

DEPARTMENT OF CHEMICAL ENGINEERING (DoChE)



SVNIT, Surat

A blue rectangular sign with white text, mounted on a glass facade. The text is in Hindi and English: 'रासायनिक अभियांत्रिकी विभाग' and 'DEPARTMENT OF CHEMICAL ENGINEERING'.

रासायनिक अभियांत्रिकी विभाग
DEPARTMENT OF
CHEMICAL ENGINEERING

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. 64 PhD and 193 M. Tech students are awarded/viva voce completed till date. Currently there are 16 PhD (FIR), 8 PhD (PEC), 2 PhD (FPS), 1 JRF and 21 M.Tech. candidates enrolled in department of chemical engineering. 10 ongoing sponsored projects are there and 36 sponsored projects, 4 course work development projects and 2 industrial projects have been completed. Paper published in reputed International and National Journals is approximately 836 & 415 papers are presented and/or published in national and international conference till June 2023.

DoChE Newsletter

(2022-23)

- Message from HOD
- Faculty Profile
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- Externally Sponsored Projects (ongoing)
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MESSAGE FROM HOD

Chemical Engineering is the discipline which combines the process with energy and environment in a profitable manner. And to make it happen, chemical engineering is unceasingly improving and expanding.

चरन्मार्गान्विजानाति

From the conventional view of chemical plants like petroleum refineries, petrochemicals, fertilizers and so on, to subtle applications like drug delivery, plant-in-chip, microorganism in plant, microfluidic; the discipline has evolved in a sustainable and greener manner. The progression in chemical engineering is in line with the needs of the man-kind as well as the ecosystem so that sustenance can be restored. Moreover, for the attainment of sustainable development goals, chemical engineers can contribute like never before. Department of Chemical Engineering at Sardar Vallabhbhai National Institute of Technology, established in the year 1995, reflects this in the spectrum of curriculum, teaching, lab practices, research and innovation.



The amalgamation of core subjects (for fundamentals) with electives (for deep dive into new terrain); right balance between theory and laboratory sessions and cutting edge research ensure that the graduating students are capable of entering into the domain they wish, be it higher studies or industry. This responsibility is shouldered effectively by the faculty members of the department. Whether its teaching or research, the faculties have excelled in both the fields. Accreditation by NBA for UG and PG; excellent placement records, pursuance of higher study by students are the proofs of academic excellence while publication in high impact journals (indexed in SCI/E), excellent h- and i- indices, good numbers of sponsored research projects (from sponsoring agencies like DST, SERB, GUJCOST, CSIR, etc.), patent filing are outcomes of sincere and dedicated efforts towards research. The Department also offers testing and consultancy services to the industries. The outstanding achievements are because of synergism among the work-force and cordial environment prevailing since the inception of the Department. Recently, the Department was granted a fund of Rs. 1.68 Crore to strengthen the research facilities under FIST-2021 program by DST, Gol, New Delhi.

The Department takes immense pride for the contribution made by the faculty members and students towards betterment of the society, ecosystem and ultimately achieving sustainability.

I invite you to explore the website for more details. Feel free to contact us.

Thank You.

DR. MEGHAL A. DESAI

*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 28 years of teaching/research experience. His research interests are related to separation techniques, membrane separations, nanomaterials, etc. He has published 209 SCI/SCIE journals and reviewed/reviewer to 171 journals. He has supervised 22 Ph.D. thesis, of which 3 got best thesis awards and 2 are going-on. He has also guided 43 M.Tech / M.E. dissertations of which 2 got best and one got 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, October 2021 & 2022.

(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 93 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 103 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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FACULTY PROFILE

Prof Jigisha K. Parikh



a fellow of Royal Society of Chemistry-UK has 31 years of experience in teaching and industries. Deputed as Scientist G at SERB-DST - GoI, 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 136 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 former Head of the Department. 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 3 Ph.D. students and currently supervising 2 Ph.D. students. He has published 31 Research papers in peer reviewed International journals (SCI/SCIE).



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Dr. Meghal A. Desai



is Associate Professor and head of the department and has 18 years of teaching experience. Currently, he is guiding 3 PhD students and 6 students have completed Ph.D. under his guidance. He has 44 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 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 21 research papers in reputed journals.

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Dr. Jignasa V. Gohel

is Awarded for Best Ph.D. Thesis and Research-2014 given away by IChE in Chemical Engineering/Technology for the research work on “Synthesis and applications of nanoparticles” and currently Associate Professor. She has over 21 years of teaching and Research experience. Her research areas are Clean Energy, Materials Science, Nanotechnology, Solar Energy and solarcells, Energy Storage, Thin film, Photo electrochemical applications. She has guided 3 Ph.D. students. She has published 71 International publications in peer reviewed International journals (SCI/SCIE/scoups) and reviewed/reviewer to 20 SCI/SCIE journals. She has completed 4 sponsored Research Projects (DST, SERB, TEQIP and MHRD).

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Dr. Alka A. Mungray



is currently Associate Professor. Her research area is Membrane Separation Process, Membrane development, Wastewater treatment, Forward osmosis (FO), Osmotic microbial fuel cells, Polymer nanocomposite, etc. She has 14 years of teaching experience. She has completed several sponsored projects (SERB, DST, DRDO and TEQIP) and one ongoing from ISRO regarding Potable water recovery from human urine recycling for long term Human Space Mission. She has published 65+ International research/review publications, 5 book chapters and Edited one book with Google Scholar h-index 23. She is a reviewer of more than 25 SCI listed journals. She is guiding 4 Ph.D. students and 6 Ph.D. are awarded. She has granted 2 process and 1 design patents on FO membrane preparation. She has started with her team one startup “URISOL Technologies Private Limited” which is involved in the conversion of urine into fertilizer and industrial grade water. She is the team leader of a ISRO sponsored project working on preparing a prototype hybrid system for the human urine recycling and potable water recovery for long term human space mission.

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Dr. Arvind Kumar Mungray

is currently Associate Professor. He has 16 years of teaching experience. He is having his doctoral degree from IIT Roorkee, working in the area of Wastewater treatment, Waste to energy, Microbial fuel cell, Bioelectrochemical systems, Urine to resources, Hybrid systems, Decentralization, Nanomaterials etc. He has 8 research projects to his credit from DRDO, DST, SVNIT, etc. and two ongoing projects from ISRO and SERB-DST. He has published 86+ National/International publications and 10 book chapters and edited 2 book with h-index of 25 and a Reviewer to over 40 international journals. He also has 1 design patents and 1 process patents. He also has international collaboration with Kyonggi University, Republic of Korea and Delft Institute of Water Education, Netherlands. He has also received the Young Engineer’s award from IChE. He is guiding 4 Ph.D. students and 8 Ph.D. are awarded. He along with his research group incorporated a startup as “URISOL Technologies Private Limited”.

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FACULTY PROFILE

Dr. Sanjaykumar R. Patel



is working as an Associate Professor. He has over 16 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 36 National/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.

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Dr. V. N. Lad

is Associate Professor, has more than 20 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 22 national/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.html>

Dr. Smita Gupta



is working as an Assistant Professor. She has over 15 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 National/International publications. She has guided 2 PhD and 7 M. Tech students.

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Dr. G. C. Jadeja

is working as an Assistant Professor having over 10 years of teaching and research experience. His major area of interest includes valorization of biomass waste using novel extraction techniques and catalysis. He has successfully completed two sponsored research projects (CSIR and SERB funded) in the capacity of Co-PI. He is currently guiding 4 Ph.D. students with 3 Ph.D. already 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. He has over 7 years of teaching experience after Ph.D (Other institutes & SVNIT). He is currently supervising two PhD students under FPS category. His research interests include drug delivery systems, biopolymers, colloids & interfaces, microfluidics, nanomaterials, waste to wealth, biochemical engineering, etc.

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Dr. Jogender Singh

is 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 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 Ph.D. scholar.



FACULTY ACHIEVEMENTS



- Prof. Z.V.P. Murthy is featuring in the “Career Long Citation impact” list in the world published by researcher from Stanford University of USA and Elsevier of the Netherlands.
- Prof. Jigisha K. Parikh received credentials as highest cited author (top 10 % citation) – RSC.
- Dr. Chetan M. Patel joined as Technical Co-Director (Honorary) in a new start-up company Pharma DEM, Hyderabad.
- Dr. Alka A. Mungray won gold medal in women single and silver medal in women’s double at all India Inter NIT Badminton Tournament NIT Hamirpur, 2022.
- Dr. Arvind K. Mungray won Bronze medal in Badminton tournament in all India Inter NIT Badminton Tournament held at NIT Hamirpur, 2022.
- The start-up URISOL TECHNOLOGY PVT. LTD. has been formed under the mentorship of Dr. Arvind Kumar Mungray and Dr. Alka Mungray.

SELECTED PUBLICATIONS



- Barik, S. K., Lad, V. N., Sreedhar, I., Patel, C. M. (2023). Investigation of mass discharge rate, velocity and segregation behaviour of microcrystalline cellulose powder from a Copley flow tester, *Powder Technology*, 417, 118234.
- Baruah, S., Patel, A., Mungray, A. K., Mungray, A. A. (2023) Performance evaluation of deep eutectic solvent as a draw solute and vertical up-flow forward osmosis module for desalination of seawater, *Environmental Science and Pollution Research*, 30(11), 32108 – 32116.
- Behera, R., Patel, S. R., Parikh, J. K. (2023). Hydrodynamics and Transport Mechanism of Microfluidic Mixing in Precipitation of Nanodrugs: A Review, *Crystal Research and Technology*, 2300007.
- Bhagat, M., Mungray, A. K., Mungray, A. A. (2022). Recent advances in osmotic microbial fuel cell technology: A review. *Journal of the Indian Chemical Society* 99(7), 100552.
- Borse, S., Murthy, Z. V. P., Kailasa, S. K. (2023). Fabrication of water-soluble blue emitting molybdenum nanoclusters for sensitive detection of cancer drug methotrexate. *Journal of Photochemistry & Photobiology, A: Chemistry*, Vol.435, Article 114323.
- Deulgaonkar, P. S., Lad, V. N. (2022). Exploring the interfacial adsorption capability of bovine serum albumin, *Applied Surface Science Advances*, 100276.
- Gajera, Z. R., Mungray, A. A., Rene, E. R., Mungray, A. K. (2023). Hydrothermal carbonization of cow dung with human urine as a solvent for hydrochar: An experimental and kinetic study, *Journal of Environmental Management*, 327, 116854.

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- Ganorkar, P. V., Jadeja, G. C., Desai, M. A. (2022). Microwave-assisted extraction of shikimic acid from different morphological parts of water hyacinth (*Eichhornia crassipes*), Chemical Engineering and Processing - Process Intensification, 1094455.
- Jain, S., Mungray, A. K. (2022). Reduction in particle size of vermiculite and production of the low-cost earthen membrane to achieve enhancement in the microbial fuel cell performance, Journal of Environmental Chemical Engineering, 10(6).
- Javed, A., Singh, J. (2023). Process intensification for sustainable extraction of metals from e-waste: challenges and opportunities, Environmental Science and Pollution Research, 1-34.
- Kachhadiya, D. D., Murthy, Z. V. P. (2023). Separation of n-butanol from aqueous mixtures using TiO₂ and h-BN functionalized MIL-101(Cr) incorporated PVDF mixed matrix membranes. Separation and Purification Technology, Vol.306, Article 122613
- Khare, S., Gohel, J. V. (2022). Performance enhancement of cost-effective mixed cationic perovskite solar cell with MgCl₂ and n-BAI as surface passivating agents. Optical Materials, 132, 112845.
- Krishna, S., Sreedhar, I., Patel, C. M. (2023). Optimized Nanomilling of Biomaterials by Wet-Stirred Media Milling for Efficient Preparation of Nanoparticles, Waste and Biomass Valorization, 14, 655-661.
- Mene, N. R., Kalla, S., Murthy, Z. V. P. (2022). Recovery of pure water, salicylic acid crystals, and paracetamol using PVDF-MWCNT membranes by membrane distillation-crystallization. Journal of Polymer Materials: An International Journal, Vol.39 (No.3-4), 307-323. (Prints Publications, India)

SELECTED PUBLICATIONS



- Prajapati, R., Srivastava, S., Jadeja, G. C., Parikh, J. K. (2023). A Novel SBA-15/H-ZSM-5 Composite Catalyst for Conversion of Furfuryl Alcohol to Ethyl Levulinate, Waste and Biomass Valorization, 609-618.
- Raval, A. J., Parikh, J. K., Desai, M. A. (2023). Perivascular patch using biodegradable polymers: Investigation of mechanical and drug elution characteristics, Journal of the mechanical behaviour of biomedical materials, 105853.
- Sawant, S. R., Kalla, S., Murthy, Z. V. P. (2023). Enhanced properties of the PVDF membrane with carboxylated MWCNT and sodium alginate for membrane distillation, Journal of Environmental Chemical Engineering, 11(2), 109259.
- Sharma, D., Murthy, Z. V. P., Patel, S. R. (2023). Microfluidic antisolvent crystallization of lactose: Effect of process parameters, Waste and Biomass Valorization, 645-653.
- Sundar, S. K., Parikh, J. K. (2023). Advances and trends in encapsulation of essential oils, International Journal of Pharmaceutics, 122668.
- Shirasangi, R., Kohli, H. P., Chakraborty, M. (2023). Stability of emulsion liquid membrane using blended nonionic surfactant and multi-walled carbon nanotubes (MWCNTs) for methylparaben removal, Journal of Dispersion Science and Technology, 1-7.
- Thakare, V. B., Jadeja, G. C., Desai, M. A. (2023). Extraction of mangiferin and pectin from mango peels using process intensified tactic: A step towards waste valorization, Chemical Engineering Research and Design, 192, 280-288.

SELECTED PUBLICATIONS



- **Umrigar, V. R., Chakraborty, M., Parikh, P. A. (2023). Optimization of microwave-assisted esterification of succinic acid using Box-Behnken design approach, Environmental Science and Pollution Research, 1-10.**
- **Umrigar, V. R., Chakraborty, M., Parikh, P. A., Kohli, H. P. (2022). Optimization of process parameters for oleic acid esterification using microwave reactor: Catalytic activity, product distribution and reactor energy model, Energy Nexus, 100127.**
- **Vegad, G. D., Jana, A. K. (2023). Experimental and Computational Fluid Dynamics-Based Simulation of Oil-in-Water Emulsion Flow through a Pipeline, Chemical Engineering & Technology, 1476-1484.**

PATENT DETAILS



Sr. No.	Title (Registration of Design)	Application No.	Patent Status	Inventors
1	Distillation Set-Up for Essential Oil Extraction	363213-001	Granted	Dr. Meghal A. Desai Dr. Jigisha K. Parikh Dr. G. C. Jadeja Dr. Sanjay Patel
2	Annular Array Shell for Distillation of Essential Oil	363355-001	Granted	Dr. Meghal A. Desai Dr. Jigisha K. Parikh Dr. G. C. Jadeja Dr. Sanjay Patel
3	Water pH Control System	363900-001	Granted	Dr. Z. V. P. Murthy Mr. Amol Sonawane
4	Reverse Osmosis Membrane Module Regeneration System	363896-001	Granted	Dr. Z. V. P. Murthy Mr. Amol Sonawane
5	Hollow Fiber Membrane Module Regeneration System	363895-001	Granted	Dr. Z. V. P. Murthy Mr. Amol Sonawane

Sr. No.	Title (Process Patent)	Application No.	Patent Status	Inventors
1	Method of Photocatalytic Degradation of Drimaren Orange P2R Dye using MOS ₂ /Ag ₃ PO ₄ /PVDF Photocatalyst	202121052076	Granted Patent No. 429315	Dr. Z. V. P. Murthy Dr. C. M. Patel Mr. Amol Sonawane
2	Method of Photocatalytic Degradation of Drimaren Orange P2R Dye using hBN/Ag ₃ PO ₄ /PVDF Photocatalytic Mixed Matrix Membrane	202121051855	Granted Patent No. 425664	Dr. Z. V. P. Murthy Dr. C. M. Patel Mr. Amol Sonawane

PATENT DETAILS



Sr. No.	Title (Process Patent)	Application No.	Patent Status	Inventors
3	Method of Photocatalytic Degradation of Drimaren Orange P2R Dye using ZIF-Ag ₃ PO ₄ /PVDF Photocatalytic Mixed Matrix Membrane	202121045074	Granted Patent No. 415007	Dr. Z. V. P. Murthy Dr. C. M. Patel Mr. Amol Sonawane Mr. Dipesh Kachhadiya
4	Method for Synthesis and fabrication of MWCNT@ZIF-8-67/PVDF Nanocomposite Mixed Matrix Membrane for Pervaporative Saltwater Desalination	202121054127	Granted Patent No. 413558	Dr. Z. V. P. Murthy Dr. C. M. Patel Mr. Amol Sonawane Mr. Dipesh Kachhadiya
5	Method of Preparation of Curcumin Nanoparticle	202121060112	Granted Patent No. 412886	Dr. C. M. Patel Dr. Z. V. P. Murthy Mr. Amol Sonawane Ms. Kanika Meena
6	Process for Vitamin Supplements Size Reduction using Hydrotopic Antisolvent Crystallization	202221011123	Granted Patent No. 407111	Dr. M. A. Desai, Mr. Akash Patel
7	A Hybrid Vertical Up-flow Forward Osmosis-Membrane Distillation System for the Recovery of Pure Water from wastewater	202221021065	Granted Patent No. 443081	Dr. Alka A. Mungray Dr. Arvind Mungray Mr. Asfak Patel

STTP/FDP/CONFERENCES ORGANIZED



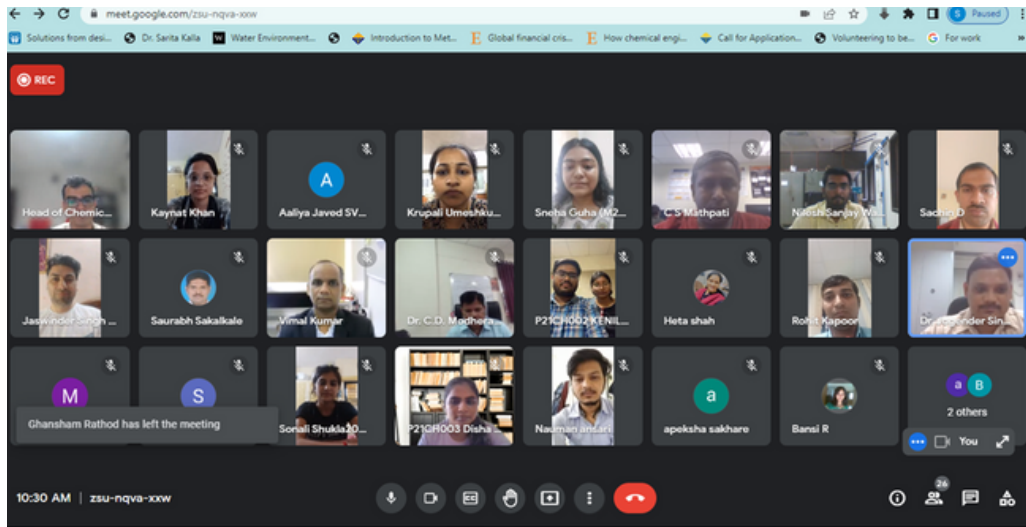
The department actively conducts faculty development programmes, short term training programmes and workshops for engineering faculty and industry personnel.

Sr. No.	Name of Programmes	Coordinators	Sponsoring Agency	Duration
1	MATLAB and Its Applications in Engineering and Research (MATER-2022)	Dr. Jogender Singh Dr. Sarita Kalla	Self-financed	26/09/2022 to 30/09/2022
2	Sustainable Technologies and Application of Computational Softwares (STACS-2022)	Dr. A. K. Mungray Dr. V. N. Lad Dr. A. A. Mungray Dr. Jogender Singh Dr. M. Chakraborty	Self-financed	12/10/2022 to 16/10/2022
3	Hands-on Training on High-end Scientific Equipments (HTHSE 2022)	Dr. Ritambhara Jangir Dr. Sarita Kalla Dr. Arup Kumar Ghosh	Self-financed	28/11/2022 to 02/12/2022
4	Capacity Building Program for Liquid Terminal (CBPLT Batch-1)	Dr. Meghal Desai Dr. Sanjay Patel Dr. Vimal Patel (DoME)	Adani Hazira Port Ltd., Surat	02/12/2022 to 31/03/2023
5	राजभाषा में शोध पत्र लेखन	Dr. Sarita Kalla Dr. Deepak Joshi Dr. Shailesh Kumar Srivastava Dr. Ketan C Kuperkar Dr. Abhilash Mandloi	Self-financed	02/03/2023 to 03/03/2023
6	International Conference on “Recent Trends in Engineering and Sciences - अभियांत्रिकी और विज्ञान में नव प्रवृत्तियों” (RTES – 2023)” in Hindi Language	Dr. Sarita Kalla Dr. Deepak Joshi Dr. Shailesh Kumar Srivastava Dr. Ketan C Kuperkar	Self-financed	02/05/2023 to 03/05/2023

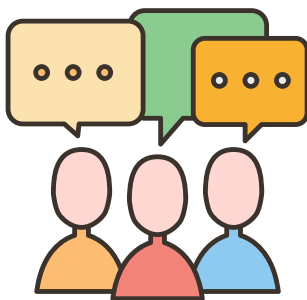
STTP/FDP/CONFERENCES ORGANIZED



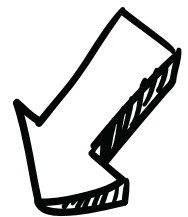
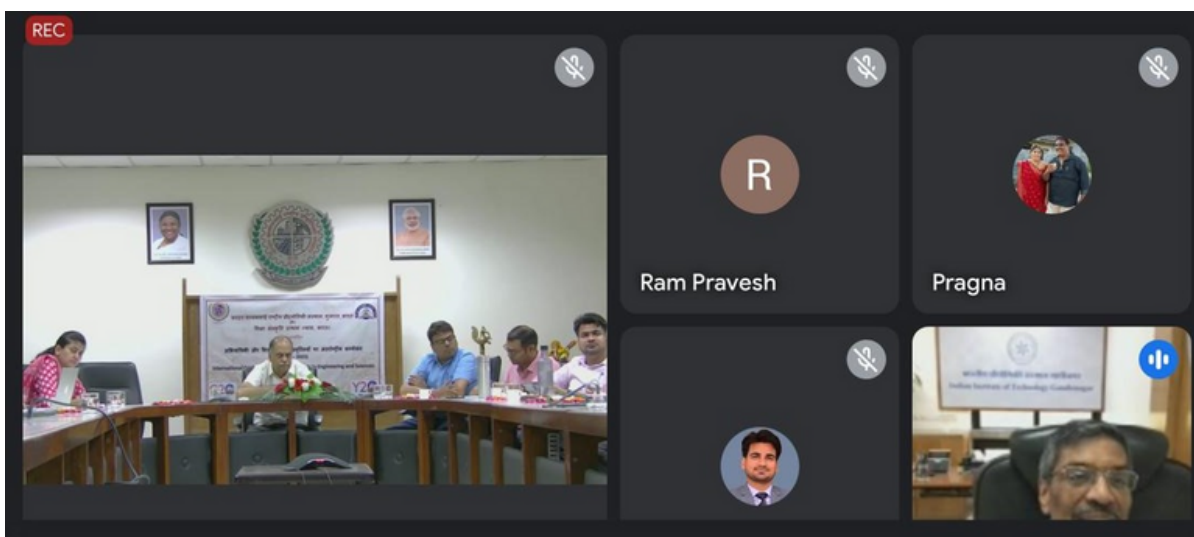
"MATLAB and Its Applications in Engineering and Research" (MATER-2022)



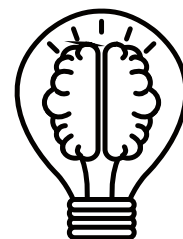
Hands-on Training on High-end Scientific Equipment (HTHSE 2022)



International Conference on "Recent Trends in Engineering and Sciences - अभियांत्रिकी और विज्ञान में नव प्रवृत्तियों" (RTES - 2023)" in Hindi Language



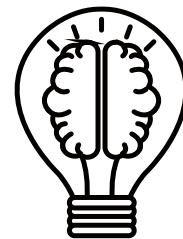
EXTERNALLY SPONSORED PROJECTS (ONGOING)



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

Sr. No.	Name of faculty project investigators	Title of project	Funding agency	Duration	Status
1	Dr. S. K. Sundar Dr. J. K. Parikh	Synthesis and rheological characterization of liposome stabilized emulsion-hydrogel matrix for controlled release of essential oil	Gujarat Council on Science and Technology (GUJCOST).	3 years (2022 onwards)	Ongoing (Rs.43,95,200/-)
2	Dr. Alka A. Mungray Dr. Arvind Kumar Mungray Dr. S. Sonawane	A compact novel hybrid system for the human urine recycling and potable water recovery for long term human space mission.	Indian Space Research Organization (ISRO), Government of India	2 years (2022 onwards)	Ongoing (Rs.17,50,000/-)
3	Dr. J. K. Parikh Dr. S. K. Sundar	Development of drug delivery systems based on phase change materials	Science & Engineering Research Board (SERB), Department of Science & Technology (DST), New Delhi	3 years (2022 onwards)	Ongoing (Rs. 43,67,264/-)
4	Dr. A. K. Mungray	Production of crude oil and phosphate fertilizer from the faecal sludge: a complete solution for the zero liquid discharge	Science & Engineering Research Board (SERB), Department of Science & Technology (DST), New Delhi	3 years (2022 onwards)	Ongoing (Rs.36,13,764/-)
5	Dr. P. A. Parikh	Catalytic decomposition of waste biopolymers to value added compounds	Gujarat State Biotechnology Mission	1 year (2022 onwards)	Ongoing (Rs. 8,27,160/-)
6	Dr. J. K. Parikh Dr. M. A. Desai Dr. S. R. Patel Dr. G. C. Jadeja Dr. C. M. Patel	Sustainable research infrastructure development under FIST programme	Department of Science & Technology (DST), New Delhi	5 years (2022 onwards)	Ongoing (Rs. 1,68,00,000/-)

EXTERNALLY SPONSORED PROJECTS (ONGOING)



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

Sr. No.	Name of faculty project investigators	Title of project	Funding agency	Duration	Status
7	Dr. Milap G. Nayak Dr. V. N. Lad	Selective air oxidadtion of 2-chloro toluene to 2-chlorobenzaldehyde using MN-Cu bimetalic supported on ZrO: and CeO2	Department of Technical Education, Gandhinagar	3 Years (2022 onwards)	Ongoing (Rs.2,00,000/-)
8	Dr. V. N. Lad	Development of composite thin films with simultaneous diffraction and magnetic properties	Department of Science & Technology (DST), New Delhi	2 years (2020 onwards)	Ongoing (Rs. 25,30,884/-)
9	Dr. J. K. Parikh	Synthesis of artificial sweeteners and high value chemicals from bio renewable resource using nobel metal aerogel catalyst	Science & Engineering Research Board (SERB), Department of Science & Technology (DST), New Delhi	3 years (2019 onwards)	Ongoing (Rs. 21,45,264/-)
10	Dr. S. R. Patel	Ultrasonic microreactor for production of nano-micro particles of poorly water soluble active pharmaceutical ingredients (API)	Science & Engineering Research Board (SERB), Department of Science & Technology (DST), New Delhi	3 years (2019 onwards)	Ongoing (Rs.51,41,750/-)

CHEMICAL ENGINEERING SOCIETY(CHES), SVNIT

The Chemical Engineering Society was instituted on 16th January 2014. Dr. Alka A. Mungray, Dr. Jogender Singh and Dr. S.K. Sundar 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 entertaining, intellectual and educational activities undertaken by ChES during 2022-23 are Alchemy: The Manufacturing Quest, DWSIM Workshop, Industrial Visit, Siphon 8.0 and Eureka 5.0.

OUTSTANDING STUDENT CHAPTER AWARD 2021

AIChE ChES SVNIT had received the Outstanding Student Chapter Award 2021-22. This prestigious award is given annually to the top student chapters worldwide that demonstrate an exceptional level of participation, enthusiasm, program quality, professionalism, and engagement within the university and community on a global scale.



Chem-E-Car

Team ChES Chem-E-Car won 2nd prize in Azeorover, Azeotropy. They also won 1st prize in Chem-E-Car competition in Mindbend 2023.



Sajal Saxena received the Donald F. Othmer Sophomore Academic Award.



CHEMICAL ENGINEERING SOCIETY(CHES), SVNIT

EUREKA 5.0

Eureka is a research-based event that aims to guide participants through the vast realms of Chemical Engineering and unlock the hidden truths within their imagination. Eureka 5.0 consists of several stages, including issue statement creation, team discussions, portal updates, video presentations, PPT presentations, and poster presentations. The Eureka 5.0 Orientation was held on 20th September 2022, at 5:00 pm in the Seminar Hall at DoChE.

Student Regional Conference (SRC 2022)

We proudly secured the second position in two events at SRC 2022, namely the Student Poster Competition and Tectonic. Additionally, we qualified for the semifinals of Chem-E-Jeopardy, one of the most fiercely competitive events of SRC 2022.



DWSIM WORKSHOP

The AIChE ChES conducted the DWSIM Workshop on September 10th and 11th, 2022, at the Seminar Hall with the objective of introducing students to this software and enhancing their intellectual skills. The workshop spanned two full days.

INDUSTRIAL VISIT

An industrial trip to Krishak Bharati Cooperative Limited was organized on 17th October 2022. Dr. S. K. Sundar accompanied a team of about 30 ChES members on this trip.

This gave a major exposure to real working environments and bridge the widening gap between theoretical knowledge and practical exposure.



CHEMICAL ENGINEERING SOCIETY(CHES), SVNIT

ALCHEMY

Alchemy was conducted on 2nd and 3rd February, 2023 6:00pm onwards. There were two rounds, round one was the Brainy Bugstong (Riddling your way to) and the second two was Riddle Run Riot (The Treasure Hunt). Students engaged in discussions, sharing strategies, and helping each other overcome challenging puzzles.



TEDxSVNIT



TEDx SVNIT aimed to provide a platform for speakers from diverse backgrounds to share their innovative ideas, experiences, and perspectives with the audience was held on 19th March, 2023 at 6 p.m. The theme of the event, "अर्थमण्डल," where "अर्थ" is the sense of meaning and purpose of the deeds discharged and "मण्डल" is a sanskrit expression of encompassment by the sphere of life.

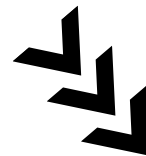
SIPHON 8.0

Siphon is the AIChE Chemical Engineering Society's annual departmental festival at SVNIT. Events like Debate Death Match, Bhidu Bids, Venom Hunt, Goblet of Fire, Boardwalkers, Bloodprint were held in the period of 17th to 19th February 2023. Along with this event we also had full day events like Chem-E-Fire and Starch walk. Great Enthusiasm and participation was shown by the participating students.





GREENOLUTION



- A new student society named “Greenolution” with Dr. Sarita Kalla as Chairperson is constituted to maintain a sustainable and green environment in the department and to develop a simple way of proper utilization of the surrounding waste items. The Greenolution team focuses on the application of green chemistry in daily life, maintaining it, and creating awareness of it among the students and society.



- Greenolution conducted a books distribution drive on 18th February, 2023. 215+ books were prepared by removing filled pages and some by adding additional pages to form the notebook.
- Greenolution also prepared the MSDS for all the laboratories of the chemical engineering department and distributed to the respective lab in-charges.

STUDENTS DEFENDED PHD (2022-23)



Sr. No.	Thesis title	Name of research scholar	Supervisor(s)
1	Waste Valorization of Water Hyacinth for Recovery of Valuable Compounds: A Sustainable Approach	Priti Vinodpant Ganorkar	Dr. Meghal A. Desai Dr. G. C. Jadeja
2	Design Aspects for Resource Recovery from Source Separated Human Urine: A Sustainable Solution	Asfak Yunusmohmed Patel	Dr. Alka A. Mungray Dr. Arvind K. Mungray
3	Different Techniques to Improve the Osmotic Microbial Fuel Cell Performance	Bhagat Mandar Suresh	Dr. Alka A. Mungray Dr. Arvind K. Mungray
4	Low-cost Ceramic Membrane: Modification Application in Microbial Fuel Cell	Jain Suransh	Dr. Arvind K. Mungray
5	Studies on Membrane Bioreactor Systems for Different Wastewater Treatment	Amol Vijay Sonawane	Dr. Z. V. P. Murthy
6	Enhanced Extraction of Patchouli Oil from Pogostemon Cablin and Enrichment of Patchouli Alcohol Thereof	Preeti Jain	Dr. Meghal A. Desai Dr. S. R. Patel
7	Extraction of Essential Oil from Cinnamon bark using process intensified approach	Modi Piyush Indravadan	Dr. Meghal A. Desai Dr. Jigisha K. Parikh
8	Synthesis, Characterization and Modification of Silica Nanoparticles Aerogels and Hydrogels	Doke Suhas Dashrath	Dr. V. N. Lad Dr. Chetan M. Patel
9	Studies on the Effects of Interfacial Interactions of Liquid Containing Selected Macromolecules	Dhopte Balaji Sopanrao	Dr. V. N. Lad

STUDENTS ACHIEVEMENTS (UG)



- Following students have been awarded 2nd in the AZeorover Organized by AZeotropy 2023, Chemical Engineering Association, IIT Bombay.

1. Rupesh Yadav (U21CH091)
2. Kushal Doshi (U21CH066)
3. Rajesh Ranjan Dash (U21CH036)
4. Abhishek Charan (U21CH034)
5. Keshav Sohani (U21CH031)

- Chemical Engineering Society represented SVNIT in Student Poster Competition and Tech-tonic hosted by AIChE VIT Vellore on 9 to 11 September, 2022 and secured 2nd position in the competition.

Event: Student Poster Competition

1. Kenny Kachhadiya (U20CH028)
2. Jeel Solanki (U20CH009)
3. Prachi Hudia (U20CH005)

Event: Tech-tonic

1. Dhyey Patel (U20CH055)
2. Dhyey Bhagat (U20CH035)
3. Jeel Solanki (U20CH009)
4. Prachi Hudia (U20CH005)

- Boys Team of Department of Chemical Engineering secured 1st position in Inter Departmental Badminton Tournament at SVNIT held from 16-18 September 2022.

Event: Badminton Tournament

1. Himanshu Gaikwad (U19CH066)
2. Amandeep Singh (U19CH064)
3. Ujjwal Sharma (U19CH028)
4. Keshav Sohani (U21CH031)

STUDENTS ACHIEVEMENTS (UG)



- Following students (Members of ChES) have been selected in AIChE Executive Student Committee for the academic session 2022-23.
 1. Jatin Agrawal (U20CH058)- Regional Liaison for Southern Asia Region
 2. Kenny Kachhadiya (U20CH028): Conference Experience Subcommittee Chair
 3. Sayantani Dutta (U20CH070): Publications Sub Committee Member (Social Media)
 4. Bollineni Neha (U20CH084): Publications Sub Committee Member (Graphics)
- Ms. Pragya Narayana Prasad (B.Tech. Student) won “IChE Award for the Year 2022: The Chemical Weekly Prize for Best Research Paper Published in a High Impact Factor International Journal by an Undergraduate Chemical Engineering Student – Second Prize” during CHEMCON 2022, jointly organized by HBTU, Kanpur and IChE-Kanpur Regional Centre during December 27-30, 2022.

STUDENTS ACHIEVEMENTS (PG & Ph.D.)



- Mr. AppanuSushvanth Reddy (M.Tech) won “IChE Awards for the Year 2022: Ambuja’s Young Researcher’s Awards for doing Post-Graduate Studies in India after GATE Examination” during CHEMCON 2022, jointly organized by HBTU, Kanpur and IChE-Kanpur Regional Centre during December 27-30, 2022.
- Mr. Suransh Jain (D17CH003) and Ms. Monali Chhatbar (D18CH006) have received best Oral presentation awards and cash price of Rs. 4000/- through Royal Society of Chemistry in an International Conference held on 8 to 10 September 2022 at Department of Chemical Engineering, IIT Roorkee.

STUDENTS' ACHIEVEMENTS (2022-23)



- Dharmesh Mahajan, B.Tech (2001) became the Chief Technology Officer of Essar Oil & Gas.

Sr. No.	Name	Admission number	Program
1	Vijay Pratap Singh	U19CH005	AIR 70 in GATE
2	Gundala Lakshmi Narsimha	U19CH104	AIR 97 in GATE
3	Jayant Parmar	U19CH088	AIR 108 in GATE
4	Kapil Patel	U19CH052	AIR 182 in GATE
5	Prince Patel	U19CH080	AIR 276 in GATE
6	Shubham Vaishnav	U19CH098	AIR 423 in GATE
7	Ujjwal Sharma	U19CH028	AIR 660 in GATE
8	Manishkumar Panchal	U19CH071	AIR 844 in GATE
9	Chandaka Nitish	U19CH020	AIR 1230 in GATE

STUDENTS' PLACEMENT (2022-23)



The department seeks the participation of various organizations and facilitate to recruit the talent that best suits their profile. 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 Reliance Industries, Nayara Energies, Vedanta-Balco, UPL, Glenmark Lifesciences, Essar Oil UK, etc.

Name	Industry Placed
Kapil Patel Pranjal Maheshwari Shivashree Asthana	Cairn Oil & Gas
Chandaka Nitish Naik Yutika Niralkumar Priyam Jain Bhumika Sharma	BPCL
Patel Jeet kirankumar Himil Gohel Desai Kevinkumar Pothuraju Srigowtham Anirudh Rajpurohit Himanshu Gaikwad Chirag Agrawal Kavathiya Vivekkumar Gundala Lakshmi Vaidehi Devmurari Brijesh Saini Ketan Bhargava Mahek Sarvani	Vedanta-Balco
Ashutosh Devasi Jayant Parmar Panchal Manishkumar Reddy Santosh Sagar Shreya Patel Rawal Abhaykumar	HRRL

Name	Industry Placed
Vrund Shah Pranav Dherange	Decimal Points
Nisarg Shah Kevin Bhavsar	ProcDNA
Shivam Singh Thakur Ravi Khagad	Tredence
Om Hajariwala	Sun Pharma
Aayush Singh	Zydus Lifesciences
Aditya Sridhar Meetkumar Patel	Glenmark Lifesciences
Akshay Goyal Saurabh Vats	EXL Analytics
Aman Mahich	Essar Oil UK
Ujjwal Sharma Angad Deshmukh Fenil Parmar	UPL

STUDENTS' PLACEMENT (2022-23)



Name	Industry Placed
Amandeep Singh Anshi Jain Archit Soni Khusagra Gupta Raghav Khandelwal Srushti Jibhkate Jayesh Pandey Yash Thakkar	Deloitte
Nidhip Palsetkar Verma Aprajita Swatantrakumar	Aarthi Industries
Vaibhav Karthikeyan	Gharda Chemicals
Banoth Jegjeevan Dharavath Nirmal	JK paper
Kartik Samyal	Nayara Energies

Name	Industry Placed
Saliha mansoori Tejas Sanjayrao Betwar Vaibhav Gupta	Quantiphi
Arnav Gupta Ayush Biyani Bariya Akshikumar Dev Pandya Durvish Kumar Gautam Harshita Singh Nishant Kumar Parthik Sojitra Patel Bharvi Parulkumar Patel Prince Hiteshkumar Patel Zeel Pushpendra Singh Rajoriya Rahil Pachauri Ronit Patel Shubham Regar Vivek Chauhan Rana Jay Shirishkumar Prasham Sheth Shubham Vaishnav	Reliance Industries

STUDENTS' HIGHER STUDIES (2022-23)



Name	Degree/ Exam
Kenil Dobariya P21CH002	MS Business and Management, University of Maryland, College Park.
Nisarg Shah U19CH045	Masters in Business Administration -Human Resources, Symbiosis Institute of Business Management (SIBM), Pune.
Prachi Chashmawala U19CH016	Master of Engineering - Chemical Engineering, University of Ottawa, Canada.
Himil Gohel U19CH004	Master of Business Administration Indian Institute of Management (IIM), Indore
Pranjal Maheshwari U19CH078	Post Graduate Diploma in Management (Business Management), S.P. Jain Institute of Management & Research, Mumbai.