Sri Venkateswara College of Engineering

DEPARTMENT OF CHEMICAL ENGINEERING

MONTHLY NEWSLETTER

THE CATALYST

"ACCELERATING IDEAS INTO ACTIONS"

Volume: 4, Issue: IX, September 2024

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ABOUT THE DEPARTMENT

Sri Venkateswara College of Engineering (SVCE) is one of the premier technical institutions in Tamilnadu. The College is situated on the Chennai – Bengaluru National Highway. The college offers 12 UG programs and 7 PG programs. SVCE is an ISO 9001:2015 certified institution and Accredited by NAAC with A+ grade. For more details visit: www.svce.ac.in.

Department of Chemical Engineering came into existence in the year 1994 with the B.Tech programme. The Department has highly qualified and experienced faculty with modern infrastructure facilities. The department offers B.Tech, M.Tech and Ph.D programmes in Chemical Engineering. The B.Tech Chemical Engineering programme is accredited by the **National Board of Accreditation (NBA)** till June 2025.

The IIChE- SVCE Student chapter has been bestowed with best Student Chapter Award of Ambuja and Pidilite Industries award for 15 times. The department organizes a National Level Technical Symposium "PANSOPHY" every year and also organizes Short Term Training Programs / Faculty Development Programs / Seminars / Workshops / Guest Lectures and National Conferences periodically. Two patents and projects from various funding agencies viz. BRNS, TNSCST, AICTE - MODROBS, AICTE - RPS, IIChE have been granted to our faculty and students to enhance the research and technical skills.

VISION

To attain comprehensive recognition in research and training students for developing a value based sustainable society on both National and global platforms by fostering creative minds for academic and research excellence with highly futuristic facilities and potential support.

MISSION

Empowering Excellence: To establish a cutting-edge infrastructure that supports and propels internationally acclaimed research, fosters creativity, and cultivates an entrepreneurial spirit.

Continuous Improvement: To empower individuals by nurturing their innovative capabilities, equipping them with essential skills and attributes to innovate and meet the evolving needs of society.

Lifelong Support: To provide high-quality technical education with hands on experience that prepares students for successful careers in the chemical and allied industries, enabling them to excel both national and global scales.

PROGRAMMES OFFERED

B. Tech. CHEMICAL ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Equip students with the necessary skills and knowledge to prosper in their career in Chemical Engineering and related domains.

PEO 2: Encourage students to pursue advanced learning and engage in research with internationally acclaimed institutions and foster professional growth.

PEO 3: Empower students with leadership qualities to succeed in diversified fields with ethical administrative acumen and adapt to the rapid technological advancements and innovations.

PROGRAM OUTCOMES (POs)

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design / development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Apply the knowledge of science and mathematics in the field of various transport processes to accomplish the contemporary needs of chemical and allied industries.
2. Execute the chemical engineering principles and modern engineering tools to conduct experiments or design a system for developing quality chemical processes by considering the cost, safety and environmental aspects.

M. Tech. CHEMICAL ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Function effectively to solve complex industrial problems using Chemical engineering concepts and also in expanding areas of Energy and Environmental industries.
PEO2: Pursue their careers in Research and Development towards an advanced degree in Chemical engineering and allied technical discipline.
PEO3: To become Professional Leaders in the complex work environment.

PROGRAM OUTCOMES (POs)

1. Independently carry out research/investigation and development work to solve practical problems.
2. Write and present a substantial technical report/document.
3. Demonstrate a degree of proficiency over the area as per the specialization of the program. The proficiency should be at a level higher than the requirements in the appropriate bachelor program
4. Potential to analyze solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety.
5. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
6. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Apply the knowledge of science and mathematics in the field of various chemical engineering processes to accomplish the contemporary needs of chemical and allied industries.

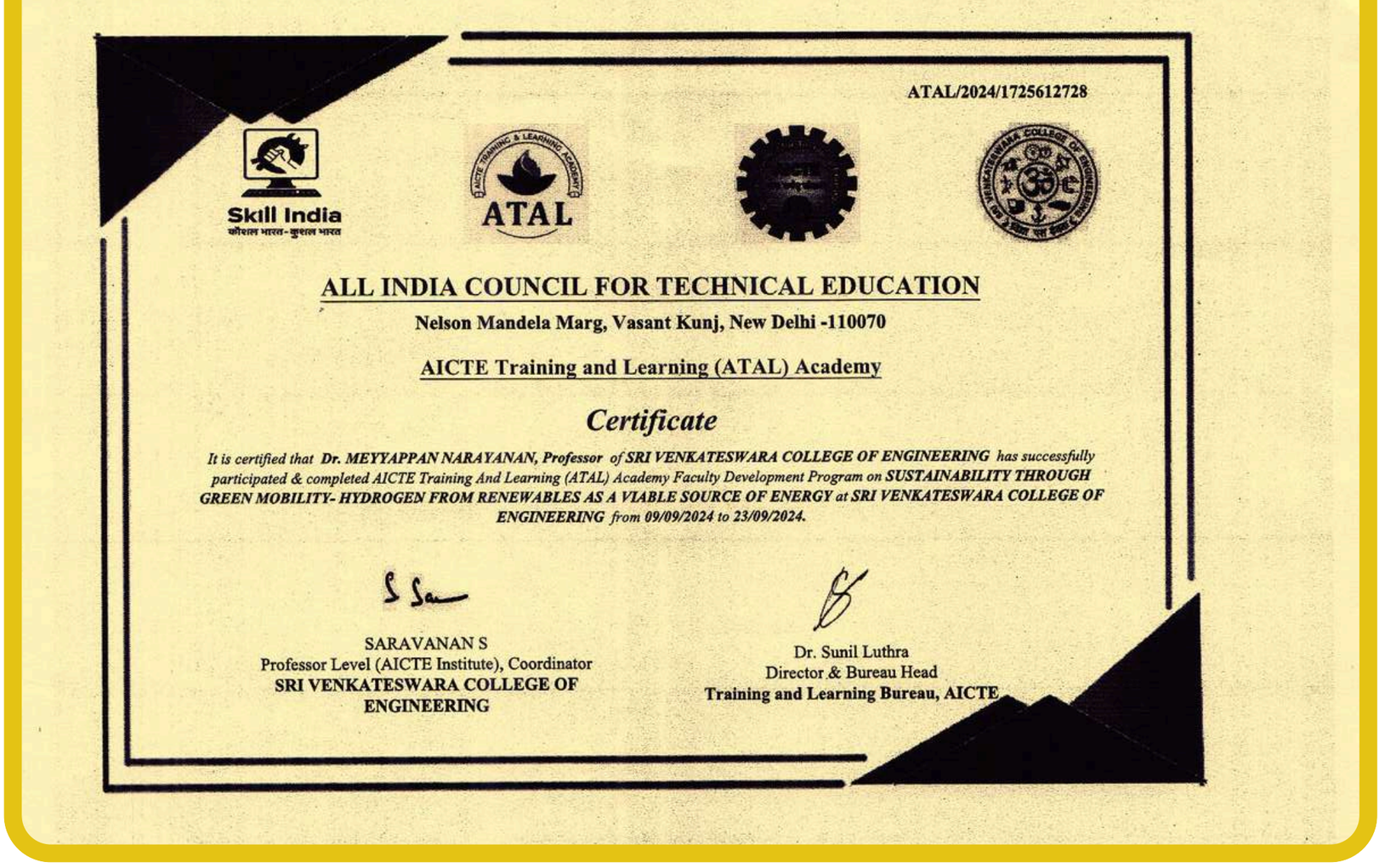
PSO2: Usage of modern engineering tools to design and conduct experiments to develop quality chemical processes by considering the cost, safety and environmental aspects.

Ph. D. CHEMICAL ENGINEERING

Ph.D. in Chemical Engineering is being offered in Chemical Engineering department since 2011. Our department has been recognized as a research center by the Centre of research, Anna University, Chennai. Our department is equipped with sophisticated facilities such as High-Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Atomic Absorption Spectroscopy (AAS), and a UV Vis spectrophotometer, pilot plant scale equipments, etc. to promote research activities. In our research centre, full time and part time reasearch scholars are pursuing their doctoral programme in Chemical Engineering.

CONTINUING EDUCATION

Dr. N. Meyyappan, Professor, Department of Chemical Engineering Participated in the ATAL Advanced FDP on Sustainability through Green Mobility - Hydrogen from Renewables as viable source of energy during 09.09.2024 - 23.09.2024. This Advanced FDP focused on the sustainable green hydrogen production and its application in IC Engines.



ATAL/2024/1725612728

Skill India
कौशल भारत-कुशल भारत

ATAL

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj, New Delhi -110070

AICTE Training and Learning (ATAL) Academy

Certificate

It is certified that ***Dr. MEYYAPPAN NARAYANAN, Professor*** *of* ***SRI VENKATESWARA COLLEGE OF ENGINEERING*** *has successfully participated & completed AICTE Training And Learning (ATAL) Academy Faculty Development Program on* ***SUSTAINABILITY THROUGH GREEN MOBILITY- HYDROGEN FROM RENEWABLES AS A VIABLE SOURCE OF ENERGY*** *at* ***SRI VENKATESWARA COLLEGE OF ENGINEERING*** *from 09/09/2024 to 23/09/2024.*

SARAVANAN S
Professor Level (AICTE Institute), Coordinator
SRI VENKATESWARA COLLEGE OF ENGINEERING

Dr. Sunil Luthra
Director & Bureau Head
Training and Learning Bureau, AICTE

CONTINUING EDUCATION

Dr. R. Rajesh Nithyanandam, Associate professor, Department of Chemical Engineering, served as Scientific Committee member in the 3rd International Conference on Oil and Gas Technologies and Applications conducted during 10.09.2024 - 11.09.2024 (Hybrid Mode) at The Klagan Regency, Sabah, Malaysia.

Dr. N. Meyyappan, Professor, Department of Chemical Engineering attended the Technology Transfer Workshop on 11.09.24 featuring Ms. Mahalakshmi, Executive Officer, Confederation of Indian Industry (CII), to explore the possibilities of technology transfer and commercialization from laboratory to industry.

VALUE ADDED EDUCATION

Industrial Visit

Final Year Students of Chemical Engineering underwent Industrial Visit to Ultramarine & Pigments Limited, Sipcot Industrial complex, Ranipet on 24.09.2024, accompanied with **Dr. N. P. Kavitha**, Assistant professor, SVCE

Participation in various events

Ramapriyan A of final year attended one day workshop titled "Energy Recovery from Municipal Solid Waste (MSW) Using Bio-methanation Process" on 23.09.2024, organized by Indian Institute of Technology, New Delhi in association with Central Public Health & Environmental Engineering Organisation, Ministry of Housing & Urban Affairs, Government of India.


e-certificate

IIT DELHI, 23 SEPTEMBER 2024

Department of Civil Engineering,
Indian Institute of Technology Delhi
Hauz Khas, New Delhi-110016

Central Public Health & Environmental Engineering Organisation (CPHEEO)
Ministry of Housing and Urban Affairs, Goverment of India

CERTIFICATE
OF ATTENDANCE

This is to certify that :

Ramapriyan Avoodaiappan

has attended the workshop on **Energy Recovery from Municipal Solid Waste using Bio-methanation process** held at Indian Institute of Technology Delhi in association with CPHEEO on 23/09/2024.

Prof Arvind Kumar Nema
(Principal Investigator)

Prof. Sovik Das
(Co-Principal Investigator)

VALUE ADDED EDUCATION

Bhargavi T R, Vaiyapuri A N and **Naveen Ruthvick**, III year chemical engineering students participated in National level Inter-college Hackathon **GREENHACK'24** held on 19.09.2024 and 20.09.2024 organized by Department of chemical engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai.


SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
KALAVAKKAM-603110
DEPARTMENT OF CHEMICAL ENGINEERING
GREENHACK'24
CERTIFICATE OF APPRECIATION
This is to certify that T.R. BHARGAVI of SVCE has participated in the National level Inter-college Hackatho GREENHACK'24 held on 19 & 20th September 2024 organized by Department of Chemic Engineering, Sri Sivasubramaniya Nadar College of Engineering, Tamil Nadu, India.
Dr.B.Senthil Rathi (Convener) Dr.B.Chitra (Convener) Dr.D.Balaji (Convener) Dr.Saroj Kumar Pan (Convener)
Dr.K.Sathish Kumar Dr.V.E.Annamalai


SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
KALAVAKKAM-603110
DEPARTMENT OF CHEMICAL ENGINEERING
GREENHACK'24
CERTIFICATE OF APPRECIATION
This is to certify that NAVEEN RUTHVICK of SVCE has participated in the National level Inter-college Hackatho GREENHACK'24 held on 19 & 20th September 2024 organized by Department of Chemic Engineering, Sri Sivasubramaniya Nadar College of Engineering, Tamil Nadu, India.
Dr.B.Senthil Rathi (Convener) Dr.B.Chitra (Convener) Dr.D.Balaji (Convener) Dr.Saroj Kumar Pan (Convener)
Dr.K.Sathish Kumar (Head of Department) Dr.V.E.Annamalai (Principal)


SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
KALAVAKKAM-603110
DEPARTMENT OF CHEMICAL ENGINEERING
GREENHACK'24
CERTIFICATE OF APPRECIATION
This is to certify that VAIYAPURI.AN of SVCE has participated in the National level Inter-college Hackathon GREENHACK'24 held on 19 & 20th September 2024 organized by Department of Chemical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Tamil Nadu, India.
Dr.B.Senthil Rathi (Convener) Dr.B.Chitra (Convener) Dr.D.Balaji (Convener) Dr.Saroj Kumar Panda (Convener)
Dr.K.Sathish Kumar (Head of Department) Dr.V.E.Annamalai (Principal)

III Year Chemical Engineering students, **Magesh M, Nirmala Devi P, Pramodh** K S and **Prithivi S** participated in **INVENTE'24**, a National Level Tech Fest event organized by SSN College of engineering & Shiv Nadar University, Chennai.


SHIV NADAR UNIVERSITY CHENNAI
SSN
invente '24
Imagine. Create. Inspire
27th & 28th SEPTEMBER
CERTIFICATE
OF PARTICIPATION
This is to certify that
Magesh M
of Sri Venkateswara College of Engineering
has participated at the events conducted at **Invente '24** – a national level tech-fest during September 27 and 28, 2024 organized by **SSN College of Engineering** & **Shiv Nadar University Chennai,** Tamil Nadu.
Dr. Sunita Nair
Advisor Student Affairs
SSN & SNUC

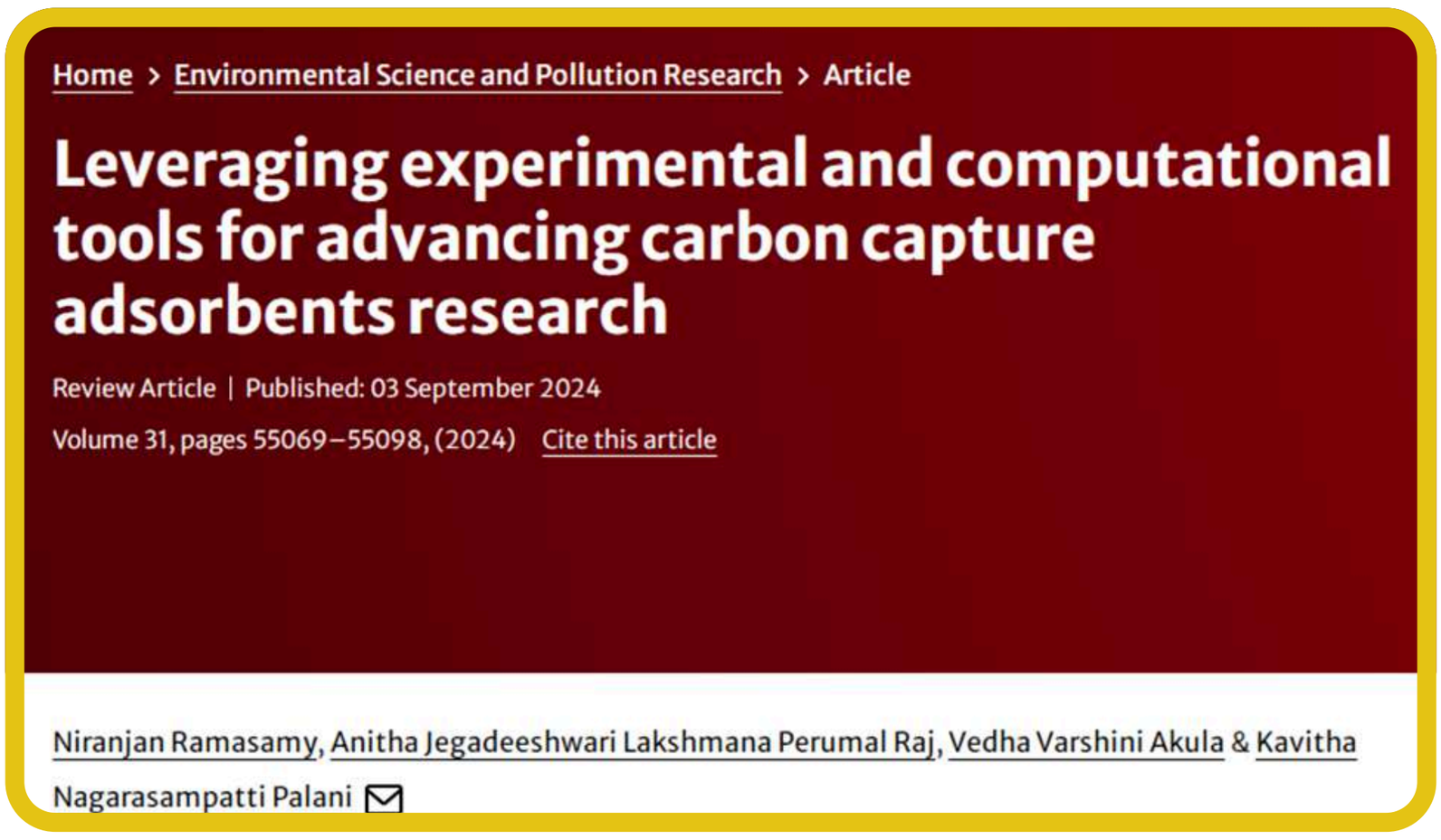

SHIV NADAR UNIVERSITY CHENNAI
SSN
invente '24
Imagine. Create. Inspire
27th & 28th SEPTEMBER
CERTIFICATE
OF PARTICIPATION
This is to certify that
Nirmala Devi P
of Sri Venkateswara College of Engineering
has participated at the events conducted at **Invente '24** – a national level tech-fest during September 27 and 28, 2024 organized by **SSN College of Engineering** & **Shiv Nadar University Chennai,** Tamil Nadu.
Dr. Sunita Nair
Advisor Student Affairs
SSN & SNUC


SHIV NADAR UNIVERSITY CHENNAI
SSN
invente '24
Imagine. Create. Inspire
27th & 28th SEPTEMBER
CERTIFICATE
OF PARTICIPATION
This is to certify that
K S Phramodh
of Sri Venkateswara College of Engineering
has participated at the events conducted at **Invente '24** – a national level tech-fest during September 27 and 28, 2024 organized by **SSN College of Engineering** & **Shiv Nadar University Chennai,** Tamil Nadu.
Dr. Sunita Nair
Advisor Student Affairs
SSN & SNUC


SHIV NADAR UNIVERSITY CHENNAI
SSN
invente '24
Imagine. Create. Inspire
27th & 28th SEPTEMBER
CERTIFICATE
OF PARTICIPATION
This is to certify that
Prithvi S
of Sri Venkateswara College of Engineering
has participated at the events conducted at **Invente '24** – a national level tech-fest during September 27 and 28, 2024 organized by **SSN College of Engineering** & **Shiv Nadar University Chennai,** Tamil Nadu.
Dr. Sunita Nair
Advisor Student Affairs
SSN & SNUC

RESEARCH OUTCOMES

Dr. N. P. Kavitha, Assistant Professor and **Ms. Vedhavarshini A**, IV Year student, Department of Chemical Engineering published a paper titled “Leveraging experimental and computational tools for advancing carbon capture adsorbents research” in the Journal, Environmental Science and Pollution Research. IImpact factor of 5.4.


Home › Environmental Science and Pollution Research › Article

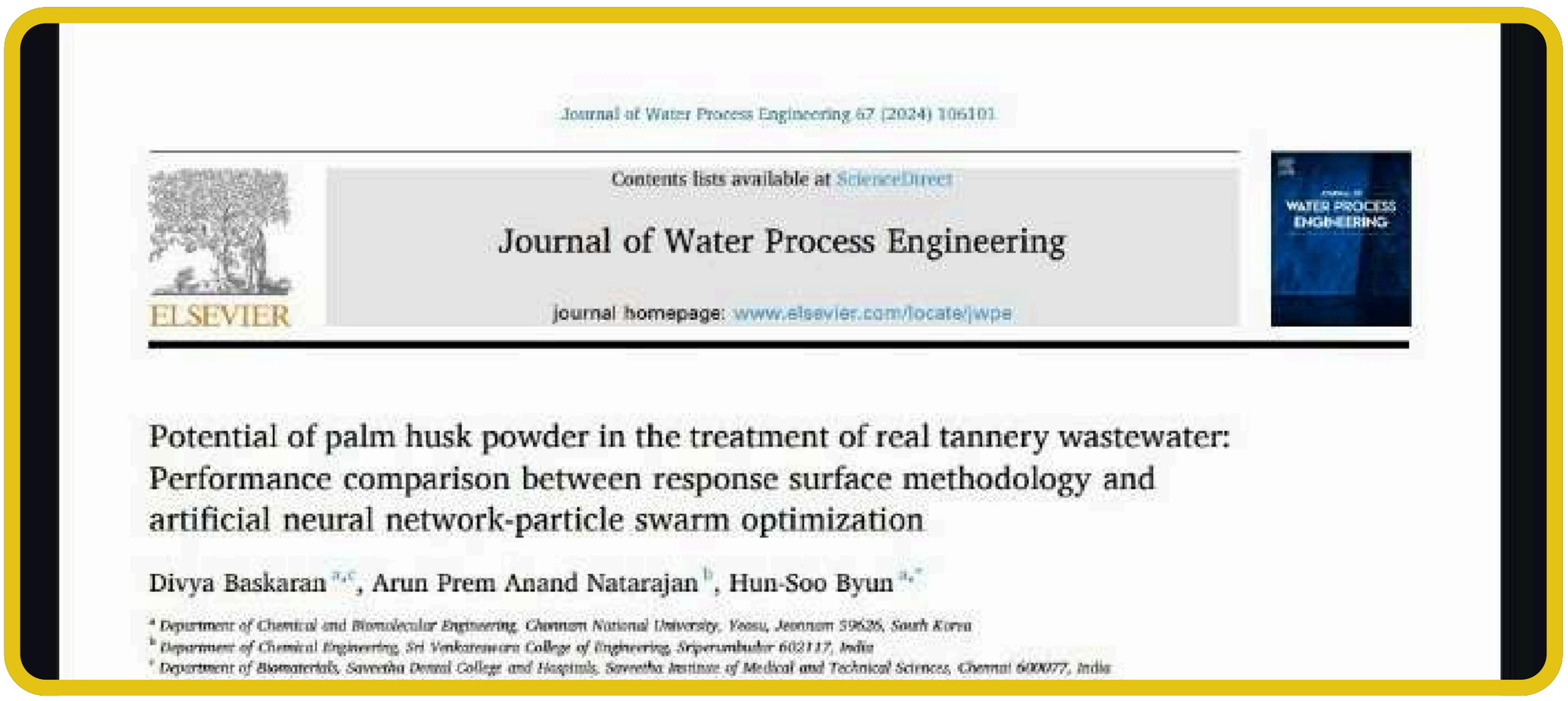
Leveraging experimental and computational tools for advancing carbon capture adsorbents research

Review Article | Published: 03 September 2024

Volume 31, pages 55069–55098, (2024) Cite this article

Niranjan Ramasamy, Anitha Jegadeeshwari Lakshmana Perumal Raj, Vedha Varshini Akula & Kavitha Nagarasampatti Palani

Mr. N. Arun Prem Anand, Assistant Professor published a journal article titled "Potential of palm husk powder in the treatment of real tannery wastewater: Performance comparison between response surface methodology and Artificial Neural Network - Particle swarm Optimization" in the Journal of Water Process Engineering, Elsevier. Impact factor - 6.3.


Journal of Water Process Engineering 67 (2024) 106101

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Journal of Water Process Engineering

journal homepage: www.elsevier.com/locate/jwpe

Potential of palm husk powder in the treatment of real tannery wastewater: Performance comparison between response surface methodology and artificial neural network-particle swarm optimization

Divya Baskaran [a,c], Arun Prem Anand Natarajan [b], Hun-Soo Byun [a,*]

[a] Department of Chemical and Biomolecular Engineering, Chonnam National University, Yeosu, Jeonnam 59626, South Korea
[b] Department of Chemical Engineering, Sri Venkateswara College of Engineering, Sriperumbudur 602117, India
[c] Department of Biomaterials, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Chennai 600077, India

RESEARCH OUTCOMES

Participation in SCHEMCON‘24

SCHEMCON‘24 held on 20.09.2024 and 21.09.2024, Rajiv Gandhi Institute of Petroleum Technology, Amethi, Uttar Pradesh showcased an impressive array of student participation, highlighting their engagement and contributions to various fields of study. Thirteen II year students of Department of Chemical Engineering, Sri Venkateswara College of Engineering participated in Oral and Poster presentations.

Artana C R and **Bhala Sundaraesan** from II Year Chemical Engineering students presented a paper in SCHEMCON’24 titled “Bio-Based Energy Innovations: Bio-energy and Bio fuels” under the guidance of **Mr. S. Jai Ganesh,** Assistant professor, Department of Chemical Engineering, Sri Venkateswara College of Engineering.

Nandhabalan T and **Madhavan R**, II Year Chemical Engineering students presented a paper in SCHEMCON’24 titled "Energy Transition and Renewable Energy Technologies” under the guidance of **Dr. D. Sivakumar**, Assistant Professor, Department of Chemical Engineering, Sri Venkateswara College of Engineering.

RESEARCH OUTCOMES

Madhavan S and **Shreya Crescentia V**, II Year Chemical Engineering students presented a paper in SCHEMCON'24 titled "Green Separation and Purification Technology" under the guidance of **Dr. N. P. Kavitha**, Assistant Professor, Department of Chemical Engineering, Sri Venkateswara of College of Engineering.

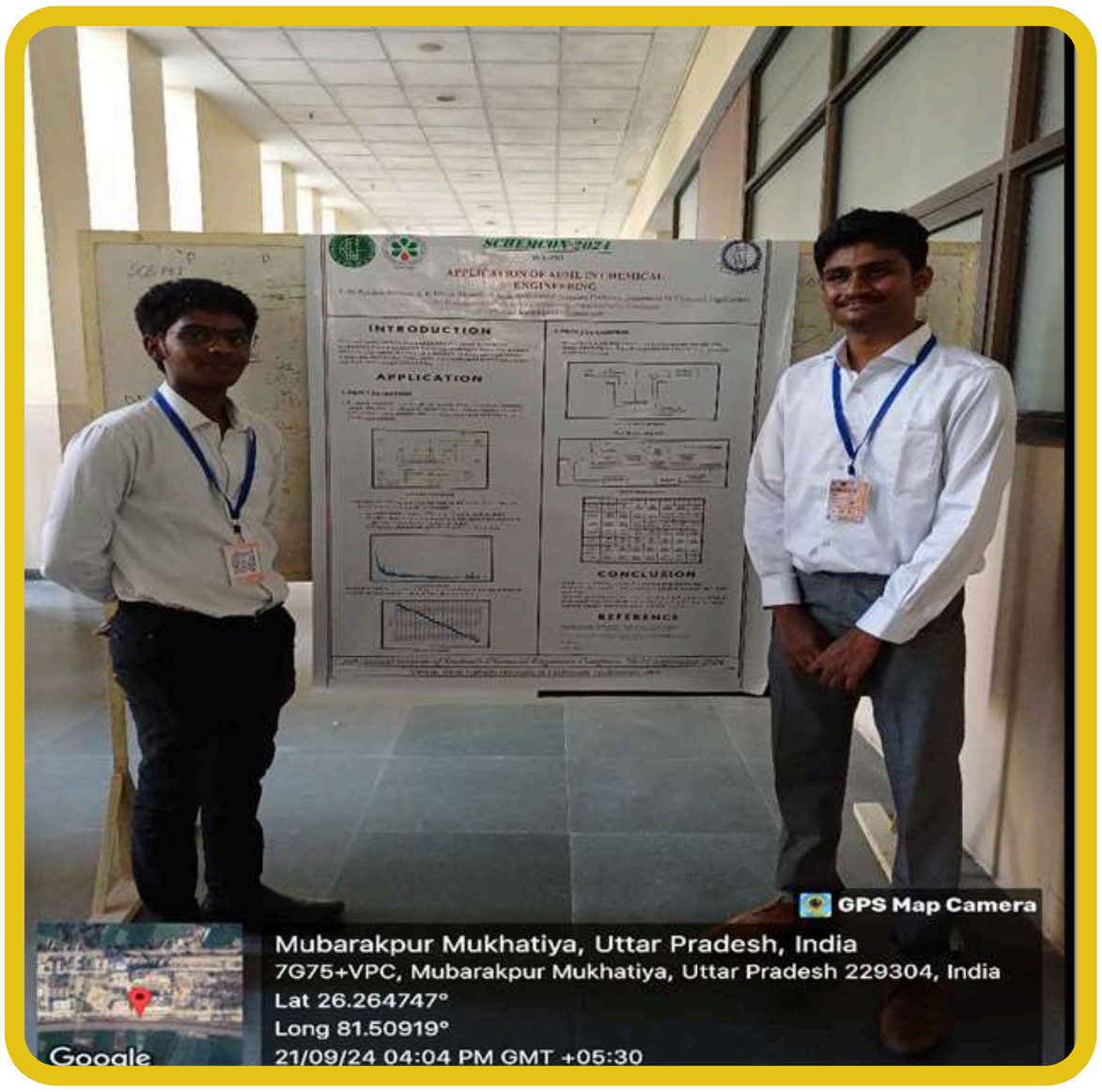
Jai Karthik Ayyanar and **Dhiraj K**, II Year Chemical Engineering students presented a paper in SCHEMCON'24 titled "Smart Chemical Engineering: Application of IoT, in Data Analytics, AI/ ML" under the guidance of **Mr. N. Arun Prem Anand**, Assistant Professor, Department of Chemical Engineering, Sri Venkateswara College of Engineering.

Srishta M J and **Tharun P**, II Year Chemical Engineering students presented a paper in SCHEMCON'24 titled "Advances in Material Science and Engineering" under the guidance of **Dr. N. P. Kavitha,** Assistant Professor, Department of Chemical Engineering, Sri Venkateswara College of Engineering.

Sakthi S and **Pranav Kumar S**, II Year Chemical Engineering students presented a paper in SCHEMCON'24 titled "Chemical Engineering in Health Care" under the guidance of **Dr. D. Sivakumar**, Assistant Professor, Department of Chemical Engineering, Sri Venkateswara College of Engineering.

OUTLINE OF ACHIEVEMENTS

Dhiraj K and **Jai Karthik Ayyanar,** II Year Chemical Engineering Students secured the **2nd runner-up** for their review paper titled "Smart Chemical Engineering: Application of IoT, in Data Analytics, AI/ ML" presented at SCHEMCON 2024 organized by Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Uttar Pradesh.



Madhavan S and **Shreya Crescentia V**, II Year Chemical Engineering Students secured the **2nd runner-up** for their review paper titled "Green Separation and Purification Technology" presented at SCHEMCON 2024 organized by Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Uttar Pradesh.

OUTLINE OF ACHIEVEMENTS

Placement Activities

Mr. Sridhar S, IV Year Chemical Engineering student, received a placement offer from MOVIDU technologies Private Limited through the campus placement drive. Wishing him great success in his future endeavours.

Teachers' Day Activities

Dr. G. Sudha, Associate Professor, Department of Chemical Engineering, won **First Place** in Drawing Competition conducted during the Teachers' Day Celebrations held at Sri Venkateswara College of Engineering on 05.09.2024.

CO-CURRICULAR ACTIVITIES

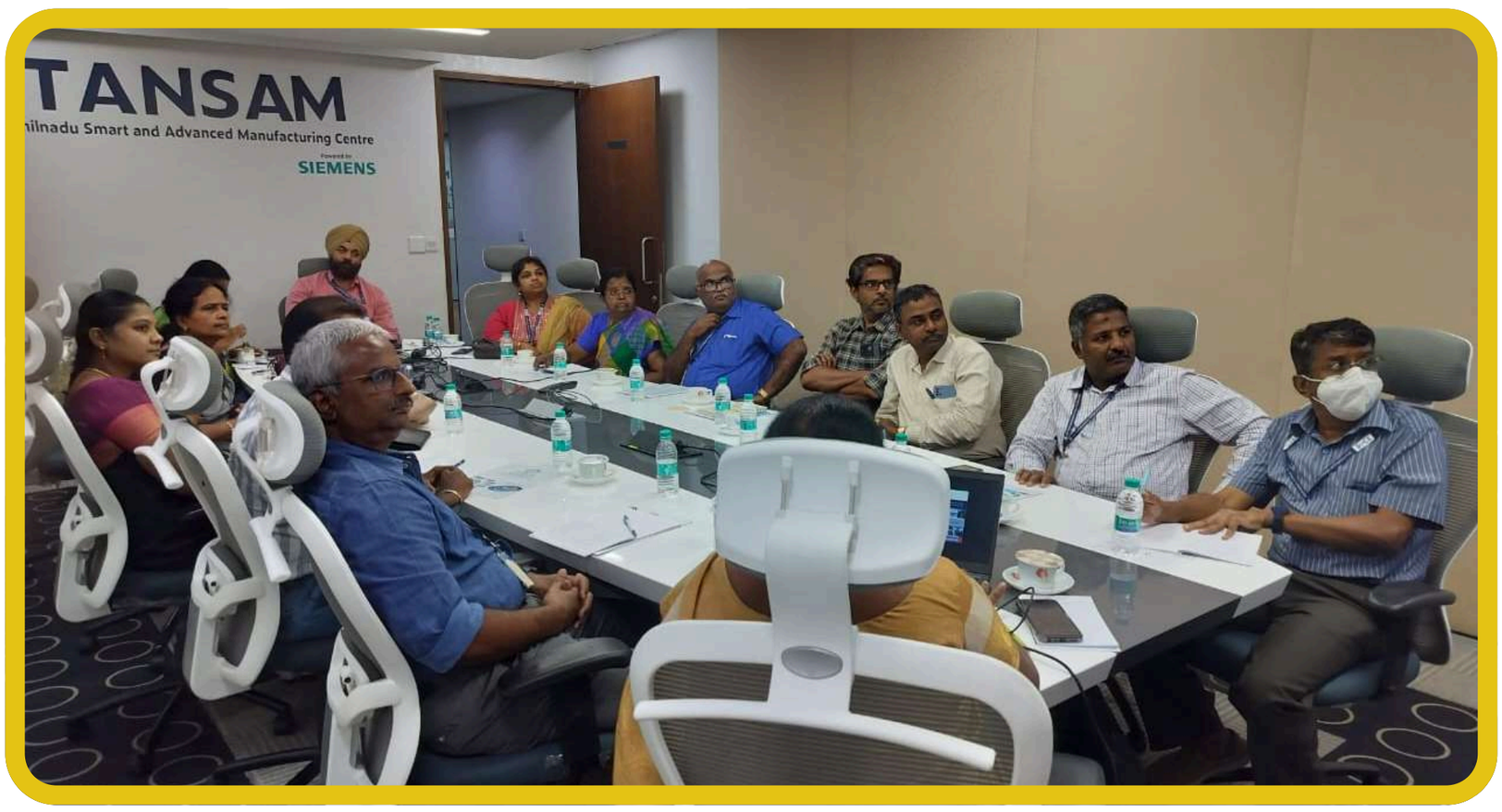
Board of Studies

The Board of Studies (BOS) for the Faculty of Technology was successfully conducted on 27.09.2024 at the Biotech Conference Hall, Sri Venkateswara College of Engineering. **Dr. R. Govindarasu**, Head of the Department presented the activities pertaining to chemical engineering department to the BOS members. During the BOS meeting, informative academic interactions among the BOS members were carried out, including preliminary approval for Regulation 2026.

CO-CURRICULAR ACTIVITIES

Institute - Industry Interaction

As part of the Institute-Industry Interaction initiative, the Department of Chemical Engineering is happy to share that **Dr. R Govindarasu**, Head of the Department, along with other department HODs, visited the Tamil Nadu Centre of Excellence for Advanced Manufacturing - (TANCAM) and Tamil Nadu Smart and Advance Manufacturing Centre of Excellence (TANSAM) at TIDEL Park, Chennai on 10.09.2024. The visit aimed to explore potential collaborations with TANCAM and TANSAM to carryout research activities. This initiative will open doors for enhanced industry interactions, providing our students and faculty members access to cutting-edge advancements in the Industrial sector and Industry 4.0 aligning with UN - SDGs.



CO-CURRICULAR ACTIVITIES

Parents - Teacher Meet

The Parents - Teachers Meeting (PTM) for senior students held on 14.09.2024, provided an opportunity for faculty, students, and parents to come together and discuss the academic progress, personal development, and future goals of the students. The meeting included presentations on the curriculum, ongoing research projects, and upcoming industrial collaborations, review of students performance and attendance. Faculty Advisors discussed the individual student progress and areas for improvement, while parents were encouraged to provide feedback and engage in open discussions about the challenges and aspirations of their wards. PTM concluded with the address by **Dr. R Govindarasu**, Head of the Department, Chemical Engineering. During his address, he elaborated the academic requirements and importance of discipline during the course of study.

EXTRA CURRICULAR ACTIVITIES

Mr. Vishwajit S, I year Chemical Engineering student won **I place** in the Chess Tournament organized by Saveetha Engineering College – Anna University Zone II Tournament 2024-25, held on 29.9.2024.

Mr. Manikandan D, IV Year Chemical Engineering student and **Mr. Vignesh S**, III Year Chemical Engineering participated in Cricket Tournament and won **III Place** organized by Sri Venkateswara College of Engineering - Anna University Zone II Tournament 2024-25, held during 18.09.2024 and 25.09.2024.

INTERACTION WITH ALUMNI

Antony David (2010-2014 Batch)
Senior Process Engineering
Integrated Asset Management
L&T Technology Services
Chennai.

Dear Juniors,

It brings me to a lane of beautiful memories as I pen this message with immense joy for all the upcoming chemical engineers of my Chemical Engineering department. Over ten years of life experience since my graduation from SVCE in 2014 has taught me some crucial yet valuable lessons. First, never hesitate or decline your first job offer, even if it may not align perfectly with your core domain or interests, as career progression often takes unexpected and beneficial turns. A late start does not mean a poor outcome—remember, both profession and life are marathon races, so aim to finish yours in a grand way and with your own unique style. It's entirely natural not to have a clear vision in the early stages of your career; what matters is your passion, hard work, and resilience. The dots will eventually connect and reveal a clearer path in five to ten years. Be flexible and open to learning new skills beyond your core domain to stay aligned with market trends. Smart work is as crucial as hard work. As you move up the corporate ladder, remember that communication, interpersonal, and management skills are as valuable as technical expertise. Skills in project management, finance, administration, quality management, and other non-technical areas will give you an advantage. Fields like Process Equipment Design, Advanced Process Control, Process Safety, Process Simulation, and CFD offer excellent career opportunities, as do emerging fields such as Sustainability, Energy, Total Quality Management, Marketing & Strategy, and Data Analytics—explore and find your passion! The state-of-the-art labs in our department are world-class, setting us apart from counterparts and making us industry-ready. Many top universities, both in India and abroad, lack facilities as advanced as ours. Take advantage of this opportunity to learn deeply, as these moments will never return. I wholeheartedly wish my upcoming chemical engineers of SVCE all the very best. See you all soon!

GLANCE TO INFRASTRUCTURE

The Chemical Reaction Engineering Laboratory is well equipped with Continuous Stirred tank reactors, Plug flow reactors, batch reactor and semi-batch reactors to conduct kinetic and residence time distribution studies. A recent addition to this laboratory is a sono-chemical reactor. A probe-type sonochemical reactor is a specialized setup used to enhance chemical reactions through the application of ultrasonic waves. These reactors employ a probe, often called a horn or sonotrode, that is immersed in the reaction medium and generates ultrasonic waves at high frequencies, typically between 20 kHz and 1 MHz.

The ultrasonic waves create rapid cycles of compression and rarefaction in the liquid, causing cavitation, or the formation and collapse of microbubbles. This phenomenon generates intense local energy, leading to extreme conditions of temperature and pressure in micro-regions, which can accelerate or even enable certain chemical reactions. Sono-chemical reactor finds applications in various fields like organic synthesis, Nanoparticle synthesis, Environmental remediation, material processing. The distinctive advantages of sono-chemical reactors are high efficiency energy transfer and increased reaction rates. Recent sonochemical advancements include enhanced wastewater treatment with up to 90% pollutant degradation using hybrid methods, and efficient nanoparticle synthesis with tailored properties for catalysis and drug delivery, reduced reaction times in Green chemistry applications.

EDITORIAL LEADS

Dr. R Govindarasu
Head of The Department
Department of Chemical Engineering

Mr. N Arun Prem Anand
Assistant Professor
Department of Chemical Engineering

STUDENTS EDITORIAL TEAM

Mr.Vaiyapuri A N
III / CHE

Mr. Tharun P
II / CHE

Ms. Srishta M J
II / CHE

ABOUT US

www.svce.ac.in/departments/Chemical Engineering

Chemical Engineering SVCE

svce.chemical

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