

Department of Chemical Engineering
School of Studies, Engineering & Technology
Guru Ghasidas Vishwavidyalaya, Bilaspur
(A Central University)





VISION

The vision of the department is to establish itself as one of the best study centers of **Chemical Engineering** education to produce proficient and responsible Chemical Engineers to serve the needs of the industry and society.



MISSION

The mission of the department is

- ❖ To produce career-ready Chemical Engineers with high standards of ethical and social values and entrepreneurial skills.
- ❖ To develop the research culture in fundamental and application-oriented problems to cater the societal and industrial needs.
- ❖ To build strong relationship between academia, industry and other institutions of repute.

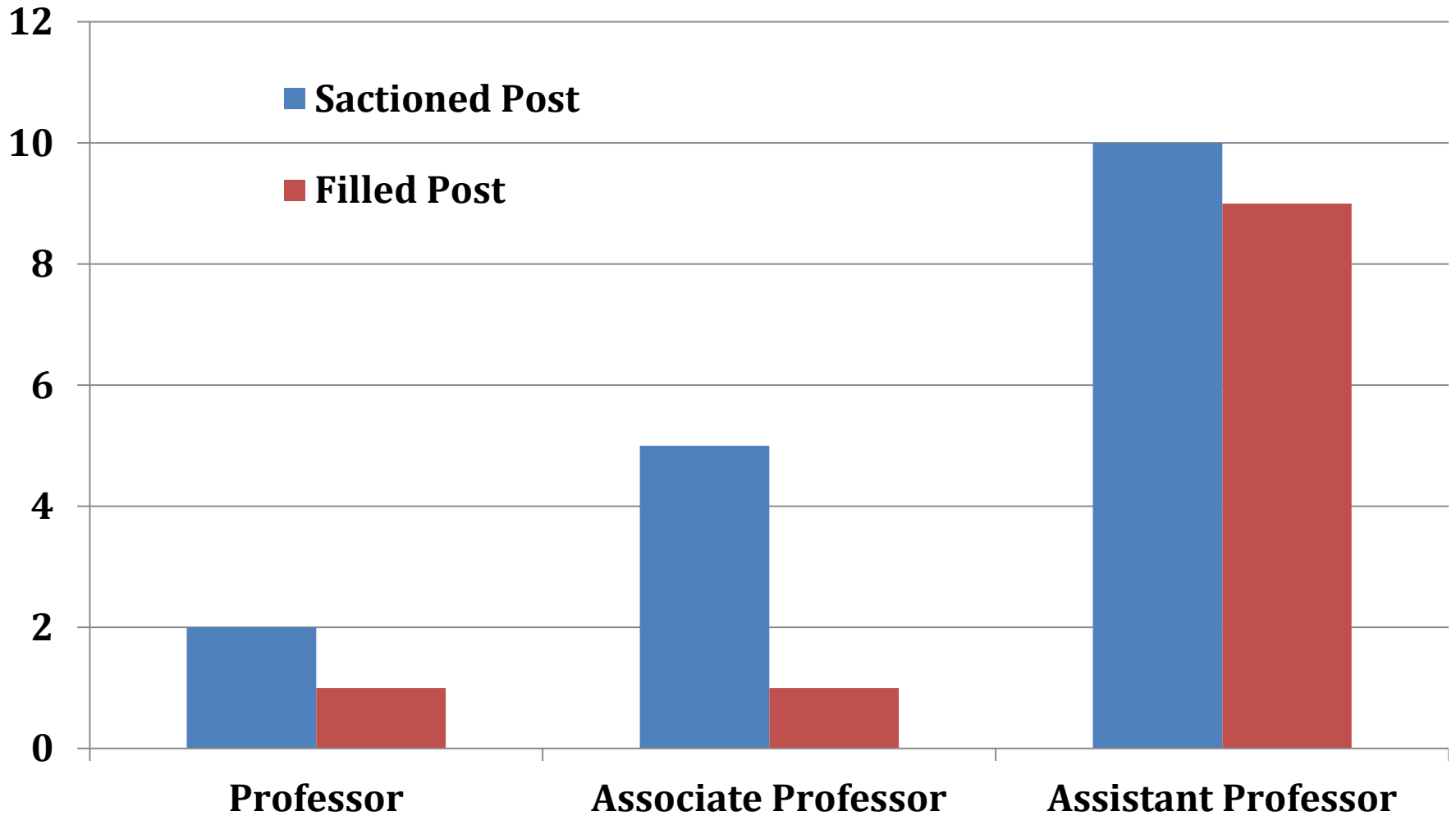


INTRODUCTION

Year of Establishment	:	1997
Admission to B.Tech.	:	JEE (Mains)
P.G. Course started	:	2012
Admission to M.Tech.	:	GATE,VET
Ph.D. Course started	:	2016
Annual Intake	:	U.G. (75), P.G. (23)
Total Faculty Members	:	11
Total Students	:	196



FACULTY STRENGTH





FACULTY DETAILS

Name	Highest Qualification	Designation	Specialization	Experience (years)
Prof. (Dr.) S. N. Saha	Ph.D.	Professor	Fluidization Engg.	38
Dr. Anil Kumar Chandrakar	Ph.D.	Associate Prof.	Catalysis, Reactive Separation	14.5
Mr. Neeraj Chandraker	M. Tech.	Asst. Prof.	Water Purification	19.5
Dr. Amit Jain	Ph.D.	Asst. Prof.	Membrane Separation	16
Mrs. Anuradha Nanewaar Joshi	M. Tech.	Asst. Prof.	Reactive Extraction	17.5
Dr. Saurabh Meshram	Ph.D.	Asst. Prof.	Water Purification, Modeling	12.5
Dr. Raghwendra Singh Thakur	Ph.D.	Asst. Prof.	Adsorption, Process Intensification	9.5
Mr. Gautam Prasad Dewangan	M. Tech.	Asst. Prof.	Computer Added Process & Equipment Design	9.5
Mr. Vishnu Prasad Yadav	M. Tech.	Asst. Prof.	Catalysis, Renewable Energy	8.5
Dr. (Mrs.) Ghoshna Jyoti	Ph.D.	Asst. Prof.	Process Intensification	3
Dr. Sandeep Dharmadhikari	Ph.D.	Asst. Prof.	Membrane Technology, Microbial fuel cell Adsorption	2



CURRICULAM DESIGN & DEVELOPMENT

- Based on the requirement of the current trend and Industrial need the curriculum is revised and upgraded regularly through Board of Studies (BOS), constituted by the University.
- External Expert member in BOS : **Prof. A. B. Soni, NIT Raipur.**
- Vocational Training of 04 weeks is mandatory for the award of degree.
- One minor project and one major project in VII and VIII semester respectively are inducted in the curriculum.



DIVERSITY OF THE CURRICULA

- The Course curriculum includes the subjects from :
 - Core Engineering
 - Basic Engineering and Science
 - Management

	Credits		Weightage (%)	
	UG	PG	UG	PG
Total credits	169.5	68	100	100
Theory	138	32	81.4	47
Laboratory/ Practical	31.5	36	18.6	53



TEACHING LEARNING AND EVALUATION

- Conventional class room teaching using blackboards as well use of semi smart class room
- Teaching with the help of multimedia aids
- Hands on laboratory practice
- Tutorials
- Industrial visit
- Students' Seminars



TEACHING LEARNING AND EVALUATION

Continuous evaluation system in each semester by **Class Test, Mid Sem Exam and End Sem Examinations, Practical IA and ESE**

	Weightage			
	Internal Assessment		End Sem Exam	
	CBCS	AICTE	CBCS	AICTE
Theory	40%	30%	60%	70%
Practical	60%	70%	40%	30%

- Four weeks **Vocational Training** at the end of Sixth semester is mandatory for each student.



STUDENT FEED BACK

- Subject wise student feedback is carried out confidentially by university authority in each semester.
- Based on the feedback from students, necessary improvement steps are taken.



FACULTY EVALUATION

Faculty member submits self appraisal report at the end of each academic session in the prescribed format supplied by University administration.



Grievance Redressal Mechanism

Mentoring system : Each faculty member is assigned as mentor for 15-20 students.

Students grievances are addressed at different levels :

- Faculty in-charge (Semester wise)
- Head of the department
- Disciplinary committee member
- Assistant Dean Students' Welfare (ADSW)
- Dean, School of Studies
- Dean, Students' Welfare (DSW)
- Higher authorities of University Management



LIBRARY FACILITIES

- Central Library (Common facility)
- Institutional Library
 - Text Books : 2091
 - Reference Books : 120
- Journals
 - Online : Springer, Cambridge University, Press, Emerald, Blackwell, Taylor & Francis, Elsevier, Advanced Electronic Materials, ACS Catalysis, etc.



LABORATORY FACILITIES

Name of Laboratory
Basic Chemical Engineering Lab
Fluid Mechanics Lab
Particle and Fluid Particle-Processing Lab
Chemical Engineering Computational Lab
Heat Transfer Lab
Mass Transfer Lab (I & II)
Process Control Lab
Chemical Reaction Engineering Lab
Fuel Combustion Engineering Technology Lab
Instrumentation Lab

Mass Transfer I



Process Control





LIST OF MAJOR EQUIPMENTS

- Gas Chromatograph
- UV- Spectrophotometer
- Distillation Unit
- Heat Exchangers
- BOD Incubator
- Interacting and Non-interacting system
- Ion Exchange Equipment
- Batch & Continuous reactors
- Fluidized Bed Apparatus
- Tray Dryer
- Packed Bed Dryer
- Absorption Unit
- Size Reduction Equipments
- Hot Air Oven
- Muffle Furnace



MAJOR EQUIPMENTS



Fluidized Bed Dryer



Distillation Column



**UV Spectrometer
Photometer**



Gas Chromatograph



BOD Incubator



MAJOR EQUIPMENTS contd.



CSTR / Mixed Flow reactor



Flash Distillation



Temperature Controller



Venturi, Orifice and Rotameter

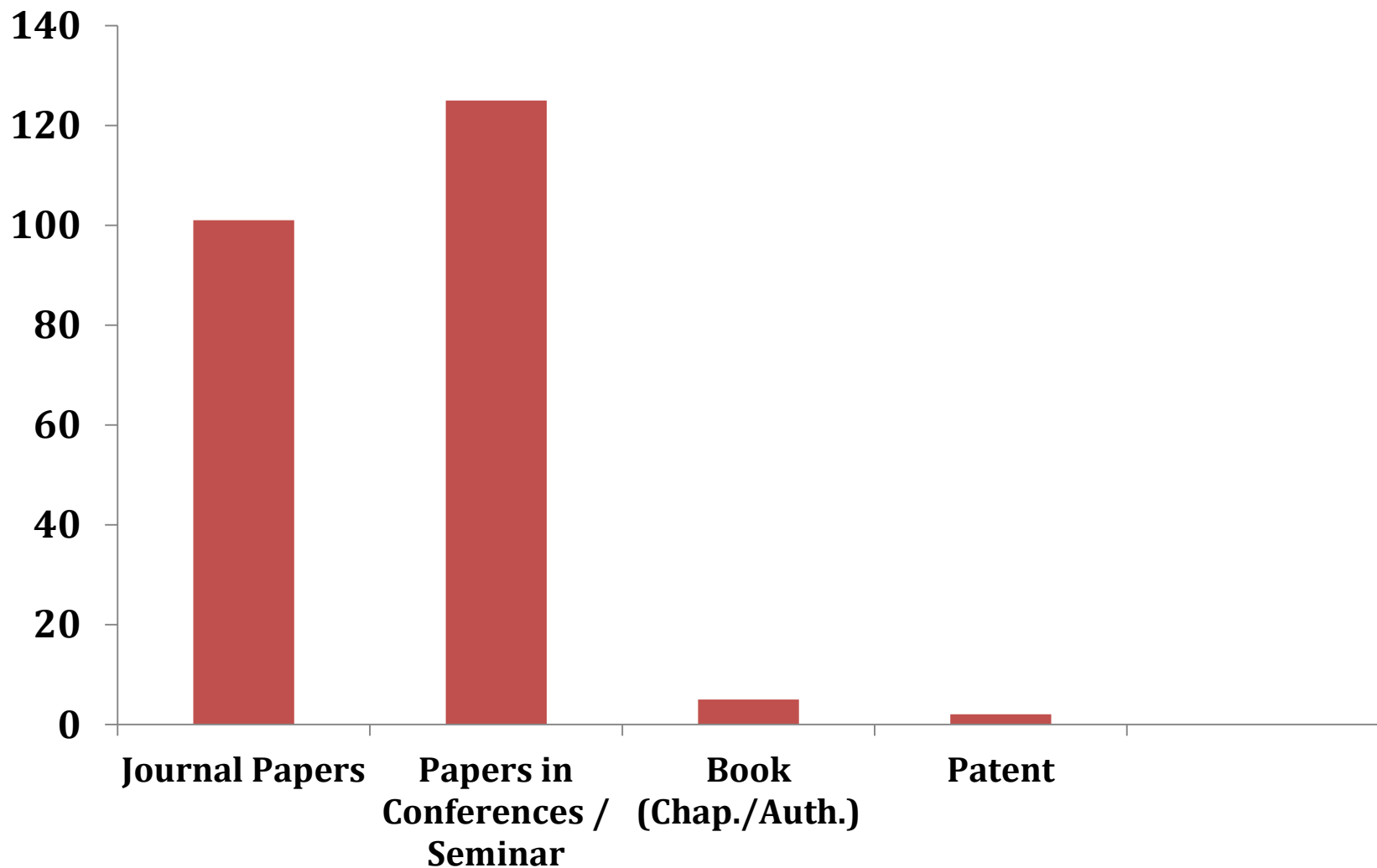


THRUST AREAS FOR RESEARCH

- Fluidization Engineering
- Catalysis
- Reactive Separation & Extraction
- Membrane Separation
- Water Purification
- Adsorption and Process Intensification
- Computer Added Process & Equipment Design
- Modeling and Simulation
- Microbial Fuel cell



RESEARCH PUBLICATIONS OVERVIEW





PUBLICATIONS

Name of Faculty	Publications	
	No. of Publications in Journals	No. of Publications in Conferences
Prof. S. N. Saha	24	40
Dr. Anil Kumar Chandrakar	9	6
Mr. Neeraj Chandraker	7	11
Dr. Amit Jain	8	14



PUBLICATIONS

Mrs. Anuradha Nanewaar Joshi	6	11
Dr. Saurabh Meshram	4	4
Dr. Raghwendra Singh Thakur	19	9
Mr. Gautam Prasad Dewangan	3	9



PUBLICATIONS

Mr. Vishnu Prasad Yadav	3	7
Dr. Ghoshna Jyoti	13	9
Dr. Sandeep Dharmadhikari	9	5



SHORT TERM COURSE / WORKSHOP/FDP/WEBINARS ATTENDED

S.NO.	FACULTY NAME	NO. OF FDP/STTP/SEMINARS/WEBINARS
1.	Prof. S.N. Saha	12
2.	Mr. Neeraj Chandraker	07
3.	Dr. Anil Kumar Chandraker	04
4.	Dr. Amit Jain	36
5.	Mrs. Anuradha N. Joshi	09
6.	Dr. Saurabh Meshram	10
7.	Dr. Raghwendra Singh Thakur	11
8.	Mr. Gautam Prasad Dewangan	05
9.	Mr. Vishnu Prasad Yadav	15
10.	Dr. Sandeep Dharmadhikari	36
11.	Dr. Ghoshna Jyoti	38



ACTIVITIES OF THE DEPARTMENT

- Meeting of Board of Studies of Chemical Engineering held online on July 23, 2021 to finalize the syllabus of B.Tech. final year.
- Meeting of Board of Studies of Chemical Engineering held online on October 01, 2021 to finalize the syllabus of B.Tech. Second year.
- Meeting of Board of Studies of Chemical Engineering held online on October 29, 2021 to finalize the syllabus of M.Tech.
- Online Talk titled “Perspective and Challenges of Higher Education in USA” by One alumnus of the Dept. Himangshu Mondal, State University of New York, Buffalo, USA, was organized by Prof. S.N. Saha.



ACTIVITIES OF THE DEPARTMENT

- One day webinar on “Entrepreneurship: Challenges and Opportunities in COVID-19 Situation” organized by the Department of Chemical Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur on December 05, 2020.
- Special Talk on “Hands on Training of DWSIM” was given by Dr. Vineet Kumar Rathore, Assistant Professor, SVNIT Surat on April 09, 2022., Coordinated by Dr. Saurabh Meshram
- An interactive session was taken by Thammina Kiran (**GATE AIR-59**) for the B. Tech. II and III Year Students on 10 April, Coordinated by Dr. R. S. Thakur.



ACTIVITIES OF THE DEPARTMENT

- Meeting of Board of Studies of Chemical Engineering held online on December 29, 2020 to finalize the syllabus of B.Tech. first year.
- Prof S. N. Saha, delivered online short talk on valedictory function of one-week online seminar on “Current Trends in Engineering Project” in webinar ECE-Skill development, on November 29, 2020.
- Prof S. N. Saha, delivered lectures on (i) Brain storming session on EU collaborating project evening Session, (ii) Industrial applications of fluidization engineering and (iii) Technical session chairman, in international webinar at MGU, Kottayam held on December 18-19, 2020.



ACTIVITIES OF THE DEPARTMENT

- Prof S. N. Saha, delivered online talk on “Comment on the proceedings of the webinar” in webinar on 360-degree feedback for AICTE approved Institutions of Madhya Pradesh & Chhattisgarh, held on January 06, 2021 and February 11, 2021.
- Dr. Sandeep Dharmadhikari, Assistant Professor delivered a lecture on “Bio-Energy: A path towards sustainable future” in a Webinar (Online talk Via Google Meet) held at School of Agriculture and Processing Science Kalasalingam Academy of Research and Education, Srivilliputhur, Tamil Nadu on June 18, 2020.
- Dr. Ghoshna Jyoti, Assistant Professor and Dr. Sandeep Dharmadhikari, Assistant Professor successfully completed and qualified 8 module course offered by NITTTR for new teaching faculties as per AICTE scheme.



ACTIVITIES OF THE DEPARTMENT

- Department of Chemical Engineering, had successfully organized All India Council of Technical Education-Sponsored International Conference on **"Covid Challenges of Energy and Environment for the Sustainable Growth of the Process Industries."**



ACTIVITIES OF THE DEPARTMENT

INTERNATIONAL CONFERENCE (ONLINE) ON COVID CHALLENGES OF ENERGY AND ENVIRONMENT MANAGEMENT FOR SUSTAINABLE GROWTH OF PROCESS INDUSTRIES (CCEEMSGPI-2021)

Registration Form

- Name (Capital Letters) : _____
- Gender : _____
- Designation : _____
- Institution : _____
- Affiliation : _____
- Corresponding Address : _____
- Mobile Number : _____
- WhatsApp Number : _____
- E-mail ID : _____
- Title of the Paper : _____
- Details of Payment
DD Number / Transaction ID : _____
Mode of Payment : _____
Amount : _____
Date of Payment : _____

Date: _____
Place: _____ Signature of the Applicant

Address for Correspondence

Prof. S. N. Saha
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E-mail: cceem2021@gmail.com

Chief Patron
Prof. Alok Kumar Chakrawal
Hon'ble Vice-Chancellor

Patron Prof. T. V. Arjunan
Dean, SoS, Engg. & Tech.

Chairman Prof. S. N. Saha
Dept. of Chemical Engg.

Organizing Secretaries
Dr. Anil Kumar Chandrakar
Dr. Raghendra Singh Thakur
Dr. Amit Jain

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Mr. Neeraj Chandrakar Mrs. Anuradha N. Joshi
Mr. Sourabh Meshram Mr. Gautam Prasad Dewangan
Mr. Vishnu Prasad Yadav Dr. (Mrs.) Ghoshna Jyoti
Dr. Sandeep Dharmadhikari

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Prof. Hiralal Pramanik IIT BHU
Prof. Vijay Lakshmi Yadav IIT BHU
Prof. S. Venkata Mohan IICT, Hyderabad
Mr. S. K. Pal SECL, Bilaspur

INTERNATIONAL CONFERENCE (ONLINE) ON COVID CHALLENGES OF ENERGY AND ENVIRONMENT MANAGEMENT FOR SUSTAINABLE GROWTH OF PROCESS INDUSTRIES (CCEEMSGPI-2021)

(Sponsored by AICTE)

September 10-11, 2021



Organized by

Department of Chemical Engineering
School of Studies of Engineering &
Technology
Guru Ghasidas Vishwavidyalaya
(A Central University)
Bilaspur (C.G.) – 495009, INDIA



ACHIEVEMENTS OF FACULTY MEMBERS

- **Prof. S.N. Saha** was the conference chairman of the International Conference.
- **Dr. Anil Kumar Chandrakar, Dr. Raghwendra Singh Thakur and Dr. Amit Jain** were the organizing secretary of the International Conference and other faculties were members in organizing team.
- **Dr. Amit Jain, Dr. Sandeep Dharmadhikari, Dr. Ghoshna Jyoti and Dr. Raghwendra Singh Thakur** co-chaired at International Conference (CCEEMSGPI-2021).



ACHIEVEMENTS OF FACULTY MEMBERS

Books / Book chapters with ISBN with details of publishers

- **S. N. Saha**, Fundamentals of Chemical Engineering, Dhanpat Rai Pub. Ltd., Delhi, 2000 (ISBN- 81-87433-55-8)
- **S. N. Saha**, Fuel Combustion Energy Technology, Dhanpat Rai Pub. Co., Delhi, 2003 (ISBN- 978-8187433347)
- **S. N. Saha**, Chemical Process Engg. Calculation, Dhanpat Rai Pub. Co., Delhi, 2008
- **S. N. Saha**, Elements of Fuel Combustion & Energy Engineering, Dhanpat Rai Pub. Co., Delhi, 2014 (ISBN- 978-93-84378-32-5)
- **A. Jain and S. De**, “Processing of Beverages by Membranes” in Book „Processing and Sustainability of Beverages: Volume 2: The Science of Beverages” (2018), Page 517-570. (Published by Woodhead Publishing, Elsevier) (ISBN- 978-0-12-815259-1)



ACHIEVEMENTS OF FACULTY MEMBERS

- **Prof. S.N. Saha** was appointed by AICTE as “**Margdharshak**” for mentoring the mentee institutes for their accreditation.
- Institution of Engineers India, Chhattisgarh state centre has honoured **Prof. S. N. Saha** on the occasion of teacher’s day 2021 for his contribution towards technical education.
- **Prof. S.N. Saha** has been awarded Maulana Abul Kalam Azad excellence award of education 2020 by AICTE/Shikshak kalyaan foundation.
- **Dr. Ghoshna Jyoti** received a UGC (Start-up Research Grant) on **“Comparative study on homogeneous and heterogeneous catalytic esterification of mono-carboxylic acids with butyl alcohol”** for two years.



STUDENTS ACHIEVEMENTS

- **43 selection** through **GATE** in last seven years.
- One student (T. Kiran) got **AIR- 59** and one passed out student (Utkarsh Patel) got **AIR-30** in GATE-2022.
- Students selected in various PSU companies through **GATE**
- Three students Jatin Patel, Ram Vijay Yadav, and Rani Besra are selected in Wipro Ltd., Cipla Pharma, and Infosys, respectively in March 2022.
- Chemical Engineering department have its own students' society Chemical Engineering Students Society (**ChESS**).
- Best paper presentation awarded to Rakhi Soni for the paper titles “Kinetics study of esterification reaction of acrylic acid with n-butyl alcohol” at IISER Bhopal on 25-26 March 2022.



STUDENTS ACHIEVEMENTS

- **Ketan Singh Rathore** (V Sem) participated in Desi Rang on August 10, 2020, organised by Nrutyadham Kala Samiti (National Level Online Dance Competition) in the Field of Semiclassical Dance and bagged 3rd Position.
- **Ketan Singh Rathore** (V Sem) participated and got the 2nd Position in the ANASS INDIA all India social distancing online dance contest 2020 season - 4.
- **Jatin Patel** (B.Tech. V Sem) worked as Event management leader at Developer Student Club GGV.



STUDENTS ACHIEVEMENTS

- **Yamjala Rakesh** (B.Tech. V Sem) contributed as MyNEP Ambassador towards promoting the National Education Policy 2020 and also participated in MyNEP quiz competition.
- All B.Tech. Chemical III, V and VII semester students participated in Online Talk titled “Perspective & challenges of higher education in USA” by **Ex-student Himangshu Mondal**, State University of New York, Buffalo, USA, organized by Prof. S. N. Saha.
- Abhishek Soni (B.Tech. VIII Sem) qualified the exam iPATE (30 Oct 2021).



BEST PRACTICES

- E-books and notes are provided
- Display of Monthly attendance
- Showing of valued answer sheets to students
- Aptitude and GATE practice tests
- Tutorial classes and giving assignments
- Doubts clearing classes
- Previous lecture revision before the each lecture
- Promote students towards research
- Remedial Classes
- Display of Model Answer
- Personality development activities
- Sports facility for students, NSS activity, Tech Fest etc. are also conducted



OTHER ACTIVITIES

- A special talk on “Hands on Training on DWSIM” was organized. The invited speaker was Dr. Vineet Kumar Rathore, Asst. Prof., SVNIT Surat.
- Department had organised one day webinar on “**Entrepreneurship: Challenges and opportunities in COVID-19 situation**” the invited speakers were Dr. Sandeep Patil , Director of E-spin Nanotech Fiber Pvt. Ltd. and Ms. Ritu Kesarwani, Netherland based Independent consultant working on circular economy.
- Department had organised one day webinar on “**Career opportunities after B.Tech.**” the invited speaker was Mr. Preyansh Vardhan Jain, Motivational speaker & career counsellor.



Thank You