Sri Venkateswara College of Engineering

DEPARTMENT OF CHEMICAL ENGINEERING

NEWSLETTER

THE CATALYST

ACCELERATING YOUR GROWTH

Volume - 2, Issue - X, October, 2023

Sri Venkateswara College of Engineering

Newsletter

The Catalyst

(Accelerating your Growth rate)

Department of Chemical Engineering

Vision

To be a leader in Chemical Engineering Education and Research by providing balanced learning and fostering research to enable the learners to meet the challenges of process industries and societal needs.

Mission

M1: To produce graduates practicing Chemical Engineering professionally and ethically.

M2: To produce Chemical Engineering graduates contributing to the betterment of society in the competitive global environment.

M3: To focus on the development of Chemical Engineers to foster innovation through proficiency and effective communication.

Motivation: Alumni page

Proud Alumnus:
Mr. Balakumaran S J
B.Tech Chemical Engineering (2015-2019)
PhD Scholar,
VIT,
India.

The four years that I spent at SVCE is a golden period in my life that I cherish often.

The mesmerizing greenery on campus makes our minds calm. The first thing that makes me wonder is the huge labs in our department. When are we going to use these instruments?

The molding process that I underwent was taken care of by passionate Professors. The faculty member's dedication to making us a complete Chemical Engineer is astonishing. Their encouragement towards co-curricular activities such as external projects, paper presentations, internship and so on were excellent; they are ready to guide us anytime.

The lab classes had filled with so much fun as we tested our theories there, and I enjoyed my time in the lab. The 2K17 Pansophy stays close to my heart; it showed how a whole department works as a team and creates an evergreen memory.

The final year of SVCE was awesome, and I was able to choose my path in the right manner. The strong foundation that was laid by SVCE gives me utter confidence that I can build any strong castle over it.

Industrial Visit: *Learning beyond classroom*

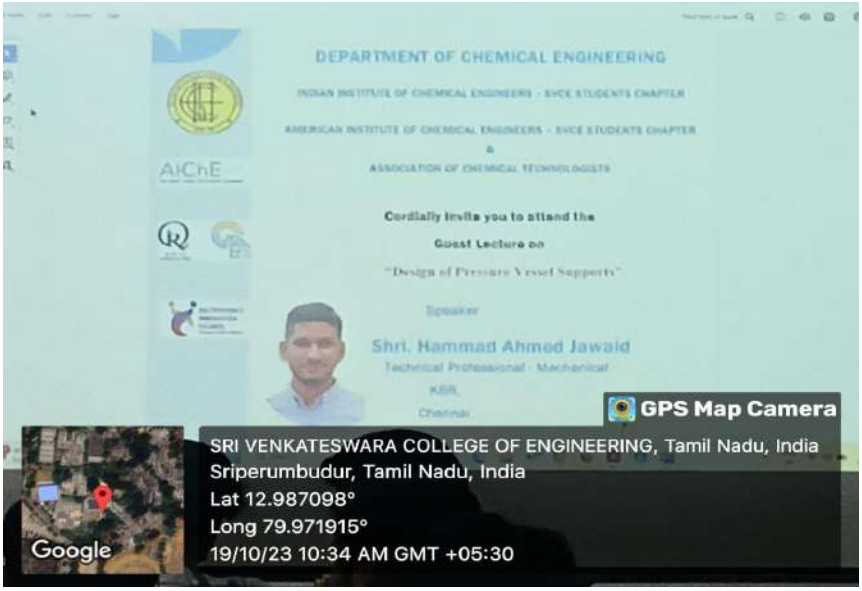
On 27th October 2023, final year of B.Tech Chemical engineering students had an industrial visit to M/s. Thirumalai Chemicals Limited, Ranipet, Tamil Nadu.

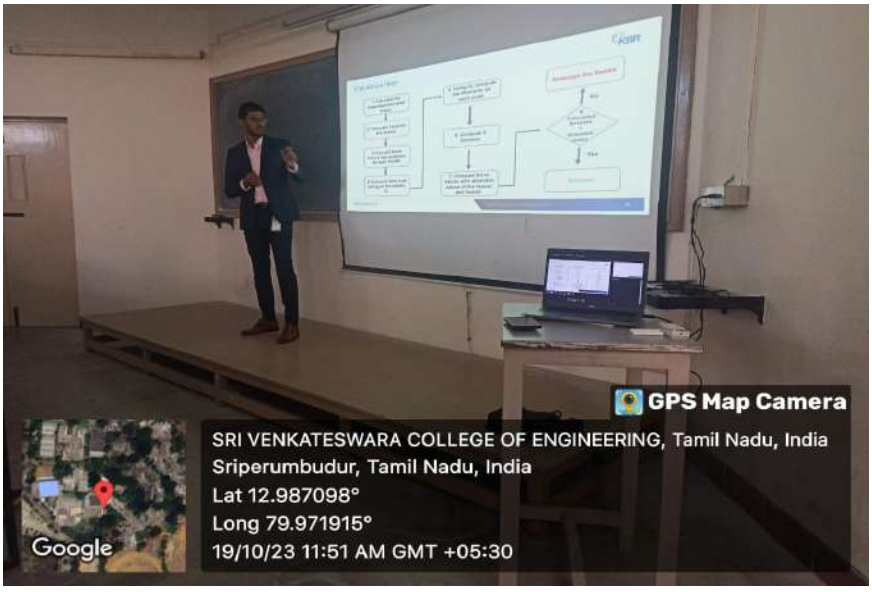
IIChE - AIChE ACT Student Chapter: Guest Lecture

On 06th October, a Guest lecture was conducted to emphasize the "Time Management to Chemical Engineering graduates - An Industrial perspective" for II, and IV year of B.Tech Chemical Engineering students. Shri Uma Srikanth, Chief Technical Officer, Sim Info systems, Chennai, has shared his valuable insights, as Industrial practitioner and as an alumni parent.

IIChE - AIChE ACT Student Chapter: Guest Lecture

On 19th October 2023, a Guest lecture was conducted to teach "Design of Pressure Vessel Supports" for IV year of B.Tech Chemical Engineering students. Shri Hammed Ahmed, Technical - Mechanical, KBR, Chennai, has taught a topic in CH18604, Process Equipment Design - II, as Industrial expert on the topic.



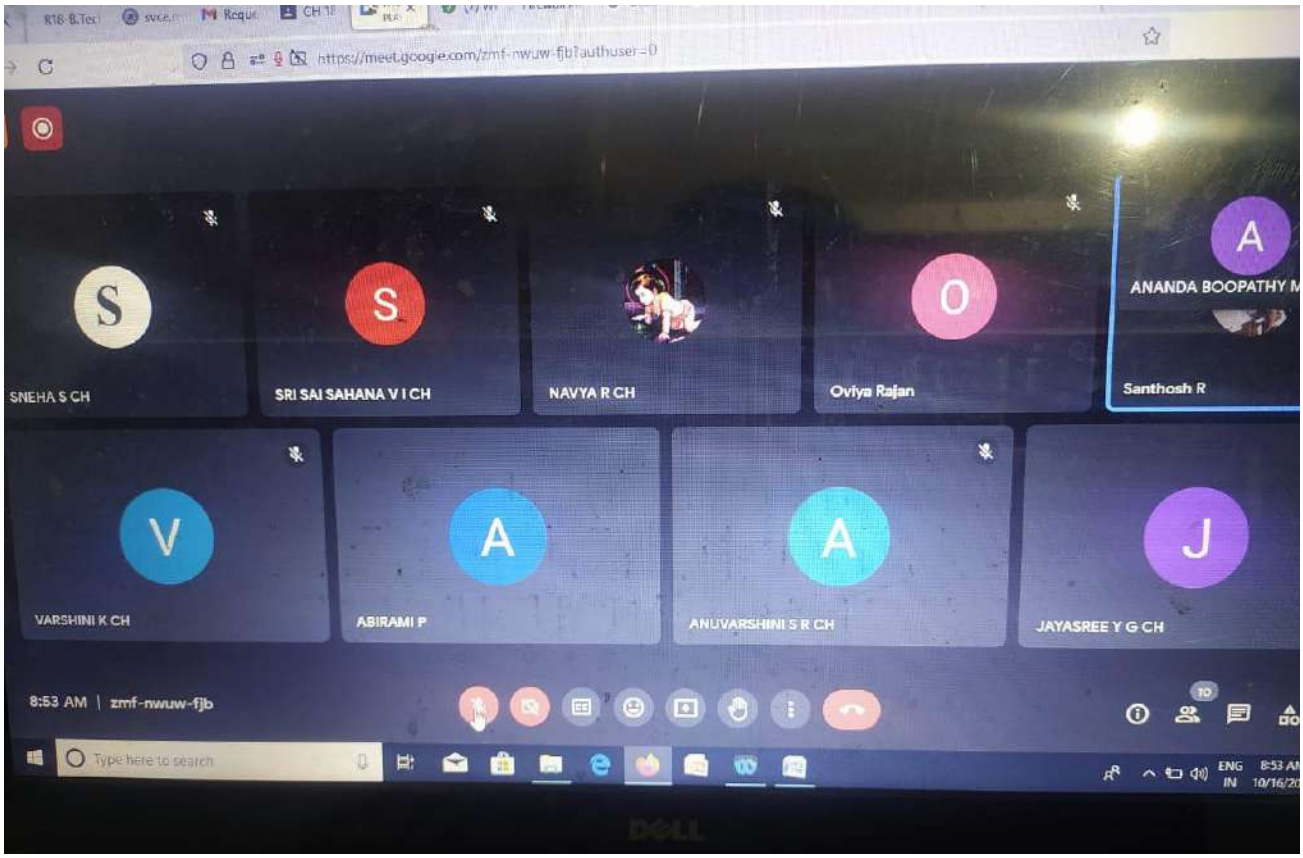


IIChE - AIChE ACT Student Chapter: Guest Lecture

On 31st October 2023, a Guest lecture was conducted to create awareness on "Chemical Engineering - Past, Present & Future" for Ist & IInd year of B.Tech Chemical Engineering students. Shri NL VR Sevugan Chettiar, Former Environmental Engineer, New York State Environmental Conservation Department, USA.

Candid talk with Alumini - Interview preparedness

On 16th October 2023, Ms.Abirami, and Mr. Sathish, our Alumns, has shared the insights of techniques for preparing/attending the interview, especially for EPC companies, includes M/s. Technip, Chennai. The discussion had made huge impact on number of students shortlisted for interview.

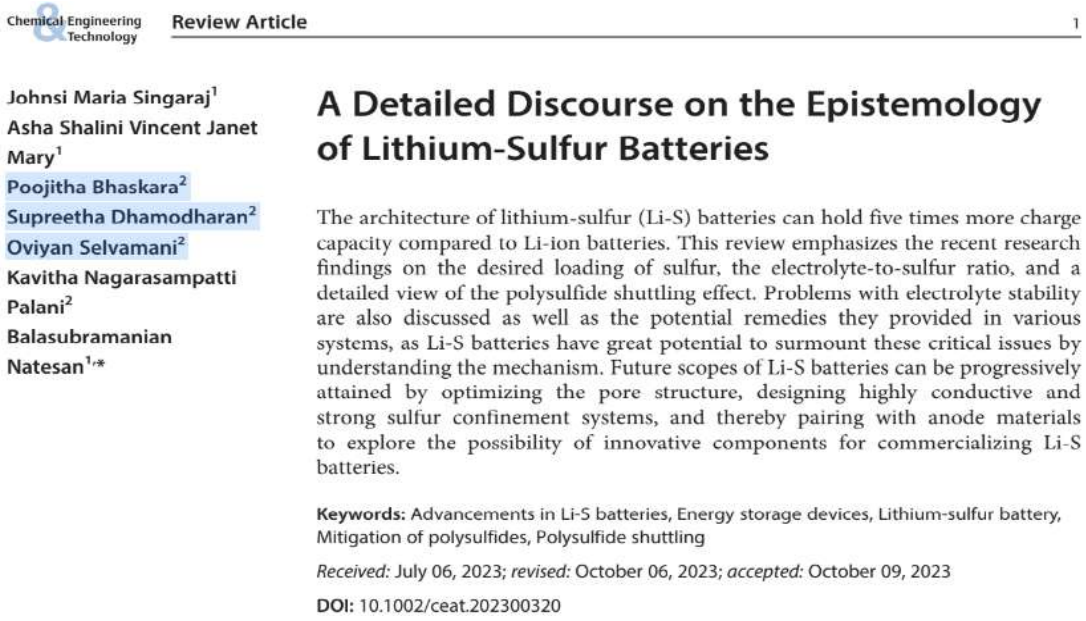


5S: External Review: *Red Tag implementation*

A review-II on 5S-SEIRI TAG implementation in all the laboratories of Chemical Engineering Department by Shri. M.G.Murali, Sr.Consultant-5S/TPM.(Sundaram Clayton-Retd.) was conducted on 26th October 2023.

Journal Publication: *Accomplishment.*

The Student team of B.Tech Chemical Engineering Students of 2019-2023 batch, Ms. Poojitha Bhaskara, Ms. Supreetha Dhamodharan and Mr. Oviyan Selvamani and Dr. N.P. Kavitha, Assistant Professor, has co authored a paper published in "Chemical Engineering & Technology".



Chemical Engineering & Technology Review Article 1

Johnsi Maria Singaraj[1]
Asha Shalini Vincent Janet Mary[1]
Poojitha Bhaskara[2]
Supreetha Dhamodharan[2]
Oviyan Selvamani[2]
Kavitha Nagarasampatti Palani[2]
Balasubramanian Natesan[1,*]

A Detailed Discourse on the Epistemology of Lithium-Sulfur Batteries

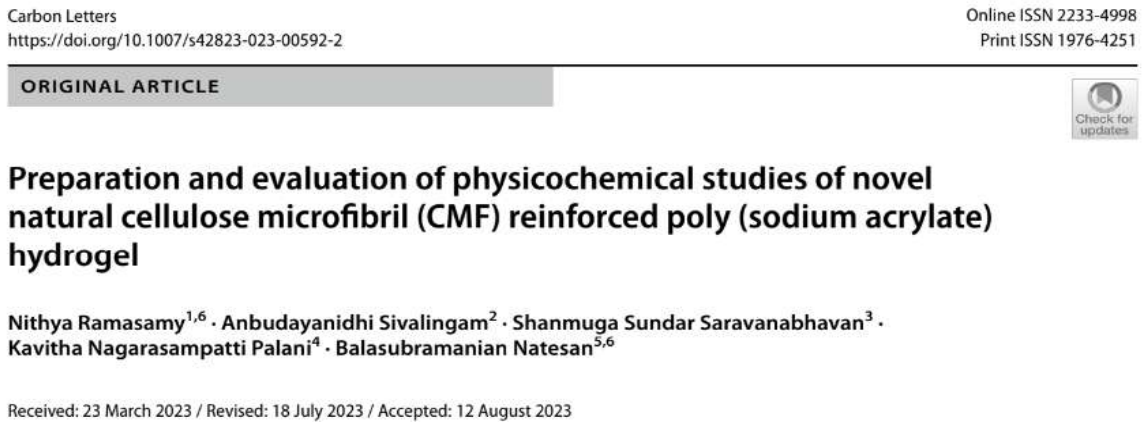
The architecture of lithium-sulfur (Li-S) batteries can hold five times more charge capacity compared to Li-ion batteries. This review emphasizes the recent research findings on the desired loading of sulfur, the electrolyte-to-sulfur ratio, and a detailed view of the polysulfide shuttling effect. Problems with electrolyte stability are also discussed as well as the potential remedies they provided in various systems, as Li-S batteries have great potential to surmount these critical issues by understanding the mechanism. Future scopes of Li-S batteries can be progressively attained by optimizing the pore structure, designing highly conductive and strong sulfur confinement systems, and thereby pairing with anode materials to explore the possibility of innovative components for commercializing Li-S batteries.

Keywords: Advancements in Li-S batteries, Energy storage devices, Lithium-sulfur battery, Mitigation of polysulfides, Polysulfide shuttling

Received: July 06, 2023; *revised:* October 06, 2023; *accepted:* October 09, 2023

DOI: 10.1002/ceat.202300320

Also, Dr. N.P. Kavitha has recorded her paper acceptance and publication in "Carbon Letters",



Carbon Letters
https://doi.org/10.1007/s42823-023-00592-2

Online ISSN 2233-4998
Print ISSN 1976-4251

ORIGINAL ARTICLE

Preparation and evaluation of physicochemical studies of novel natural cellulose microfibril (CMF) reinforced poly (sodium acrylate) hydrogel

Nithya Ramasamy[1,6] · Anbudayanidhi Sivalingam[2] · Shanmuga Sundar Saravanabhavan[3] · Kavitha Nagarasampatti Palani[4] · Balasubramanian Natesan[5,6]

Received: 23 March 2023 / Revised: 18 July 2023 / Accepted: 12 August 2023

Home > International Journal of Environmental Science and Technology > Article

Experimental studies of tannery wastewater treatment by combined electrocoagulation and ultrasonication processes using response surface methodology optimization

Original Paper | Published: 24 October 2023 | (2023)

P. Abirami, V. Selvaraj, S. Mithran, M. Asmi, M. Narayanan & P. Ramasamy

The Student team of B.Tech Chemical Engineering Students of 2018-2022 batch, Ms. P.Abirami, Mr. V.Selvaraj, Mr. S. Mithran, Mr. M.Asmi and Dr. N. Meyyappan, Professor & HOD and Dr. R. Palani, Associate Professor, have authored a paper and published in "International Journal of Environmental Science and Technology".

Co - Curricular activities: *Paper presentation*

On 27th October 2023, two group of students of third year B.Tech Chemical Engineering led by Ms. Saranya and Ms. Vani team has won runner up in paper presentation event "Diffusa 2023", held at Rajalakshmi Engineering College. The team was mentored by Ms. A.C. Vijaya Lakshmi, Assistant Professor.

On 27th October 2023, Ms. Sneha S. of final year B.Tech Chemical Engineering has presented during a paper presentation event "Chem Summit 2023", held at VIT, vellore. The student was mentored by Dr. M. Srividhya, Assistant Professor.

Certificate no: 85

VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

IIChE VIT

CERTIFICATE OF PARTICIPATION

This certificate is granted to

Ms. Sneha S from Sri Venkateswara College of Engineering for participating in the event paper presentation (panel-2) at the conference -Chem Summit'23, organized by the "School of Chemical Engineering" in association with IIChE-VIT on 27th - 28th October 2023.

Dr. K Sivagami	Dr. S Velu	Prof. L Muruganandam
FACULTY CO-ORDINATOR, IIChE-VIT	HOD, SCHOOL OF CHEMICAL ENGINEERING	DEAN, SCHOOL OF CHEMICAL ENGINEERING

VIT - A place to learn; A chance to grow

Campus Placements: Achievements

The decorated "Wall of Names" of fourth year students of B.Tech Chemical Engineering have reported for securing placements, in the following organizations.

Programmes run by the Department of Chemical Engineering are,

- **B.Tech Chemical Engineering**
- **M.Tech Chemical Engineering**
- **Ph.D**

B.Tech CHEMICAL Engineering

Programme Educational Objectives

PEO1: Equip students with the necessary skills and knowledge to prosper in their career in Chemical Engineering and related domains.

PEO2: Encourage students to Pursue advanced learning and engage in research with internationally acclaimed institutions and foster professional growth.

PEO3:Empower students with leadership qualities to succeed in diversified fields with ethical administrative acumen and adapt to the rapid technological advancements and innovations.

Programme Outcomes

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: 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.

PO4: 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.

PO5: 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.

PO6: 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.

PO7: 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.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

P10: 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.

P11: 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.

PO12: 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.

PROGRAMME SPECIFIC OUTCOME's

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

PSO2: 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

***Programme* Educational Objectives**

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.

Programme Outcomes

PO1: Independently carry out research /investigation and development work to solve practical problems.

PO2: Write and present a substantial technical report/document.

PO3: 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

PO4: 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.

PO5: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO6: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PROGRAMME SPECIFIC OUTCOME's

PSO1: Apply the knowledge of science and mathematics in the field of various transport 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.

Editorial Team: Dr. N. Meyyappan, HOD/CHE & Mr. S. Jai Ganesh, AP/CHE.