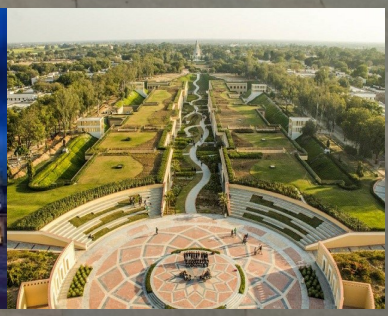
BITS Pilani
Pilani Campus

innovate achieve lead

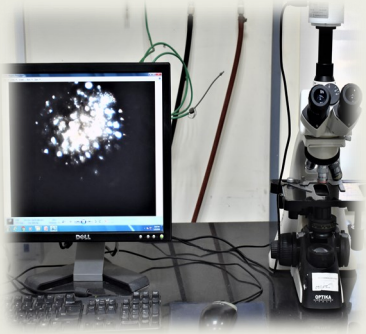
DEPARTMENT OF CHEMICAL ENGINEERING



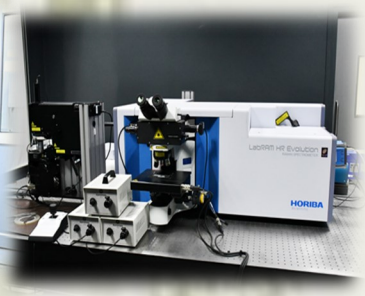
Department at a Glance

The Department of Chemical Engineering at BITS-Pilani, Pilani Campus is one of the premier departments in the country that provides a unique educational and research environment. The broad vision of the Department of Chemical Engineering is to excel in teaching/learning, innovative research and industry engagement and to disseminate the same in order to become a world leader in chemical engineering and allied interdisciplinary areas. The primary mission of Department of Chemical Engineering is to enable the students to imbibe technical and analytical skills through the culture of logical and critical thinking. The other goal is to establish modern infrastructure and conducive research environment for carrying out academic and sponsored research.



Optical microscope

FESEM



SE Raman Spectroscopy

AAS

Vision of the department

To excel in teaching/learning, innovative research and industry engagement and to disseminate the same in order to become a world leader in chemical engineering and allied interdisciplinary areas.

Mission of the department

- To impart quality education and training in chemical engineering and associated fields to enable the students to imbibe technical and analytical skills through the culture of logical and critical thinking.
- To inculcate sense of social and environmental responsibility among students which inspires them to apply chemical engineering principles in solving industrial problems through sustainable and eco-friendly technologies for the betterment of industry and nation.
- To establish modern infrastructure and conducive research environment for carrying out academic and sponsored research.
- To foster spirit of excellence and professional leadership in students and faculty members through exposure to leading academic institutions, research organizations and external experts.
- To generate suitable opportunities for sustained interaction and collaboration with academia and industry.

Head of the department message

Dr. Banasri Roy

Established in 1964, the Chemical Engineering Department of BITS Pilani, Pilani campus surpassed more than 56 years. We are in a mature state where main areas of academics; teaching, research, and industrial engagement, are explored and developed. The expertise of the young dynamic faculty members, hand-picked from the renowned and prime institutes, span the whole spectrum of the multidisciplinary nature of the Chemical Engineering and aligned subjects. Here students, are exposed to a high standard teaching quality, state of the art research endeavor, and world class industrial applications.

Our aim is to inculcate the social and environmental responsibility and wellbeing in the young minds while we train the students to be future leaders in industries and academics. Chemical Engineering Department has been ranked in the top 351-400 by QS World University Subject Rankings 2020 and in top 14 in India. We are thriving to excel more day to day. We invite and encourage the enthusiastic hard working students, with strong technical background, proper analytical skills, and logical and critical thinking, to be part of our legacy and pursue doctoral degree; either via full-time program or part-time program. For the full-time students we provide modern infrastructure, conducive research environment, and suitable guidance. Part-time program involves working professionals passionate to learn, grow, and interested in enhancing career opportunities. Together we can build the future.

Academic Programmes

B.E. Chemical Engineering

Admission is purely merit basis, according to the score obtained in BITS Admission Test (BITSAT). Students, who are appearing for 12th or have passed 12th Examination the very previous year only are eligible to appear in the BITSAT. Additionally, students must fulfill the requirement of minimum 75% PCM marks in 12th examination. There are approximately 90 Experimental Setups, Covering Process Control, Heat Transfer, Mass Transfer, Fluid Mechanics, Reaction Engineering, Mechanical Operations, Engineering Chemistry, etc., as a part of the departmental under graduate teaching curriculum.

For more details: http://www.bitsadmission.com/

M.E. Chemical Engineering

There are two routes of admission; one in through GATE and other is through HD test. This higher degree program of department is research centric and prepares the students for a productive research/professional career. This degree provides salient features such as intensive research training under one-year dissertation option, rigorous industrial exposure under six-month practice school option, hands on experience in the state of the art analytical instrumentation and software facilities, unique research methodology training by the faculty members, and thorough teaching training under experienced faculty members. There is a Provision for vertical transfer from ME to PhD Program.

For more details: http://www.bitsadmission.

Doctor of Philosophy (Ph.D.)

The conventional, research-based doctoral degree programme provides a thorough grounding in the fundamental principles of Chemical Engineering, interdisciplines, and related areas, as well as an intensive research experience. There are two types of Ph.D. options as follows:

Full-time program: For the individuals who would like to pursue Ph.D. in-house, residing on campus. These students are eligible to be considered for a monthly Institute fellowship of Rs. 28,000 or Rs. 31,000 (based on qualification) at the time of admission. The selected candidates will be required to participate in teaching and other developmental activities of the institute.

Part-time program: For working professionals to provide basic facilities and environment for research. Applications for Ph.D. programme are invited twice in a year and candidates are selected based on the merit.

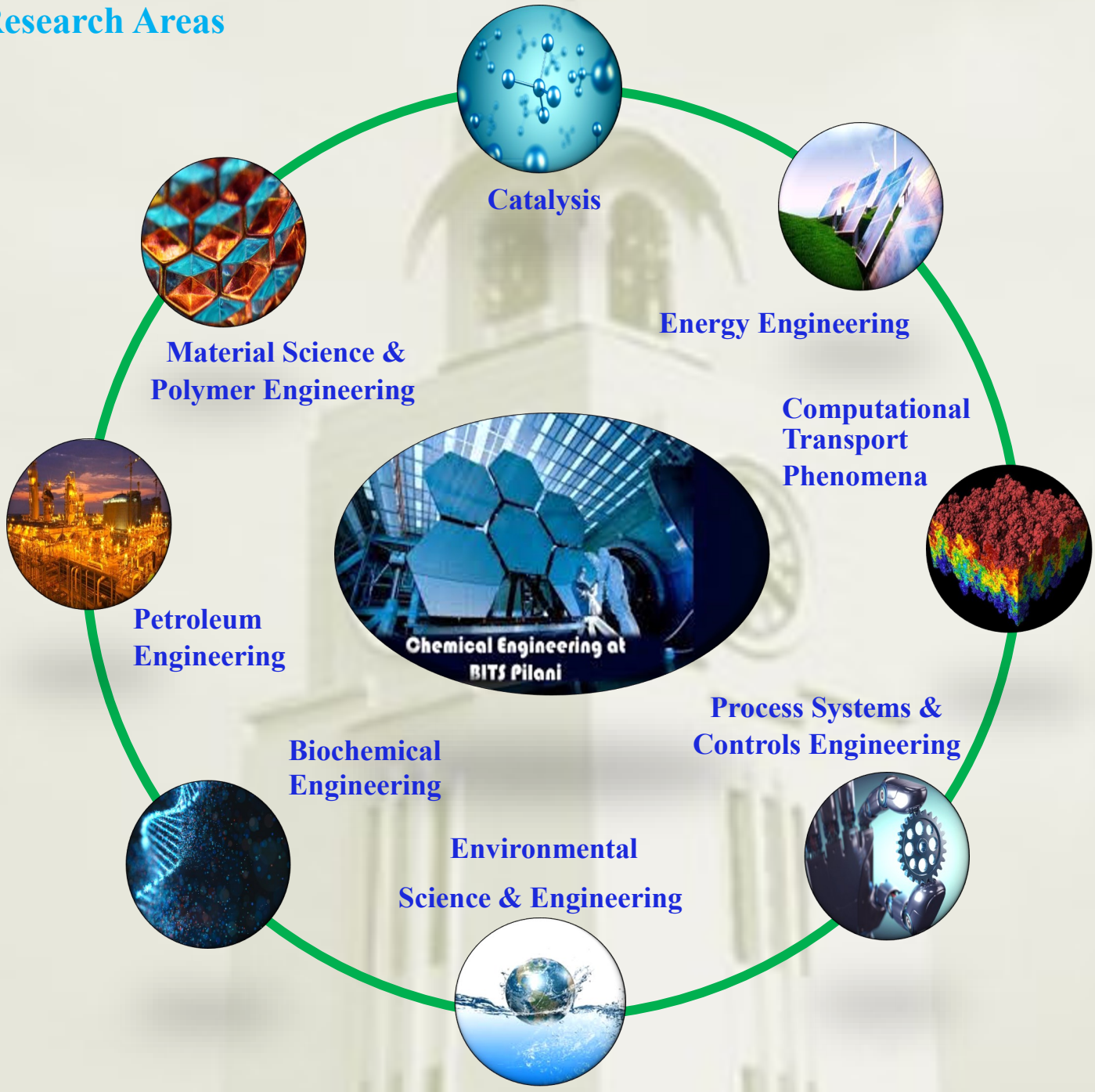
For more details: http://www.bitsadmission.com/

WILP (Work Integrated Learning Program)

It is a continuing technical education programs designed to create a smarter future ready workforce for the organizations. Since 1979, WILP has helped corporate leaders to connect their learning investments with their business. Additionally, this program significantly contributes toward productivity enhancement, employee retention and succession planning in organizations. There are more than 30 programmes, 90 corporate partners, and 1000 faculty members connected in this program, while 20000 working professional are enrolled currently and 70000 working professional graduated out so far.

For more details: https://bits-pilani-wilp.ac.in/programmes-for-organisation.php

Research Areas



List of ongoing research projects:

- Dr. Somak Chatterjee, Dr. K. C. Etika, Design and development of inline sensor for water contamination detection - INR 26.67 Lakhs, 2020 - 2022 - Industry (A renowned water filter manufacturer in USA).
- Dr. K.C. Etika, Development of microporous PVC coatings for synthetic leather applications, - INR 7.57 Lakhs, Jan. 2020 - Apr. 2021 - Industry (A renowned synthetic leather manufacturer).
- Dr. Pradipta Chattopadhyay, Understanding emulsion kinetics of surfactants, 7.9 Lakhs, Sept. 2020 – Aug. 2022 - Industry (Total Oil India Pvt Ltd.).
- Prof. Smita Raghuvanshi, Process development for Bio-Mitigation of Flue Gases (CO2, SOx and NOx) using chemolithotrophs and production of value-added products - INR 31.61 Lakhs, 2019 - 2022, CRG, SERB - DST.
- Dr. B.V. Reddy K., Assessment of Mixed-Matrix membrane system for CO separation for upgradation of Biogas to Bio-Compressed Natural Gas (Bio-CNG) - INR 24.47 Lakhs, 2019 - 2021, SRG, SERB - DST.
- Dr. Srinivas Appari, Prevention of Hazardous Field-Firing of Bagasse and Its Sustainable Utilization as a Raw Material in An Innovative Industrial Process - INR 28.79 Lakhs, 2019 - 2021, MHRD - SPARK.

A detailed overview of research projects funded by the institute as well as external grants from industry and several government funding agencies are listed in the following link:

https://www.bits-pilani.ac.in/pilani/chemicalengineering/SponsoredResearchProjects

Research Infrastructure

Departmental research activities reflect the interdisciplinary nature of modern Chemical Engineering. Research is organized in numerous themes that cover the contribution to grand challenges in the arena of Chemical Engineering. Department is in sync today`s trend with state-of-the-art facilities in terms of having best of analytical facilities to carry out good research work and best of computational facilities.

Research Facilities

Analytical	List of our state of the art facilities
• Atomic Absorption Spectrophotometer (AAS) • Online Gas Chromatograph (GC) • Fourier Transform Infrared Spectrophotometer (FTIR) • Differential Scanning Calorimeter (DSC) • Thermo Gravimetric Analyzer (TGA) • High Performance Liquid Chromatography (HPLC) • BET Surface Area Analyzer • UV/ VIS Spectrophotometer • High Speed Photography & Imaging Devices • X-Ray Diffraction (XRD) • Field Emission Scanning Electron Microscope (FESEM-EDX) • Atomic Force Microscope (AFM) • Pyrolysis Gas Chromatography (Py-GC-MS/MS) • XPS (X-Ray Photoelectron Spectroscopy) • Nuclear Magnetic Resonance (NMR) • Raman Spectroscopy • Confocal Microscopy • Ion Selective Electrode for Fluoride Analysis **Computational** • ASPEN One University Package, ANSYS CFD 18.0, CosmoTherm • MATLAB, ABSOFT, COMSOL Multiphysics • Open Source Coding Platforms & Data Visualization Tools • Computer Aided Design Laboratory	• Air-Lift Bioreactor • Fluidized Bed Pyrolysis Unit • Biofilter Reactor • Biomass Gasifier • Pyrolysis Unit • Continuous Adsorption • Catalyst Fixed Bed Reactor • Low-temperature Steam reforming reactor • High Pressure Hydrothermal Reactors • Fermenter • High Speed Photography and Imaging devices • PIV • Reactive Distillation Column • Saybolt & Engler Viscometer • Penetrometer Apparatus • Bomb Calorimeter • Melting Point & Smoke Point Apparatus • Oxidation Stability Tester • Conradson Carbon Residue • Planetary Ball Mill • pH and Temperature Controlled Fermentor • Membrane Caster • Dead-end Filtration Cell • Hollow Fiber Spinneret Unit • Hollow Fiber Cross Flow Cell • Four-Probe Potentiostat Cell

GC– MSMS

K-Alpha XPS

HPLC

NMR Spectroscopy

Faculty

Dr. Banasri Roy

Associate Professor and HOD

Ph.D. : Colorado School of Mines, USA
M.Tech.: IIT Kanpur, India

RESEARCH INTERESTS

- Nanocatalysts and Hydrogen production from biomass
- Biomedical materials
- Solar cell devices and processing of solar cell materials
- Fuel cell materials

SELECTED PUBLICATIONS:

- R. Chava, D. Purbia, B. Roy, V. M.Janardhanan, A. Bahurudeen, S. Appari, Effect of Calcination Time on the Catalytic Activity of Ni/γ-Al2O3 Cordierite Monolith for Dry Reforming of Biogas, International Journal of Hydrogen Energy, 46, (2021), pp. 6341-6357.
- S. Sharma, S. Aich, B. Roy, Low temperature steam reforming of ethanol over cobalt doped bismuth vanadate [Bi4 (V0.90Co0.10)2O11-δ (BICOVOX)] catalysts for hydrogen production, Journal of Physics and Chemistry of Solids, 148, (2021), p. 109754
- V. Singh, A. Rao, A. Tiwari, P. Yashwanth, M. Lal, U. Dubey, S. Aich, B. Roy, Study on the e□ects of Cl and F doping in TiO2 powder synthesized by a solgel route for biomedical applications, J. Phys. Chem. Solids, 134, (2019), pp. 262–272.

Google Scholar Page : https://scholar.google.com/citations?user=HF4Inh8AAAAJ&hl=en
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/broy/profile

Dr. Arvind Kumar Sharma

Associate Professor

Ph.D. : IIT Madras, India
M.S. : IIT Madras, India

RESEARCH INTERESTS

- Water and Wastewater Treatment
- Fluidization
- Bioreactor Analysis and Design
- Reaction Mechanism and Kinetics

SELECTED PUBLICATIONS:

- A. Pahwa and A. K. Sharma, Optimization of Multi-Stage Fluidized Bed using Amine Sorbent as an Alternative to Alkanol-Amine for Deep Sour Gas Removal, 36 th National Convention of Chemical Engineers (online mode), March 6-7, 2021, Durgapur, India.
- D. Purbia, A. Khandelwal, A. Kumar and A. K. Sharma , Graphene-water nanofluid in heat exchanger: Mathematical modelling, simulation and economic evaluation, International Communications in Heat and Mass Transfer, 108,(2019), p. 104327.
- Roshan Chandra, Raman Sharma and Arvind Kumar Sharma, Attrition of Bed Particles in a Recirculating Fluidized Bed Reactor, IEA Clean Coal Centre's 8th International Conference on Clean Coal Technologies (CCT 2017), May 8 - 12, 2017, Cagliari, Italy.

Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/arvinds/Profile

Dr. Suresh Gupta

Associate Professor

Ph.D. : BITS Pilani, Pilani Campus
M.Tech.: IIT Kanpur, India

RESEARCH INTERESTS

- Environmental Engineering
- Separation Processes
- Modeling and Simulation
- Computational Transport Phenomena
- Environmental Management Systems (LCA, EIA)

SELECTED PUBLICATIONS:

- A. Anand, S. Raghuvanshi, S. Gupta, Trends in Carbon Dioxide (CO2) Fixation by Microbial Cultivations. Current Sustainable/Renewable Energy Reports, 7, (2020), pp. 40–47.
- S.K. Pradhan, V. Pareek, J. Panwar, and S. Gupta, Synthesis and characterization of ecofriendly silver nanoparticles combined with yttrium oxide (Ag-YO3) nanocomposite with assorted adsorption capacity for Cu(II) and Cr(VI) removal: A mechanism perspective, Journal of Water Process Engineering, 32, (2019), p. 100917.
- S. Mishra, S. Raghuvanshi, S. Gupta, Carbon dioxide to bio-fuels by mixed and pure microbial cultures isolated from activated sludge: relative evaluation of CO_2 fixation, biodiesel production, and thermodynamic analysis, Green House Gases: Science and Technology, 9, (2019), pp. 1135-1157.

Google Scholar Page : https://scholar.google.com/citations?user=tqwaWI8AAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/sureshg/profile

Dr. Hare Krishna Mohanta

Associate Professor

Ph.D. : BITS Pilani, Pilani Campus
M.Tech.: IIT Kanpur, India

RESEARCH INTERESTS

- Process Modeling and Control
- Reactive distillation
- Petroleum refining
- Modeling and Simulation
- Fuel cell materials

SELECTED PUBLICATIONS:

- A. K. Pani & H.K. Mohanta., Online monitoring of cement clinker quality using multivariate statistics and Takagi-Sugeno fuzzy-inference technique, Control Engineering Practice, 57, (2016), pp. 1-17.
- P. K. Singh, S. Bhanot & H. K. Mohanta, Particle Swarm Optimization based Fuzzy Logic Control of pH Neutralization Process, International Journal of Applied Engineering Research, 10, (2015), pp. 211-215.
- A. K. Pani & H.K. Mohanta, Online monitoring and control of particle size in the grinding process using least square support vector regression and resilient back propagation neural network. ISA transactions, 56, (2015), pp. 206-221.

Google Scholar Page : https://scholar.google.com/citations?user=cxaKC3MAAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/harekrishna/profile

Dr. Pratik N. Sheth

Associate Professor

Ph.D.: BITS Pilani, Pilani Campus, India
M.E. : BITS Pilani, Pilani Campus, India

RESEARCH INTERESTS

- Thermo-chemical Conversion of Biomass/RDF
- Pyrolysis and Gasification
- Modeling and Simulation
- Computational Fluid Dynamics
- Alternate Energy Resources

SELECTED PUBLICATIONS:

- B. Pandey, Y.K. Prajapati, and P.N. Sheth, Recent progress in thermochemical techniques to produce hydrogen gas from biomass: A state of the art review, International Journal of Hydrogen Energy, 44, (2019), pp. 25384-25415.
- T. Patra and P.N. Sheth, Biomass gasification coupled with producer gas cleaning, bottling and HTS catalysis treatment for H_2-rich gas production, International Journal of Hydrogen Energy, 44, (2019), pp. 11602 - 11616.
- T. Patra, S. Mukherjee, and P.N. Sheth, Process Simulation of hydrogen rich gas production from producer gas using HTS Catalysis, Energy, 173, (2019), pp. 1130-1140.

Google Scholar Page: : https://scholar.google.co.in/citations?hl=en&user=S6Im2SYAAAAJ
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/pratik/profile

Dr. Smita Raghuvanshi

Associate Professor

Ph.D.: BITS Pilani, Pilani Campus, India
M.E. : BITS Pilani, Pilani Campus, India

RESEARCH INTERESTS

- Environmental and Biochemical Engineering
- Life Cycle Assessment (LCA) of Engineering Processes using Umberto LCA Software

SELECTED PUBLICATIONS:

- A. Khandelwal, A. Anand, S. Raghuvanshi, S. Gupta, Integrated approach for microbial carbon dioxide (CO_2) fixation process and wastewater treatment for the production of hydrocarbons: Experimental studies, Journal of Environmental Chemical Engineering, 9, (2021), p. 105116.
- S. Mishra, S. Pahari, Siva K., S. Mohanty, S. Gupta, S. Raghuvanshi, Investigation on CO_2 bio-mitigation using Halomonas stevensii in laboratory scale bioreactor: Design of downstream process and its economic feasibility analysis, Journal of CO_2 Utilization, 24, (2018), pp. 274 - 286 .
- S. Raghuvanshi, V. Bhakar, C. Sowmya, K.S. Sangwan, Waste water treatment plant life cycle assessment: treatment process to reuse of water, Procedia CIRP, 61, (2017), pp. 761 - 766.

Google Scholar Page : https://scholar.google.com/citations?user=EtO5v14AAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/smita/profile

Dr. Pradipta Chattopadhyay

Assistant Professor

Ph.D. : University of Tulsa, USA
M.S. : Texas A&M University-Kingsville, USA

RESEARCH INTERESTS

- Foam property evaluation
- Modeling and characterization
- Aqueous foam stability
- Aqueous Foam and Surfactant Based Applications

SELECTED PUBLICATIONS:

- A. Dhaka, P. Chattopadhyay, A review on physical remediation techniques for treatment of marine oil spills, Journal of Environmental Management, 288, (2021), p. 112428.
- B. Dandigunta, A. Karthick, P. Chattopadhyay, A.S. Dhoble, Impact of temperature and surfactant addition on milk foams, Journal of Food Engineering, 299, (2021), p. 110509.
- A. Karthick, B. Roy, P. Chattopadhyay, A review on the application of chemical surfactant and surfactant foam for remediation of petroleum oil contaminated soil, Journal of Environmental Management, 243, (2019), pp. 187-205.

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Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/pradipta/profile

Dr. Srinivas Appari

Assistant Professor

Post Doc.: IMCE, Kyushu University, Japan.
P.hD. : IIT Hyderabad, India
M.Tech. : JNTU Hyderabad, India

RESEARCH INTERESTS

- Heterogeneous Catalysis
- Detailed Kinetic Modeling
- Waste to Energy& Transportation fuels
- Modeling, Simulation& Control

SELECTED PUBLICATIONS:

- R. Chava, D. Purbia, B. Roy, V. M. Janardhanan, Bahurdeen A, S. Appari, Effect of Calcination Time on the Catalytic Activity of Ni/γ-Al2O3 Cordierite Monolith for Dry Reforming of Biogas, International Journal of Hydrogen Energy, 46 (9), (2021), pp. 6341-6357
- G. Athira, A. Bahurudeen, S. Appari, Rice Straw Ash as a Potential Supplementary Cementitious Material: Influence of Thermochemical Conversion on its Properties, Journal of Materials in Civil Engineering, 33(6), (2021).
- G. Athira, A. Bahurudeen, S. Appari, Sustainable alternatives to carbon intensive paddy field burning in India: A framework for cleaner production in agriculture, energy, and construction industries, Journal of Cleaner Productions, 236, (2020), p. 117598.

Google Scholar Page : https://scholar.google.com/citations?user=AQ4sbhsAAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://www.bits-pilani.ac.in/pilani/srinivasappari/profile

Dr. Ajaya Kumar Pani

Assistant Professor

Ph.D. : BITS Pilani, Pilani Campus, India
M.Tech.: IIT BHU, India

RESEARCH INTERESTS

- Process Control and Process Modelling
- Virtual Instrumentation
- Artificial Intelligence and Soft Computing Applications in Chemical Engineering

SELECTED PUBLICATIONS:

- H. Singh, A. K. Pani, H. K. Mohanta, Quality monitoring in petroleum refinery with regression neural network: Improving prediction accuracy with appropriate design of training set, Measurement, 134, (2019), pp. 698-709.
- A. Morey, S. Pradhan, R. A. Kumar, A. K. Pani, V. S. Vijayan, V. Jain, A. Gupta, Pollutant monitoring in tail gas of sulfur recovery unit with statistical and soft computing models. Chemical Engineering Communications, 206, (2019), pp. 69 -85.
- K. Siddharth, A. Pathak, A. K. Pani, Real-time quality monitoring in debutanizer column with regression tree and ANFIS. Journal of Industrial Engineering International, 15, (2019), pp. 41-51.

Google Scholar Page : https://scholar.google.co.in/citations?user=T67UsvkAAAAJ&hl=en
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/akpani/profile

Dr. Amit Jain

Assistant Professor

Ph.D. : BITS Pilani, Pilani Campus, India
M.E. : BITS Pilani, Pilani Campus, India

RESEARCH INTERESTS

- Process Control
- Environmental Engineering
- Biochemical Engineering
- Fluid Mechanics
- Modeling and Simulation

SELECTED PUBLICATIONS:

- V. Revanth, S. Gaur and A. Jain, Effect of aeration rates on rhamnolipid production by Pseudomonas aeruginosa in a batch bioreactor, Proceedings of Recent Advancements in Biochemical Engineering and Biotechnology [RABEB-2019], (2019), School of Biochemical Engineering, Indian Institute of Technology (BHU) Varanasi, India.
- V. Revanth, G. Shailee and A. Jain, Effect of aeration rates on rhamnolipid production by Pseudomonas aeruginosa in a batch bioreactor, Proceedings of Recent Advancements in Biochemical Engineering and Biotechnology [RABEB-2019], (2019), Indian Institute of Technology (BHU) Varanasi, India.
- C. Abhijeet and J. Amit. Studies on closed-loop interaction in a multi-loop single tank control system, International Journal of Engineering & Technology, 7, (2018) pp. 38-41.

Google Scholar Page : https://scholar.google.com/citations?user=bNqEQ7wAAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/amitjain/profile

Dr. Priya C. Sande

Assistant Professor

Ph.D. : BITS Pilani, Pilani Campus, India
M.E. : BITS Pilani, Pilani Campus, India

RESEARCH INTERESTS

- Computational Fluid Dynamics
- Powder Technology
- Petroleum Engineering
- Machine Learning
- Engineering Education and Lateral Thinking

SELECTED PUBLICATIONS:

- P. C. Sande, S. Sharma, Lateral Thinking in Learning Computational Fluid Dynamic Methods, Sustainable Production, Life Cycle Engineering and Management, 1, (2020), pp. 253-261.
- S. Dhankar, H. K. Mohanta, A. Neogi, P. C. Sande, Method to predict complete product fraction TBP distributions from that of the whole crude using regression techniques: applied to shale oil. Petroleum and Coal, 61, I 5, (2019), pp. 1089-1101.
- P.C. Sande, S. Ray, Fine Mesh Computational Fluid Dynamics Study on Gas-Fluidization of Geldart A Particles: Homogeneous to Bubbling Bed, Industrial & Engineering Chemistry Research, 55, (2016), pp. 2623-2633.

Google Scholar Page : https://scholar.google.com/citations?user=HFMkLYkAAAAJ&hl=en&oi=sra
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/priya/Profile

Dr. Bhanu Vardhan Reddy Kuncharam

Post Doc.: Worcester Polytechnic Institute, USA
P.hD. : Texas A&M university, Texas, USA

RESEARCH INTERESTS

- Membrane Separations (Mixed Matrix Membranes, Catalytic Membranes)
- Computational Fluid Dynamics,
- Catalysis and Reactor Engineering

SELECTED PUBLICATIONS:

- Neha J., Nirmal Kumar S., Priya T. S., B.V.R Kuncharam, Synthesis And Characterization Of Mixed-Matrix Material of Zirconium Based Metal Organic Framework (MOF: UiO-66-NH2) And Poly(Ether-Urethane-Urea), Materials Today: Proc, 28 (2), (2020), pp. 734-738.
- B.V.R Kuncharam, and A.G Dixon, "Multi-scale two-dimensional packed bed reactor model for industrial steam methane reforming", Fuel Processing Technology, 2020, 200, p. 106314
- B.V.R Kuncharam, and B. A. Wilhite, “Theoretical Investigation of a Water-Gas-Shift Catalytic Membrane for Diesel Reformate Purification”, AIChE Journal, 2013, 59, pp. 4334–4345.

Google Scholar Page : https://scholar.google.com/citations?user=kkBb-dMAAAAJ&hl=en
Faculty Profile Webpage: https://universe.bits-pilani.ac.in/pilani/bhanuvardhan/profile

Dr. Krishna C. Etika

Post Doc.: IIT Madras, India
Ph. D. : Texas A&M university, Texas, USA
M.Tech. : IIT Kharagpur, India

RESEARCH INTERESTS

- Multifuctional Materials
- Polymer Nanocomposites
- Nanotechnology
- Stealth Technology

SELECTED PUBLICATIONS:

- K. Bhaskaran, R.K. Bheema, K.C. Etika, The influence of Fe_3O_4@GNP hybrids on enhancing the EMI shielding effectiveness of epoxy composites in the X-band, Synthetic Metals, 265, (2020), pp. 116374.
- V.U. Varun, B.R. Kumar, K.C. Etika, Hybrid polymer nanocomposites as EMI shielding materials in the X-band, Materials Today: Proceedings, 28(2), (2020), pp. 796.
- V. Chavhan, Md., K.C. Etika and A. Mukhopadhyay, "The Design of Personnel Protective Clothing For Protection Against Cbrn Agents: A Review", Filtration ,18(2), (2018), pp. 98-117

Google Scholar Page : https://scholar.google.com/citations?user=e4kYT2IAAAAJ&hl=en&oi=sra
Faculty Profile Webpage: https://www.bits-pilani.ac.in/pilani/etikakrishna/Profile

Dr. Somak Chatterjee

Assistant Professor

Industrial Experience: GE appliances and Marmon Waters
Ph.D. : IIT Kharagpur, India
M.Tech. : IIT Kharagpur, India

RESEARCH INTERESTS

- Adsorption
- Membrane
- Sensors
- Aesthatic Design
- Biocidal Extraction

SELECTED PUBLICATIONS:

- S. Chatterjee, M. Mukherjee and S. De, Groundwater defluoridation and disinfection using carbonized bone meal impregnated polysulfone mixed matrix hollow-fiber membranes, Journal of Water Process Engineering, 33, (2020), pp.101002-101013.
- S. Chatterjee, A. Jain, S. De, Cloud point assisted extraction for preconcentration of thymol from water extract of Ajwain (Trachyspermum Ammi L.) seeds, Journal of Food Science and Technology, 54, (2017), pp. 4353-4361.
- S. Chatterjee, M. Mukherjee and S. De, Defluoridation using novel chemically treated carbonized bone meal: batch and dynamic performance with scale-up studies, Environmental Science and Pollution Research, 1, (2018), pp. 1-18.

Google Scholar Page : https://scholar.google.com/citations?user=6OfOUlwAAAAJ&hl=en&oi=ao
Faculty Profile Webpage: https://www.bits-pilani.ac.in/pilani/somakchatterjee/profile

Dr. Arkoprovo Ghosal

Assistant Professor

Ph. D.: University of Illinois, Chicago, USA
M.Sc. : University of Stuttgart, Germany

RESEARCH INTERESTS

- Computational Fluid Dynamics
- Micro- and Nano-scale Transport Phenomena
- Hydrodynamics and Rheology of Jets, Films and Drops
- Stochastic modeling of Flow through Porous Media

SELECTED PUBLICATIONS:

- K. Chen, A. Ghosal, A. L. Yarin and B. Pourdeyhimi, Modeling of spunbond formation process of polymer nonwovens. Polymer, 187, (2020), p. 121902.
- A. Ghosal, K. Chen, S. Sinha-Ray, A. L. Yarin and B. Pourdeyhimi, Modeling Polymer Crystallization Kinetics in the Meltblowing Process. Industrial & Engineering Chemistry Research, 59(1), (2019) pp. 399-412.
- A. Ghosal, S. Sinha-Ray, A. L. Yarin and B. Pourdeyhimi, Numerical modeling and experimental study of solution-blown nonwovens formed on a rotating drum. Polymer, 105, (2016), pp. 255-263.

Google Scholar Page : https://scholar.google.com/citations?view_op=new_articles&hl=en&imq=Arkaprovo+Ghosal#
Faculty Profile Webpage: https://www.bits-pilani.ac.in/Pilani/arkaprovoghosal/profile

Dr. Sarbani Ghosh

Assistant Professor

Post Doc.: Linköping University, Sweden;
IIT Kanpur, India
Ph.D. : IIT Kharagpur, India
M.Tech. : University of Calcultta, India

RESEARCH INTERESTS

- Hydrogen Energy
- Molecular Dynamics Simulation
- Density Functional Theory
- GCMC Simulations
- Electronic Structures

SELECTED PUBLICATIONS:

- S. Ghosh, M. Moser, J. Gladisch, T. C. Hidalgo, J. F. Ponder Jr., et al., Controlling Electrochemically Induced Volume Changes in Conjugated Polymers by Chemical Design: from Theory to Devices, Advanced Functional Materials, 10, (2021), p. 2100723.
- S. Ghosh, M. Berggren and I. Zozoulenko, Electronic Structures and Optical Properties of p-type/n-type Polymer Blend: A Density Functional Theory Study, The Journal of Physical Chemistry C, 124, 17, (2020), pp. 9203-9214.
- M. Moser, T. C. Hidalgo, J. Surgailis, J. Gladisch, S. Ghosh et al., Side Chain Redistribution as a Strategy to Boost Organic Electrochemical Transistor Performance and Stability, Advanced Materials, 32, (2020), p. 2002748

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Faculty Profile Webpage: https://www.bits-pilani.ac.in/pilani/sarbanighosh/profile

Staff

Mr. Suresh Kumar Sharma
Operation Assistant

Mr. Jangvir
Technical Assistant

Mr. Kuldeep Kumar
Demonstrator

Mr. Ashok Saini
Attendant

Mr. Jeevan Lal Verma
Attendant

Mr. Sunder Lal Harigan
Attendant

WAICEE

The department of chemical engineering conducts a Workshop on Analytical Instruments for Chemical and Environmental Engineers (WAICEE) is held biennially. The workshop provides a sound knowledge of the basic principles of analysis, an understanding of the instrumentation involved, and the opportunity to become familiar with practical techniques. The analytical instruments such as Gas Chromatography, High-Performance Liquid Chromatography, Ultraviolet-visible spectroscopy (UV-VIS Spectrophotometer), Atomic Absorption Spectrophotometer, Fourier Transform Infrared Spectrophotometer, Dynamic Foam Analyzer, Thermal Gravimetric Analyzer, X-Ray Diffraction, Gas Chromatography-Mass Spectrometry, Differential Scanning Calorimetry etc. would be covered. The workshop covers theoretical aspects like an introduction to instrumentation, operation, troubleshooting, calibration, method development, and limitations presented by eminent researchers from allied organizations. The sessions also consist of a practical demonstration on the sophisticated instruments mentioned above.

Professional memberships and Affiliations

Chemical Engineering Association

Chemical Engineering Association (ChEA) is the largest student body of chemical engineering department responsible for handling various affairs conducted by it throughout the year. The core committee for the Association is inducted every year from among the Freshers, who continue to be a part of it in the future. The Association is headed by a Prof-in-charge, while the student leaders are from the third year. The contributions of the first-yearites towards the Association are acknowledged and serve as a key basis for the selection of both - the team of Second Year Representatives and the Annual ChE Deptt. Awards presented to the meritorious students for curricular and extracurricular activities during the Farewell Ceremony. The Farewell Ceremony is conducted every semester at the end of the Second Semester. The Association apart from conducting the Farewell Ceremony every semester also conducts various guest lectures, seminars and talk shows by famous Academicians, Scholars, reputed Scientists and Eminent Industry Experts having humongous contributions in all facets of nation building.

Indian Institute of Chemical Engineers(IIChE Pilani Capter)

Indian Institute of Chemical Engineers (IIChE) Pilani Regional Center (PRC) actively engages students and faculty in chemical engineering and allied fields through various activities. IIChE PRC conducts various seminars, workshops and invited lectures. IIChE PRC also mentors Student Chapter which conducts various activities for engaging chemical engineering students. IIChE PRC student chapter recently conducted: (a) The Chemicool Challenge was a trivia based on chemicals from everyday life which saw outstanding participation from all over the country, (b) Chem-e-chronicles is an ongoing series of informative interviews of faculty members and research scholars (both PhD and Master's students) which aims at creating awareness about research work and boosting research culture among the students, especially undergraduates.

American Institute of Chemical Engineers

In older times, when the connection with other parts of world was not possible, many a times researchers ended up founding something which was already discovered in other part of world. It would have been so helpful if the researchers had a way of being in touch among themselves and collaborate to enhance the inventions. That exactly serves as the foundational belief of the American Institute of Chemical Engineers (AIChE), the purpose of connecting Chemical Engineering Professionals with a global network of intelligent, resourceful colleagues and their shared wisdom. We, the members of Aiche Bits Pilani aim to delve deeper into core Chemical Engineering and explore various aspects of chemical engineering while focusing on building formal, soft and teamwork skills. We want to create an atmosphere to encourage chemical engineering.




Contact Us

Head of Department, Department of Chemical Engineering,

Birla Institute of Technology and Science (BITS)

Pilani - 333031 (Rajasthan) India

Direct Phone: +91-1596-25-5224

Department Office: +91-1596-25-5215

E-mail: banasri.roy@pilani.bits-pilani.ac.in