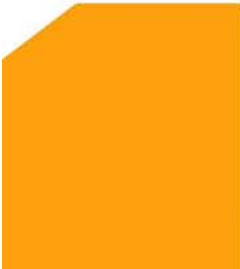
21) Rizwan, M. and Chandan, M.R., 2022. Role of polymer-filler interaction on Mg (OH) 2 and alumina trihydrate-loaded ethylene propylene diene monomer based polymer composite for high voltage insulation application. **Journal of Applied Polymer Science**, 139(20), p.52164.

22) Venkatraman, S.K., Vijayakumar, N., Bal, D.K., Mishra, A., Gupta, B., Mishra, V., Wysokowski, M., Koppala, S. and Swamiappan, S., 2022. Degradation of environmentally harmful textile dye rhodamine B using silicate ceramic photocatalysts. **Inorganic Chemistry Communications**, 142, p.109674

23) Mondal, B., Rangaiah, G.P. and Jana, A.K., 2022. Optimizing algal biodiesel production from a novel reactive distillation based unit: Reducing CO2 emission and cost. **Chemical Engineering and Processing-Process Intensification**, 176, p.108948.

24) Joaquin, A.A., Sivamani, S. and Gnanasundaram, N., 2022. Statistical experimental design and analysis of mixed natural-synthetic coagulants for the reduction of total suspended solids and turbidity in sewage wastewater treatment. **Biomass Conversion and Biorefinery**, pp.1-8.

25) Bal, D.K., Chandan, M.R., Taneja, R., Tiwari, R.R., Saboor, S., Mishra, D., Ghosh, A. and Shaik, A.H., 2022. Biocompatible polymer-capped oxidation-resistant copper nanoparticles for nanofluid and hydrogel applications. **The European Physical Journal Plus**, 137(1), pp.1-16.



Journal Publications

26) Patil, G.N. and Gnanasundaram, N., 2022. Energy-Saving Investigation of Entrainer Enhanced Vacuum Reactive Distillation for Ethyl Acetate Production. **ECS Transactions**, 107(1), p.9841.

27) Chadha, U., Selvaraj, S.K., Thanu, S.V., Cholapadath, V., Abraham, A.M., Zaiyan, M., Manikandan, M. and Paramasivam, V., 2022. A review of the function of using carbon nanomaterials in membrane filtration for contaminant removal from wastewater. **Materials Research Express**, 9 012003.

28) Chadha, U., Bhardwaj, P., Padmanaban, S., Suneel, R.M., Milton, K., Subair, N., Pandey, A., Khanna, M., Srivastava, D., Mathew, R.M. and Selvaraj, S.K., 2022. Contemporary progresses in carbon-based electrode material in Li-S batteries. **Journal of the Electrochemical Society**, 169(2), p.020530.

29) Tiwari, A., Tiwari, A., Bhatia, A., Chadha, U., Kandregula, S., Selvaraj, S.K. and Bhardwaj, P., 2022. Nanomaterials for electromagnetic interference shielding applications: a review. **Nano**, 17(02), p.2230001.

30) Chadha, U., Selvaraj, S.K., Ashokan, H., Hariharan, S.P., Mathew Paul, V., Venkatarangan, V. and Paramasivam, V., 2022. Complex nanomaterials in catalysis for chemically significant applications: from synthesis and hydrocarbon processing to renewable energy applications. *Advances in Materials Science and Engineering*, 2022. Chadha, U., Sinha, S., Jonna, J., Goswami, M., Ghani, H., Nair, K., Pandey, N., Kataray, T., Selvaraj, S.K., Bhardwaj, P. and Banavoth, M., 2022. Chemical Structures and Stability of Carbon-doped Graphene Nanomaterials and the Growth Temperature of Carbon Nanomaterials Grown by Chemical Vapor Deposition for Electrochemical Catalysis Reactions. **ECS Journal of Solid State Science and Technology**, 11(4), p.041003.

31) Yandrapu, V.P. and Kanidarapu, N.R., 2022. Conceptual Design of Methyl Chloride Production Processes: A Review. **Periodica Polytechnica Chemical Engineering**, 66(3), p. 341–353.

Journal Publications

32) Muthuraman, V.S., Patel, A., Shreya, V., Vaidyanathan, A., Reshwanth, K.N.G.L., Karthick, C., Geça, M.J., Ashok, B., Sivagami, K. and Nanthagopal, K., 2022. Progress on compatibility issues of alcohols on automotive materials: Kinetics, challenges and future prospects-a comprehensive review. **Process Safety and Environmental Protection**, 162, p.463-493.

33) Gyaneshwar, A., Selvaraj, S.K., Ghimire, T., Mishra, S.J., Gupta, S., Chadha, U., Manoharan, M. and Paramasivam, V., 2022. A Survey of Applications of MFC and Recent Progress of Artificial Intelligence and Machine Learning Techniques and Applications, with competing fuel cells. **Engineering Research Express**, 4(2), p.022001

34) Sivagami, K., Kumar, K.V., Tamizhdurai, P., Govindarajan, D., Kumar, M. and Nambi, I., 2022. Conversion of plastic waste into fuel oil using zeolite catalysts in a bench-scale pyrolysis reactor. *RSC advances*, 12(13), pp.7612-7620.

Conference Publications

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Our Alumni Talks-

{Dr. Karishma P, Research Scientist, Canada}

Excerpts from the interview:-

1)Ma'am, you are a well-established and successful person. Can you please tell us about yourself?

I am working as a research scientist at a Canadian Nuclear Laboratory(CNL). I work on environment and waste technologies. I deal with breaking down complex pollutants in soil.

2)How was your life at VIT?

I had a lovely time at VIT. It was one of the best parts of my life till now. I am a very introverted person, and initially I had some communication problems. But VIT really helped me in bringing out my skills. It's a very chilled out place. You will have to study harder, but you will get amazing opportunities and friends. It's a very inspiring place

3)What is SCHEME to you? What would you say regarding the opportunities and experiences?

We had the FFCS system, and it was great. The labs were up to date and well-equipped. The Professors were very helpful. They were very co-operative. I never knew I wanted to be so deeply involved in chemical engineering. But SCHEME helped me discover my passion. I was part of many seminars and conferences with different professors from across the world. I got so inspired by them that I wished to publish my own paper, which I eventually did. VIT is a huge part of what I am today.

4) Earlier this year in April, at a guest lecture organised by SCHEME, you spoke about Chemical Engineering in the era of pollution. What do you think the role scheme-vit and chemical engineers can play in this?

Right now, when global warming, pollution and climate change is going on, chemical engineering, is the most important stream. We deal with pollution in air, water and soil. And we can protect our environment if we learn to deal with this. Do not select a career just for the sake of money. Oil and gas industry is there to let you make a lot of money, but those are not going to be the eventual industries of the world. We need chemical engineers to deal with pollutants, for breaking down the chemicals. Catalysis and reaction engineering basically for this purpose. We are intelligent enough to develop sustainable, good fuels which do not create pollution. We have to make use of sunlight, CO₂. One of my PhD projects was converting waste CO₂ into useful hydrocarbons. Remember- Waste is a resource.

5) What message would you like to give to the present batches of SCHEME-VIT?

When you complete your studies, your engineering, the world will be there to deviate you in every possible way. Do what you like. Do not overthink things like 'This will not give me enough money' 'This is not the right career path'. Pursue what you want. Money is obviously important, but what you work on is your life. Also if you love chemical engineering, please use that to save the environment. Pursue your dreams. Best of luck!

Dr. Karishma P
Research Scientist, Canada.



Students Review



From 2nd year students:-

1. How has been your experience in Vit and school of chemical engineering?


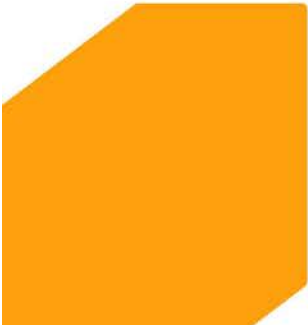
My experience has been completely different from school life. We all have got proper guidance regarding several opportunities for self development. I am proud to be a part of this institute. I am glad I took chemical engineering. SCHEME is amazing.

2. What do you think about the curriculum and faculty?

The curriculum for each semester. Like the method of choosing comfortable credits for each semester. All faculties are highly educated, their teaching methods are good and they try their best to help us.

3. What are your thoughts about the opportunities provided by scheme?

SCHEME puts in efforts for bringing out the efficiency in its students. Even organized extra Value Added Courses for exposure and additional knowledge. Not to mention the multiple webinars and industrial expert lectures they conduct from time to time.



4. What are your thoughts on ffcs? Do you find it useful?

FFCS is actually a feasible way to select our courses since you get the privilege of choosing convenient slots and required faculties. The server can be more efficient but otherwise ffcs provides us with a lot of flexibility.

5. Do you find the labs well equipped and up to date?

I can't really comment on it since we haven't attended enough lab classes. As far as now, they are well equipped.

Sahana G
Program Representative
2nd Year



From 3rd Year students:

Thoughts on VIT, SCHEME and opportunities:-

My experience in VIT has been great. The School of Chemical Engineering is one of the best schools here at VIT. The teaching is really amazing, the faculty is friendly and easy to communicate with. Growing up in the Indian education system, this is something I have not encountered before. The professors promote and support you in whatever way they can. The Value Added courses are really good and these courses teach a lot. The professors are very efficient in using softwares like AspenHYSYS. They also conduct workshops where we can learn different softwares. The curriculum and courses are as up to the mark as any other university. We are taught courses and skills that are essential to our career. In program electives we also have specializations. We can earn foreign languages. Scheme also provides us with internship offers. Industrial visits are great. If you want to go for opportunities, VIT will always support you.

Debdyuti Chakraborty
(Editorial Domain Head, SPE-VIT)



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**Thank
You !**

Happy Reading!



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(Deemed to be University under section 3 of UGC Act, 1956)

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