



Department of Chemical Engineering (ChED)

SVNIT, SURAT



ABOUT DEPARTMENT

Established in 1995, the Department of Chemical Engineering, SVNIT, Surat offers programme leading to Bachelor's, Master's and Ph.D. Degree in Chemical Engineering. Currently, the Department has 19 faculty members with expertise in various domains of chemical engineering. The faculty members are granted several R&D projects from organizations like GUJCOST, DST, DBT, etc. and have high quality research publications and patents. The department has built a comprehensive research infrastructure with some top-notch facilities for carrying cutting-edge research. The focus research areas are membrane separation, chemical reaction engineering, catalysis, energy storage, sensor and biosensor, biomass to energy and value-added chemicals, colloids and interfacial engineering, drug delivery systems, liquid membrane, rheology, nanotechnology, modelling of chemical processes, advanced powder technology, biotechnology, computational fluid dynamics, multiphase flow, adsorption, waste water treatment, etc. 50 PhD and 167 M. Tech Awarded till date. Currently there are 27 (FIR) PhD, 7 (PEC)PhD, 1 JRF and 16 M. Tech candidates enrolled in department of chemical engineering. 35 sponsored projects, 3 course work development projects and 2 industrial projects have been completed. Paper published in reputed International and National Journals is around 700 & 365 papers are presented and/or published in national and international conference till date.

ChED Newsletter

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MESSAGE FROM HOD



I am pleased to share the yearly newsletter of the Department of Chemical Engineering. The Department of Chemical Engineering aspires to be one of the top and highly recognized Academic Department and to this end the Department is providing a highly conducive atmosphere to the Faculty and Students alike. Two themes emerged in the new world post COVID-19 pandemic are Technology and Molecules. The design and development of new molecules will play important roles in new arenas of pandemic and provide new opportunities to the Indian pharmaceutical and chemical industry. The emergence of chemical industry, particularly the specialty chemical sector in the last few years in the backdrop of recent pollution crackdown by China will provide further impetus for the growth of the Indian Chemical Industry. Chemical engineering has a lot to offer as far as novel materials/molecules are concerned and can play a pivotal role in discovering and producing new materials/molecules for the health and other needs of society. Identifying feasible economic solutions for important societal needs with available technological expertise is the main focus of the Department. The Department continues to contribute in the field of academic, research, and dissemination of knowledge even during challenging times of pandemic. The newsletter provides details about the activities undertaken by the Department. Further, this issue covers the faculty details and their achievements, Students' achievements, and events organized by the Department. We sincerely look forward to your suggestions and feedback to improve the newsletter in its next edition.

DR. CHETAN M. PATEL

*Associate Professor & Head,
Department of Chemical Engineering,
S. V. National Institute of Technology, Surat*

FACULTY PROFILE

PROF Z. V. P. MURTHY

obtained B.Tech. from REC (now NIT), Warangal; M.Tech. from IIT Kharagpur; and Ph.D. from IIT Delhi. He has over 2 years of industrial experience and over **26** years of teaching/research experience. His research interests are related to separation techniques, membrane separations, nanomaterials, etc. He has published 193 **SCI/SCIE/Scopus indexed** research/review papers and reviewed/reviewer to **168** journals. He has supervised **19** Ph.D. thesis, of which **3** got best thesis awards and **4** are going-on. He has also guided **41** M.Tech / M.E. dissertations of which 2 got best/second best dissertation awards.

International Recognition: Listed in the “**World ranking of scientist (2%)**”, published by the research team from Stanford University, USA, October 2020.

(The full list of top 2% researchers world-wide can be found at <http://shorturl.at/qHIJ4>

The subject-wise world-ranking of top 2% researchers from India is available at

<http://shorturl.at/bdix8>)

<https://www.svnit.ac.in/facup/ZVPM.pdf>



PROF PARIMAL A. PARIKH



is **DAAD** fellowship awardee and former Dean (Research & Consultancy). He has guided **20** Master's and **10** PhD students. He was deputed by **MHRD, GoI** as visiting professor at **AIT, Bangkok** and **LEAP** training programme. His research interests include (nano-) catalysis in refining and petrochemical processes and biomass conversions. He has authored **90** papers. He has been recognised with various national awards and research projects.

<https://www.svnit.ac.in/facup/pap.pdf>

PROF MOUSUMI CHAKRABORTY

is **Humboldt** fellowship awardee in 2004-05, 2009 and 2017. She has guided **23** M. Tech. dissertations and **12** Ph.D students. She has published **97** papers in international Journals and **2** book chapters. She has completed research projects from various funding agencies including **BRNS, DST R&D, AICTE, MHRD R&D**. Her research interests include nano-materials, green chemistry, separation processes, etc.

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PROF MAUSUMI MUKHOPADHYAY



is **former Head of the Department** and has **25** years of teaching experience. Her research interests are nanocomposite material for energy, environment and healthcare, advanced separation and water treatment. She has completed **4 (MHRD, IEI, BRNS, DST)** sponsored and **2** Industrial Projects. Guided/guiding **10** Ph.D. (**9** PhD awarded) and **16** M. Tech under her guidance. Published about **137** research papers (80 Journal) in international journals and conference proceedings. Recognition: Recognition as authors of the top 1% most cited articles (2015-2019) in Industrial & Engineering Chemistry Research: ACS Publications.

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FACULTY PROFILE

PROF JIGISHA K. PARIKH

a fellow of **Royal Society of Chemistry-UK** has **30** years of experience in teaching and industries. Deputed as **Scientist G at SERB-DST - Gol, New Delhi** for 3 years. She has guided/guiding **15** Ph D & **23** M.Tech dissertations. Research interest includes Biomass waste valorization through Integrated Biorefinery approach (fuels and value added chemicals through green catalysis), development of sustainable and green technology (New Materials and technology development), deriving bioactive components from plant based materials etc. She has successfully executed various projects funded by **GEDA, TIFAC, CSIR, GUJCOST, MHRD, DST-SERB** to the tune of **Rs. 5.5 Cr.** Actively engaged in industrial consultancy in the area of environmental and energy management, process design, process improvement through intensification approach, catalysis etc. She has published/presented **130** research papers in journals, conferences and book chapters at International/National level. Functioned as coordinator - Schedule I Environmental Audit and performed audit for several industries. Outstanding reviewer for many International peer reviewed publications.



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DR. CHETAN M. PATEL



is **Associate Professor** and currently **Head of the Department of Chemical Engineering, S.V. National Institute of Technology (SVNIT-Surat)**. He obtained B. E. from SVNIT-Surat (Formerly R.E.C., Surat), M. Tech. from IIT Delhi and Ph.D. from SVNIT-Surat. His main research interests are in field of **Particle Technology and Nanomaterials**. The specific research areas includes Powder characterization and handling, DEM simulations of particulate processes, production of Nanomaterials by stirred media milling, Nanomaterials preparation for drugs, lithium-ion batteries, supercapacitor and Molecular simulation of nanocomposites. He has completed one research project and one Pedagogy Project of course development. He has guided **7** M. Tech. Students. He has supervised **2** Ph. D. students and currently supervising **3** Ph. D. students. He has published **28** Research papers in peer reviewed International journals (SCI/SCIE).

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DR. MEGHAL A. DESAI

is **Associate Professor** and has **16** years of teaching experience. Currently, he is guiding **6** PhD students and **3** students have completed PhD under his guidance. He has **34** publications in International/national Journals/book chapters to his credit. He works in the area of Process intensified approach in Chemical and Allied Technology, Chemicals derived from biomass (New Materials and technology development and engineering), Application of Neoteric solvents and Waste valorization using greener concepts. In his work, Design of Experiment is effectively used to achieve the optimum conditions. He has received research project grants from **CSIR** and **SERB-DST**. He has also completed a Pedagogy project under National Mission Project on Pedagogic Research, MHRD.



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FACULTY PROFILE

DR. ARUN KUMAR JANA



is currently **Associate Professor** in the Department of Chemical Engineering, SVNIT. He joined the Department in 2007 as an Assistant Professor after doing Ph.D. from the Department of Chemical Engineering, IIT Kharagpur. He is currently working in drag reduction in pipeline transportation and heterogeneous catalysis in petrochemicals synthesis. His other research area includes multiphase flows; CFD based modelling and simulations. He has supervised 2 Ph.D. thesis and 2 are ongoing and guided 14 M.Tech. dissertations. He has completed one **DST** funded research and one pedagogy project. He has published 20 research papers in reputed journals.

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DR. JIGNASA V. GOHEL

is **Associate Professor**. She has over 19 years of teaching experience. Currently, she is guiding 3 PhD students and 2 students have completed PhD under her guidance. She works in the area of Third Generation Solar Cells, Thin film, Nanomaterials synthesis and Applications, photo electrochemical applications. She has 40 publications in International/national Journals/book chapters and 26 Publications in International Proceedings to her credit. She has 4 sponsored Research Projects in her credit (**DST SERB, TEQIP, MHRD**). She has also received a **Best Ph.D. Thesis-Research award given by IChE**. She has reviewed/reviewer to 10 **SCI/SCIE** journals.



<https://www.svnit.ac.in/facup/jvg.pdf>

DR. ALKA A. MUNGRAY



is currently **Associate Professor**. Her research area is Membrane Separation Process, Wastewater treatment, Forward osmosis (FO), Osmotic microbial fuel cells, Polymer nanocomposite etc. She has 12 years of teaching experience. She has completed 3 sponsored projects (**DRDO, MHRD and TEQIP**) and 2 are ongoing (**DST, SERB-DST**). She has published 43 International publications in International/national Journals/book chapters. She is guiding 5 Ph.D. students and 3 Ph.D. are awarded. She has **granted 1 patent on FO membrane preparation** in 2020.

<https://www.svnit.ac.in/facup/aakm.pdf>

DR. ARVIND KUMAR MUNGRAY

is currently **Associate Professor**. He has 14 years of teaching experience. He is working on wastewater treatment, waste to energy, microbial fuel cell, hybrid systems, decentralization, nanomaterials etc. He has 7 research projects to his credit from **DRDO, DST** etc. He has published 56 International publications. He has also received the **Young Engineer's award from IChE**. He is guiding 6 Ph.D. students and 5 Ph.D. are awarded.

<https://www.svnit.ac.in/facup/akm.pdf>



FACULTY PROFILE

DR. SANJAYKUMAR R. PATEL



is currently working as an Associate Professor. He has over 15 years of teaching experience. He is working on Microfluidics, Nanomedicines, Drug Delivery systems, Process intensification using microreactors, ultrasound, and membrane. Acoustic and hydrodynamic cavitations, Quality by Design in Pharmaceuticals, Optimization of Processes using Design of experiments. Wastewater treatment, Modelling and Simulation. He has 34 International publications and 6 research Projects including SERB-DST sponsored projects with more than 80 lacs to his credit. He has 5 Ph.D. under supervision and 3 Ph.D. have awarded the degree.

<https://www.svnit.ac.in/facup/srp.pdf>

DR. V. N. LAD

Associate Professor, has more than **19** years of professional experience, and guiding **4** Ph.D. students. His area of research interest includes Colloids, Interfacial Engineering, Microfluidics, Thin Films, Process Intensification, Environmentally Benevolent & Energy Efficient Process Design, Rheology of Complex Fluids, Advanced Materials, Energy Technology and Nanotechnology. His credentials involve **3** research projects including that funded by **DST** and **GUJCOST**, more than **20** international papers. He was the recipient of the **appreciation Gandhian Young Technological Innovation Award** received at the Rashtrapati Bhawan, New Delhi. Appointed as **State Coordinator** for the state of Gujarat, and for the Union Territory of Dadra and Nagar Haveli for State Specific Plan of AICTE for Technical Education in India.



<https://www.svnit.ac.in/web/department/chemical/homepage%20vnl/index%20vnl.htm>

DR. SMITA GUPTA



is working as an **Assistant Professor**. She has over **12** years of teaching experience. Her research interests include applications of liquid membranes, wastewater treatment, applications of ionic liquids in various fields like in EOR as surfactants, in wastewater treatment using membrane separation techniques as additives and in recovery of valuable materials as carriers, biochemical engineering, etc. She has published **27** International publications. She has guided **2** PhD and **6** M. Tech students.

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DR. G. C. JADEJA

currently an **Assistant Professor**, has over **8** years of teaching and research experience. His major areas of interest include valorization of biomass using novel extraction techniques and catalytic systems, developing bio lubricants, etc. He has successfully completed a **CSIR** sponsored research project and is currently handling **SERB-DST** sponsored project. He is currently guiding **6** Ph.D. students and **1** Ph.D. awarded.



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FACULTY PROFILE

DR. SUNDAR S. K.



is a doctorate from Indian Institute of Technology Bombay and is currently working as an Assistant Professor. His doctoral work resulted in one journal publication, 2 book chapters and one patent. He has over six years of teaching experience after Ph.D (Other institutes & SVNIT). His research interests include drug delivery systems, colloids, surfactants & interfaces, microfluidics, nanomaterials, waste to wealth, biochemical engineering, etc.

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DR. JOGENDER SINGH

is currently working as Assistant Professor in the Department of Chemical Engineering, SVNIT, Surat. After completing his Ph.D. from IIT Delhi, he worked in **Tecnológico De Monterrey, Mexico as Postdoctoral Researcher**. His research interests include Process Intensification, Heat Transfer and Fluid flow, Microfluidics, Micro-flow Extraction Processes, Separation Processes, CFD, Modelling and Simulation, Industrial Safety and Hazards Management. He is currently guiding 1 Ph.D. student.



<https://www.svnit.ac.in/facup/Jogender-Singh-resume.pdf>

DR. SARITA KALLA

is working as an **Assistant Professor** at the Department of Chemical Engineering, SVNIT, Surat. She graduated as engineer from University of Rajasthan in year 2008. She did Master of Technology from Aligarh Muslim University with honors in year 2015. In 2019, she obtained her PhD degree from MNIT, Jaipur. Her areas of specialization are desalination and wastewater treatment, membrane separation process and membrane fabrication, process modeling and simulation. She has published several papers in journals of International repute as well as in prestigious international conferences. Dr. Kalla has also conferred the prestigious **Prof. Shymal Kanti Sanyal Memorial Award for the Best Ph.D. Thesis** in the Area of Membranes Research with Significant Commercial Potential awarded by **Indian Institute of Chemical Engineers (IChE)**.



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DR. VINEET KUMAR RATHORE

is currently an **Assistant Professor**, has over 5 years of teaching and research experience (at SVNIT and other institutes). His major areas of interest include development of low-cost water treatment techniques, solid waste treatment, sustainability and LCA studies. He obtained his PhD from IIT Roorkee in 2018 with specialization in the same areas. He is currently supervising 1 part time PhD scholar.



FACULTY ACHIEVEMENTS

- **Prof. Z.V.P. Murthy** is listed in the “**World ranking of scientist (2%)**”, published by the research team from **Stanford University, USA, October 2020**.
- **Prof. M. Mukhopadhyay** was recognized for her top 1% articles (2015-2019) in Industrial and Engineering Chemistry Research: ACS Publications.
- **Prof. Jigisha K. Parikh** appointed as Fellow of Royal Society of Chemistry. She received credentials as **highest cited author (top 10 % citation) – RSC**. She was also **member of Technical and Financial Appraisal Committee (TFAC) R&D Scheme, RE Division of MoEF&CC for one year**. She was selected as Fellow under “**Professor B.D. Tilak Visiting Fellowship Endowment**” for the year **2021-22**.
- **Dr. Chetan M. Patel** joined as Technical Co-Director (Honorary) in a new startup company PharmaDEM, Hyderabad.
- The start-up **URISOL TECHNOLOGY PVT.LTD** has been formed under the mentorship of: **Dr. Arvind Kumar Mungray** and **Dr. Alka Mungray**. **Mr. Asfak Patel** and **Dr. Ambika Arkatkar** are the directors of this start-up. The start-up will undertake, promote or engage all kinds of research, development, marketing and management work in setting up facilities that can support waste to energy processes.
- **Dr. Alka Mungray** and her student **Dr. Pankaj Pardeshi** granted an **Indian Patent (patent No. 353731)** on **PPEA/MAA** active layer containing forward osmosis membrane and method of preparing thereof.
- **Dr. V. N. Lad** is **State coordinator for National Perspective Plan for Technical Education** in India which is an **AICTE-MHRD** initiative for the Long Term Planning of Technical Education by **AICTE** (to improve the usefulness of technical education in the country).
- **Dr. S. K. Sundar** and **Prof. Mahesh Tirumkudulu (IITB)** are granted an Indian Patent (Patent No. 348361) on Single pass process for synthesizing sub-100 nanometer liposomes from packed bed of colloidal particles.
- **Dr. Sarita Kalla** is conferred the **prestigious Prof. Shymal Kanti Sanyal Memorial Award** for the **Best Ph.D. Thesis** in the Area of Membranes Research with Significant Commercial Potential awarded by **Indian Institute of Chemical Engineers (IIChE)**.
- **Dr. Vineet Kumar Rathore** and **Prof. P. Mondal** granted an **Indian Patent (patent No. 367902)** on A system and method for simultaneous removal of arsenic and fluoride from contaminated water using novel hybrid adsorbent.

SELECTED PUBLICATIONS

- ♦ Kamble, Ashwin R., Chetan M. Patel, and Z. V. P. Murthy. "A review on the recent advances in mixed matrix membranes for gas separation processes." *Renewable and Sustainable Energy Reviews* 145 (2021): 111062. (Impact Factor: 14.98)
- ♦ Aghilesh, K., Alka Mungray, Smriti Agarwal, Jahangeer Ali, and Manoj Chandra Garg. "Performance optimisation of forward-osmosis membrane system using machine learning for the treatment of textile industry wastewater." *Journal of Cleaner Production* 289 (2021): 125690. (Impact Factor: 9.297)
- ♦ Mevada, Chirag, Parvathy S. Chandran, and Mausumi Mukhopadhyay. "Room-temperature synthesis of tin oxide nanoparticles using gallic acid monohydrate for symmetrical supercapacitor application." *Journal of Energy Storage* 28 (2020): 101197. (Impact Factor: 6.583)
- ♦ Mevada, Chirag, and Mausumi Mukhopadhyay. "Electrochemical performance enhancement of high mass loading H-RuO₂NPs electrode and aqueous symmetrical supercapacitor in the neutral electrolyte." *Journal of Energy Storage* 30 (2020): 101453. (Impact Factor: 6.583)
- ♦ Mevada, Chirag, and Mausumi Mukhopadhyay. "High mass loading tin oxide-ruthenium oxide-based nanocomposite electrode for supercapacitor application." *Journal of Energy Storage* 31 (2020): 101587. (Impact Factor: 6.583)
- ♦ Mevada, Chirag, and Mausumi Mukhopadhyay. "Electrochemical performance of aqueous asymmetric supercapacitor based on synthesized tin oxide positive and commercial titanium dioxide negative electrodes." *Journal of Energy Storage* 33 (2021): 102058. (Impact Factor: 6.583)
- ♦ Gupta, Sarthak, S. Sireesha, I. Sreedhar, Chetan M. Patel, and K. L. Anitha. "Latest trends in heavy metal removal from wastewater by biochar based sorbents." *Journal of Water Process Engineering* 38 (2020): 101561. (Impact Factor: 5.485)
- ♦ Raj Kumar, Srikanth R. Gopireddy, Arun K. Jana, Chetan M. Patel, Study of the discharge behaviour of Rosin-Rammler particle-size distributions from hopper by discrete element method: A systematic analysis of mass flow rate, segregation and velocity profiles, *Powder Technology* 360 (2020) 818-834. <https://doi.org/10.1016/j.powtec.2019.09.044> (Elsevier Scientific Publication, USA) (Impact Factor: 5.134/2020).

SELECTED PUBLICATIONS

- Upadhyay, Utkarsh, I. Sreedhar, Satyapaul A. Singh, Chetan M. Patel, and K. L. Anitha. "Recent advances in heavy metal removal by chitosan based adsorbents." *Carbohydrate Polymers* (2020): 117000. (Impact Factor: 9.381)
- Sreedhar, I., Utkarsh Upadhyay, Pranav Roy, Sarmista Madabusi Thodur, and Chetan M. Patel. "Carbon capture and utilization by graphenes-path covered and ahead." *Journal of Cleaner Production* (2020): 124712. (Impact Factor: 9.297)
- Akavaram, Soujanya, Mittal L. Desai, Tae-Jung Park, Z. V. P. Murthy, and Suresh Kumar Kailsa. "Trypsin encapsulated gold-silver bimetallic nanoclusters for recognition of quinalphos via fluorescence quenching and of Zn²⁺ and Cd²⁺ ions via fluorescence enhancement." *Journal of Molecular Liquids* 327 (2021): 114830. (Impact Factor: 6.165)
- Kamble, Ashwin R., Chetan M. Patel, and Z. V. P. Murthy. "Polyethersulfone based MMMs with 2D materials and ionic liquid for CO₂, N₂ and CH₄ separation." *Journal of environmental management* 262 (2020): 110256. (Impact Factor 6.789)
- Jain, Preeti LB, Sanjaykumar R. Patel, and Meghal A. Desai. "Enrichment of patchouli alcohol in patchouli oil by aiding sonication in hydrotropic extraction." *Industrial Crops and Products* 158 (2020): 113011. (Impact Factor 5.645)
- Patel, Asfak, Arvind Kumar Mungray, and Alka Mungray. "A novel concept of Vertical Up-Flow Forward Osmosis reactor: Design, performance and evaluation." *Chemosphere* 281 (2021): 130741. (Impact Factor: 7.086)
- Aghilesh, K., Alka Mungray, Smriti Agarwal, Jahangeer Ali, and Manoj Chandra Garg. "Performance optimisation of forward-osmosis membrane system using machine learning for the treatment of textile industry wastewater." *Journal of Cleaner Production* 289 (2021): 125690. (Impact Factor: 9.297)
- Patel, Asfak, Alka A. Mungray, and Arvind Kumar Mungray. "Technologies for the recovery of nutrients, water and energy from human urine: A review." *Chemosphere* 259 (2020): 127372. (Impact Factor: 7.086)
- Pushkar, Priyakant, and Arvind Kumar Mungray. "Exploring the use of 3 dimensional low-cost sugar-urea carbon foam electrode in the benthic microbial fuel cell." *Renewable Energy* 147 (2020): 2032-2042. (ImpactFactor: 8.001)

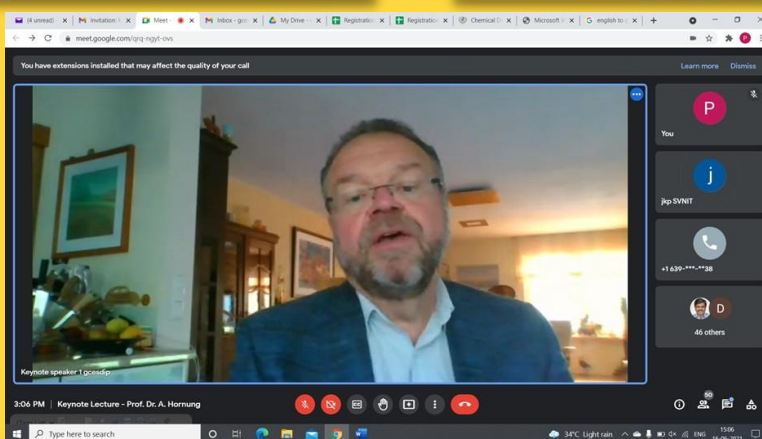
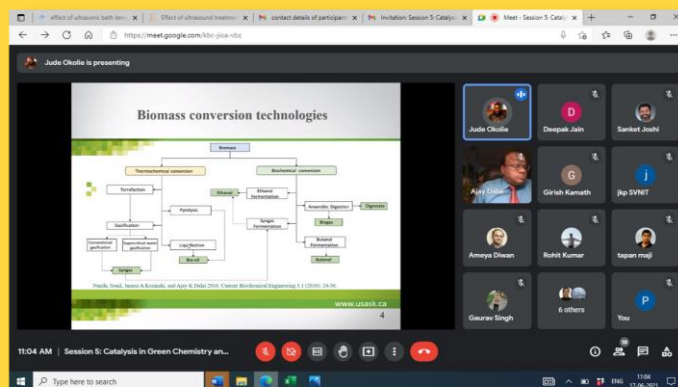
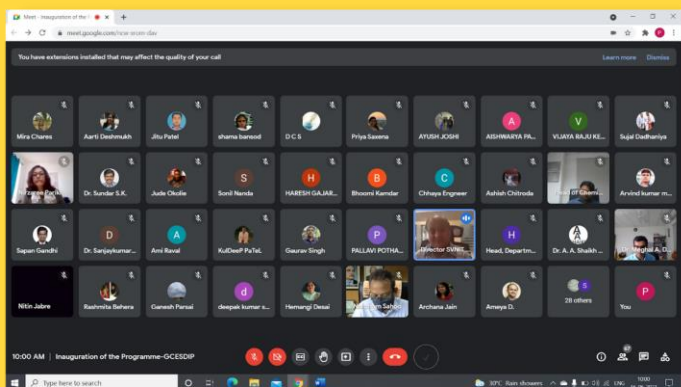
STTP/FDP/CONFERENCES ORGANISED

The department actively conducts faculty development programmes, short term training programmes and workshops for engineering faculty and industry personnel.

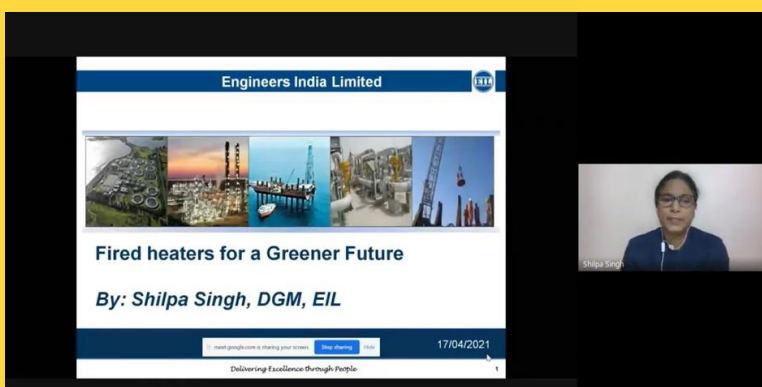
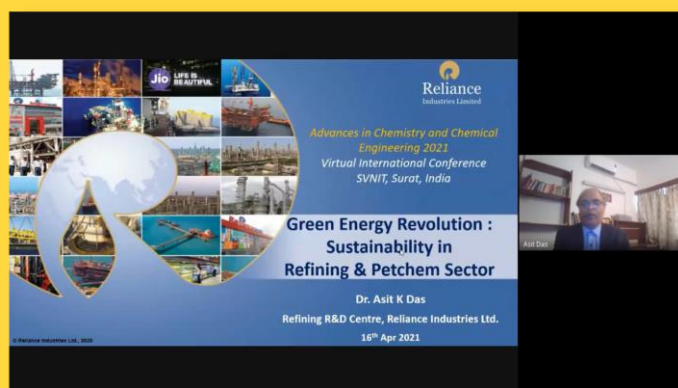
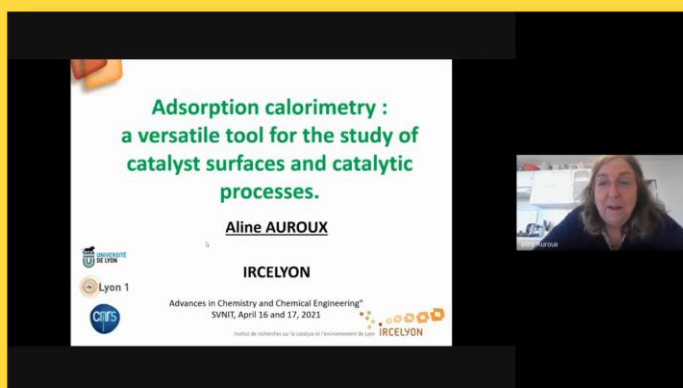
S.No.	Programme	Date	Coordinators
1.	FDP on "Frontiers in Chemical Engineering"	14-18th September, 2020	Dr. Jyoti (MMMUT, Gorakhpur) and Dr. Jogender Singh (SVNIT, Surat)
2.	Skill Development Programme on "Risk Assessment & Management in Process Industries"	21-25th September, 2020	Dr. Jyoti (MMMUT, Gorakhpur) and Dr. S.K. Sundar (SVNIT, Surat)
3.	STTP on "Occupational Safety and Health Management – Special Emphasis on Covid-19"	21-25th September, 2020	Dr. Chetan Patel, Dr. Jogender Singh and Dr. Sarita Kalla (SVNIT, Surat)
4.	International Conference on "Advances in Chemistry and Chemical Engineering (ACCE)"	16-17th April, 2021	Prof. Parimal Parikh, Prof. Mousumi Chakraborty, Dr. A.K. Jana and Dr. Vineet K. Rathore (SVNIT, Surat)
5.	International Conference on "Green Chemistry and Engineering towards Sustainable Development-An Industrial Perspective (GCESDIP)"	16-18th June, 2021	Prof. Jigisha K. Parikh, Dr. Meghal A. Desai, Dr. Sanjay R. Patel, Dr. G.C. Jadeja and Dr. S.K. Sundar (SVNIT, Surat)
6.	Workshop on "Computational Analysis on Mechanical and Chemical Processes using Ansys"	12-16th July, 2021	Dr. Pallvita Yadav (MED) and Dr. Sarita Kalla (ChED), (SVNIT, Surat)

STTP/FDP/CONFERENCES ORGANISED

International Conference on "Green Chemistry and Engineering towards Sustainable Development-An Industrial Perspective (GCESDIP)"



International Conference on "Advances in Chemistry and Chemical Engineering (ACCE)"



RESEARCH INFRASTRUCTURE

Research is an integral part of academic activity. The Department has excellent research infrastructure and provides a conducive environment for research work. Students and faculty carry out research works in the major thrust of chemical engineering. There are 9 labs which cater to the need of the undergraduate curriculum and 2 research labs. Few major facilities in the department include:

- Zetasizer Nano
- Contact angle measuring equipment
- Gas chromatograph with FID and auto injection facility
- Gas chromatograph with FID and TCD
- Optical microscope with image analyzer
- Turbiscan
- UV visible spectrophotometer
- Per vaporization set up
- UV crosslinker
- Plasma cleaner
- BOD incubator
- Electrochemical Impedance Spectroscopy
- Membrane bioreactor
- Microwave reactor
- HPLC system

EXTERNALLY SPONSORED PROJECTS (ONGOING)

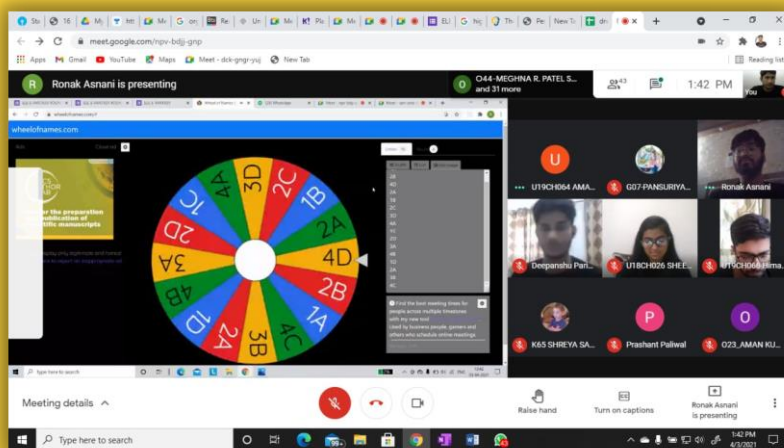
The department faculty have managed to acquire sponsored research projects from external agencies as listed below:

Name of Faculty Project Investigators	Title of project	Funding Agency	Project Duration	Amount Sanctioned
Dr. V.N. Lad in collaboration with Moscow University (Indo-Russia Joint Project)	Development of composite thin films with simultaneous diffraction and magnetic properties.	Department of Science and Technology	2020-2022	(Rs. 30 Lakhs)
Dr. Jigisha K. Parikh in collaboration with IIT Delhi	Synthesis of Artificial Sweeteners and High Value Chemicals from Bio renewable Resources using Novel Aerogel Catalysts	SERB-DST, New Delhi	2020-2023	(Rs. 80 Lakhs)
Dr. S. R. Patel (PI)	Ultrasonic microreactor for production of nano-micro particles of poorly water soluble active pharmaceutical ingredients (API)	SERB-DST, New Delhi	2019-2022	(Rs.51,41,750/-)
Dr. M. A. Desai (PI) & Dr. G. C. Jadeja (Co-PI)	Mango Waste Valorization through Biorefinery Concept: A Sustainable and Greener Approach	SERB-DST, New Delhi	2018-2021	(Rs.50,60,880/-)
Dr. A. A. Mungray (PI)	The near future air cathode Osmotic microbial fuel cell (OMFC) for wastewater treatment, electricity generation and pure water extraction	SERB-DST, New Delhi	2018-2021	(Rs.28,46,000/-)

CHEMICAL ENGINEERING SOCIETY (ChES), SVNIT

The Chemical Engineering Society was instituted on 16 th January 2014. Dr. Meghal Desai, Dr. Jogender Singh and Dr. Sarita Kalla are the current faculty advisors of the student chapter. Affiliated to the American Institute of Chemical Engineering (AIChE), ChES aims to spread knowledge and experience to future chemical engineers about chemical engineering education and its applications.

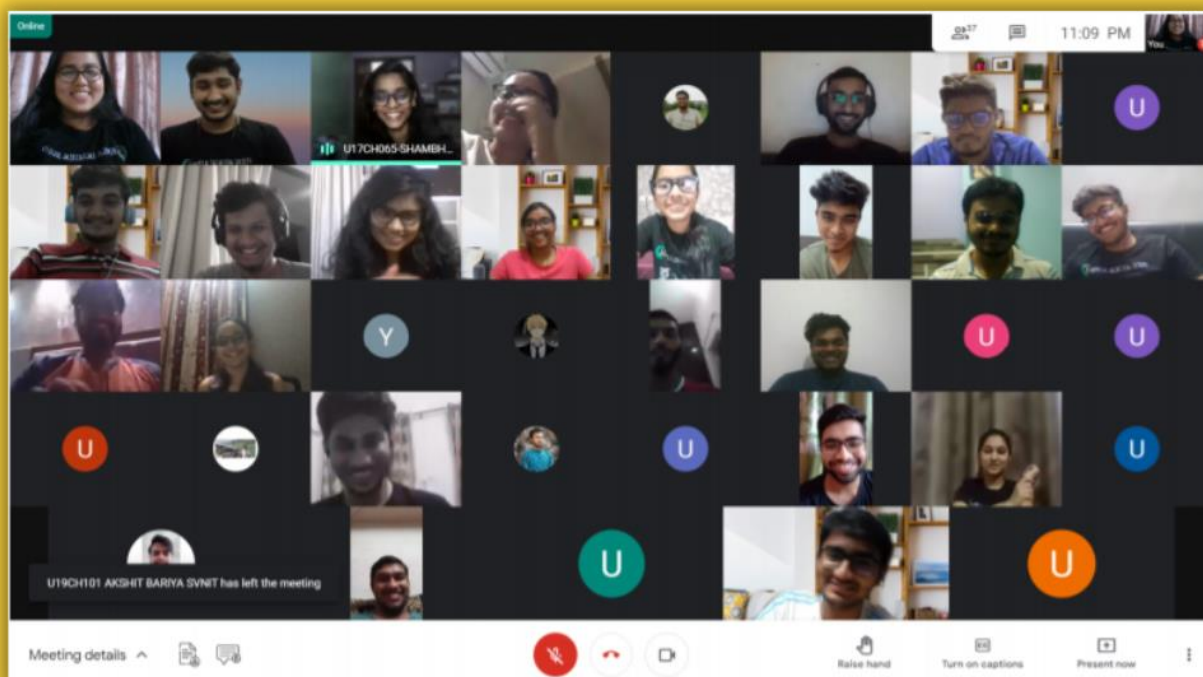
Over the past years, the chemical engineering society conducted events demonstrating innovation from fun activities and technical events. The various activities undertaken by ChES during 2020-21 are DWSIM Workshop, DWSIM Flow Sheet Design Competition, Chem-E-Car, Cordial Convo(Interactive sessions in which we invite the Alumni of ChES Student Chapter to share their experiences with the juniors), Alchemy: The Manufacturing Quest, Stock Up (webinar on Financial literacy), Siphon 6.0, Eureka 3.0, Placement & Internship Talk and webinars with other AIChE Student Chapters. This year a separate body for Public Relations was also initiated.



The two significant events of ChES are Eureka & Siphon. Eureka started with an initiative to teach and elevate a research ideology among students where sophomores are mentored by senior years. The teams work on their decided problem statements to find a new idea/solution, i.e. optimizing the same. This year, the third edition of Eureka, i.e. Eureka 3.0 (Sept 2020-April 2021), saw teams working for 18 problem statements consisting of industrial & Academic backgrounds.

Siphon is the Annual Departmental Fest conducted by ChES. This year Siphon 6.0 was completed virtually and included participation from colleges all over the Southern Asia region. A total of 13 events were conducted over three days consisting of various technical, non-technical, managerial events and quizzes to introduce the students to the multiple fields and applications of Chemical Engineering.

CHEMICAL ENGINEERING SOCIETY (ChES), SVNIT



The student chapter members also brought laurels. Sheetal Maheshwari (U18CH026), B Tech-III, Innovation Head ChES 2020-21, was among the twelve global leaders to receive the International Student Chapter Leadership Development Award 2020 during the AIChE Annual Student Conference 2020.

Yutika Naik (U19CH002) and Bharvi Patel (U19CH021), B Tech-II, got selected for the FOSSEE semester-long Summer Internship in DWSIM at IIT Bombay, which is a part of the National Mission on Education through Information and Communication Technology (ICT), Ministry of Education, Government of India.

All the events conducted by the Chemical Engineering Society focus on facilitating public understanding of technical issues and advancing the development and exchange of relevant knowledge and ideas. The committee always tries to motivate its members to participate in innovative activities, and we all work together to gain more knowledge about Chemical engineering.

ChES is a great platform to be a part of something new and develop great attributes like leadership, teamwork, time management, and many other work ethics.



STUDENTS AWARDED PHD (2020-21)

S.No.	Thesis Title	Name of Research Scholar	Supervisor(s)
1.	Application of liquid membranes for the separation of organic compounds	Himanshu Kohli	<ul style="list-style-type: none">♦ Dr.Mousumi Chakraborty♦ Dr. Smita Gupta
2.	Monodisperse to Rosin-Rammler particle size distribution. A systemic analysis of hopper discharge characteristics using discrete element method	Raj Kumar	<ul style="list-style-type: none">♦ Dr. Chetan M. Patel♦ Dr.A.K. Jana
3.	Studies on extraction of phenolic antioxidants from onion and mango peels using emerging green technologies	Chandrabhushan T. Pal	<ul style="list-style-type: none">♦ Dr. G.C. Jadeja
4.	Studies on interfacial mixing zone and controlling concentration of magnetic nanofluids using microfluids	Paritosh Agnihotri	<ul style="list-style-type: none">♦ Dr. V.N. Lad
5.	Studies on mixed matrix membranes with 2D materials for different gas mixtures separation	Kamble Ahswini Ramesh	<ul style="list-style-type: none">♦ Dr. Z.V.P. Murthy♦ Dr. Chetan M. Patel

STUDENTS' ACHIEVEMENTS (2020-21)

As a part of extra and co-curricular activities, students of SVNIT participated in various events organized at National and International levels. Students have obtained several awards for their contributions.

S.No.	Name	Admission number	Programme/ Institute
1.	Sheetal Maheshwari	U18CH026	International Student Chapter Leadership Development Travel Grant Award 2020
2.	Jay Madhani	U17CH025	AIR 9 in GATE 2021
3.	Mahendra Singh	U18CH028	3rd prize Chem-e-car competition
4.	Shyamal P. Patel	U18CH003	3rd price at Chem-e-car, 1st and 2nd price in Chem-e-car and pump it up
5.	Aayushi Gupta	U18CH083	DWSIM Flowsheeting Competition Winner
6.	Swapnil Nitin Bhavsar	U17CH070	5th Place in Scavenger Hunt, AIChE Annual Student Conference 2020
7.	Sahil Rajiv Shahi	U18CH021	Selected for Young Scientist Program, Blue Marble Space Institute of Science

STUDENTS' PLACEMENT AND HIGHER STUDIES (2020-21)

The department seeks the participation of various organizations and facilitate to recruit the talent that best suits their profile. The placement of final year students starts in the beginning of the academic year. The company visits the campus on an allotted day and makes pre-placement talk, conducts tests and interviews, and selects the candidates. The motivated and well-trained students of chemical engineering are contributing the best of their talent, sincerity and competence. The students are recruited by prominent industries like BASF, Aditya Birla, SRF Fluorochemicals, Sun Pharma, L&T Construction, Galaxy Surfactants, Cairn, TCS and Deloitte.

Name	Industry placed
Jaykumar Madhani, Anuj Desai, Jenish Jigneshkumar, Avinish Verma,	L & T Constructions
Meghal Milan Shah	BASF
Pearl Vora, Sanskar Patel, Anuj Sawal, Jugal Rajput, Kaustubh Mahajan, Sunil Mewadakalal Kanhaiyalal, Tanuka Sinha, Shantanu Yawale, Rishabh Singh, Swanand Gaikwad, Parmar Jaykumar Vinodbhai	Aarti inds.
Nalam Ramasai Dharani Harika, Jena Nisanth Tripathikumar, Ketan Chhipa, Madhur Agrawal, Dilawar Valid Gajerawala, Ajinkya Ganesh Shanbhag, Priyal Meena	Aditya Birla
Raikar Tarun Pundalik, Pragya Narayana Prasad, Sachi Patel	SRF Fluorochemicals
Vishal Soni, Patel Vivekkumar Mahendrabhai, Vishal Sharma, Divyesh Anand Dabhade	Sun Pharma

Name	Industry placed
Prateek Sharma, Aman Nogaja	Iquanti
Harsh Jain, Tarang Desai	EXL
Shikha Yadav, Dwij Pandya, Jay Chauhan, Palak Vanja, KOMAL MEENA	Cairn
Sarrah Saify	Decimal Points
Ashraya Kashyap, Neil Nair, NARAYAN PARARIYA	Deloitte
ALSTON FERNANDES	Raam Group
Jaymin D Panchal, Prushti B Thakkar	Galaxy Surfactants
Bhargavi Panchal, Aditya Sunil	Planetspark
Patel Smitkumar Rasikbhai	6W Research
Soumya Subhadarshan	Pharmaace

STUDENTS' PLACEMENT AND HIGHER STUDIES (2020-21)

Further, to strengthen the industry-institute interaction, companies are encouraged to provide internship for B. Tech. 3rd year students (maximum 8 weeks in summer vacation) and M. Tech. students (maximum 1 year) in their 2nd year as a dissertation work.

Many of our students have gone for higher studies in prestigious institutions within India and abroad as below:

S.No.	Name	Admission number	Programme/ Institute
1.	Umang Patel	U17CH080	M.Eng in Chemical Engineering at University of Calgary
2.	Jeet Gajera	U17CH042	MBA in IIM Indore
3.	Amit Jaiswal	U17CH023	PGP in IIM Calcutta
4.	Swapnil Nitin Bhavsar	U17CH070	Professional MS Chemical Engineering Program (Prof MS), Purdue University
5.	Nalam Ramasai Dharani Harika	U17CH075	Arizona State University, USA
6.	Gohil Harsh Vijaybhai	U17CH052	PGP in IIM Indore
7.	M. Faizan Sakariyawala	U17CH053	MSc Civil Engineering, Leeds Beckett University, United Kingdom.