Sri Venkateswara College of Engineering

DEPARTMENT OF CHEMICAL ENGINEERING

NEWSLETTER

THE CATALYST

ACCELERATING YOUR GROWTH

Volume - 2, Issue - XII, December, 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

Shmt. Anjana Jayashri Murali Krishnan,

Batch 2014 - 2018.
B.Tech Chemical Engineering.
Ex-Vedanta,
M.Sc in Safety Engineering ,
Texas A & M University.

Hey Dear Young Blooming Chemical Engineers ,

You are not just going to deal with chemicals but work for big companies, and some might own a few in the future.

I remember taking Chemical Engineering because Chemistry was my first Love, but I ended up loving the combination of physics, chemistry, and mathematics being brought up together as the main dish called Chemical Engineering.

Trevor Kletz rightly told " Try to change situations, not people". Let's work towards more innovation and make the world a better place with all our Chemical Engineering knowledge, but with a good amount of sustainability as well.

To share something we all forget and the quote from my Professor once told me which makes me feel proud even today is "Morning toothpaste lendhu night good night liquid varaikum it's us The Chemical Engineers" who rule the world.

So, there is a huge big world outside to explore when you are a Chemical engineer. Do it with whatever you can in the safest way possible.

Joy of Reunion: 1994 - 1998: *25th Year: B.Tech-Chemical Engg*

On 15th December 2023, First batch of B.Tech Chemical Engineering (1994-1998) alumni are honored in a 25th year, Reunion at Sri Venkateswara College of Engineering.

SVCE - IIChE Student Chapter: *STAR Performer*

On 27th December 2023, at Indian Chemical Engineering Congress (CHEMCON-2023), Kolkata, IIChE adjudged "Sri Venkateswara College of Engineering" as 1st Prize in Ambuja's Best Student Chapter, among 150 other student chapters across India.

Ambuja's Best Student Chapter Award – 1st Prize 2023

First year - Parent Teacher Meeting - *A Day to appraise.*

Parents were appraised about their ward who are in their second semester, on 23rd December 2023 about their academic performance, attendance, assessment performance and lack of discipline(if any).

Journal Publication: Faculty *& Students*.

Dr. R. Rajesh @ Nithyanandam, Associate Professor, coauthored a paper and published in the Journal "Current Nanoscience", (IF:1.513), Bentham Science Publishers.

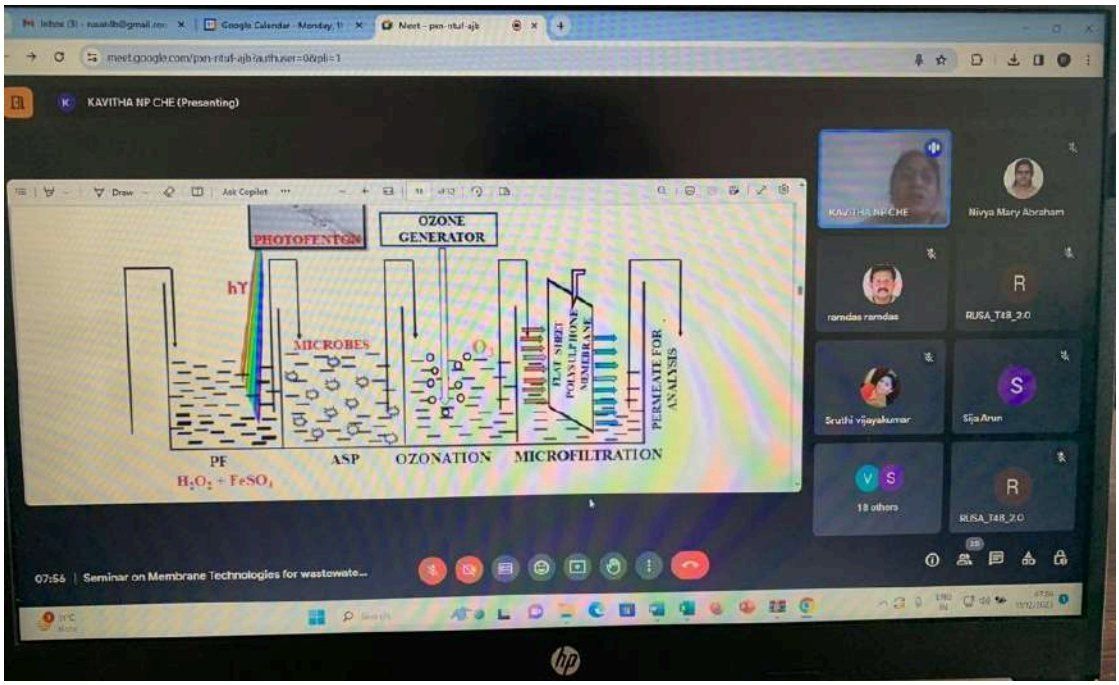
Abstract

Industries release a significant amount of wastewater contaminated with heavy metals. It is a major cause of pollution and a potential health hazard when discharged into the environment without treatment. Standard adsorbents for removing heavy metals have certain limitations, like incomplete metal removal, high energy requirements, and undesirable waste generation. Therefore, the use of biosorbents is an effective alternative to conventional procedures. This critical review evaluates and summarizes the optimum results obtained from different papers covering different parameters such as biosorbent removal efficiency and their adsorption capacity, adsorbent dosage, and effect of pretreatment for removal of single and combination of heavy metals. The influence of pH, contact time, and sorbent dose on biosorption has been discussed. The Langmuir model and the Freundlich model are studied for various biosorbents, and the respective results are obtained and summarised. The pseudo-first and second-order models have been evaluated to study the sorption kinetics. Through this review, it can be concluded that biosorbents can be a promising alternative to treat industrial effluents, mainly because of their high metal binding capacity, low cost, high efficiency in diluted effluents, and environmentally friendly nature.

Keywords: biosorbents, industrial wastewater, heavy metals, toxic pollutants, water reclamation, adsorption capacity.

Faculty as Guest Speaker: *subject matter expert*.

During 11th - 12th December, Dr. N P Kavitha, Assistant Professor, has delivered an expert talk on " Introduction to MBR, Configurations, Application and Design", at Seminar, held virtually through Cochin University of Science & Technology, Cochin, Kerala.



Events participated by Faculty: *Train the trainer.*

During 18th - 22nd December 2024, Ms. A.C. Vijayalakshmi and Mr. S. Jai Ganesh, Assistant Professor, has attended a Faculty Development Program, on "Sustainability in Process Engineering", conducted virtually by MIT - World Peace University, Pune.

MIT-WPU

Certificate of Participation

This certificate is proudly awarded to

VIJAYALAKSHMI.A.C

for actively participating in the Five-Day Faculty Development Program on
'Sustainability in Process Engineering'
conducted by Dept of Chemical Engineering, Dr. Vishwanath Karad MIT World Peace University from 18-22 December 2023

Dr. Anand Kulkarni, Convener | Dr. Pratiksha Khurpade, Co-Convener | Dr. Pallavi Tatpate, Co-Convener

Dr. Ratnadip Joshi, Program Coordinator, Dept. of Chemical Engg. | Dr. Dinesh Bhutada, Program Director, Dept. of Chemical Engg. | Dr. Vikrant Gaikwad, Asso. Dean (Academics), School of Engg. & Tech | Dr. Dinesh Seth, Dean, School of Engg. & Tech

MIT-WPU

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Jai Ganesh S

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And during 11th - 15th December 2023, Mr. S. Jai Ganesh, Assistant Professor, has attended 5 days Faculty development program on "Building Advanced Data Analytics Applications with Cloud", organised by Edunet Foundation, under Next Gen Employability Program scheme, ATAL - AICTE.

EY Building a better working world

ATAL

Skill India

edunet foundation

CERTIFICATE

OF COMPLETION

This certificate is presented to

Mr. Jai Ganesh S

has successfully completed the 5 days Faculty Development Program on

Building Advanced Data Analytics Applications With Cloud

under **Next Gen Employability Program**

from **11/12/2023** to **15/12/2023.**

Nagesh Singh
Executive Director
Edunet Foundation

ID: NGEP23_17373

This certificate can be verified by scanning the QR code at https://nextgen.edunetworld.com/verify-certificate

Dr. Ramesh Unnikrishnan
Advisor-II
AICTE

Co - Curricular activities: *CHEMCON 2023*

During 27th - 30th December 2023, Mr. Arvind S & Mr. Meshanth J.P of third year B.Tech Chemical Engineering had participated in the poster presentation at IIChE - CHEMCON 2023 - a International level Chemical Congress, held at IIChE, Heritage Building, Kolkata. The team was mentored by Dr. Philip Bernstein Saynik, Assistant Professor.

Certificate

This is to certify that Prof. / Dr. / Mr. / Ms. / Mrs. Meshanth J P

has presented a paper (Oral / Poster) in IIChE-CHEMCON 2023, held at Heritage Institute of Technology, Kolkata, during 27 - 30 December 2023.

Title: Influence of pH, Temperature and Bacteria on Degradation of Iron Oxide.

Co-authored by:

Prof. Anil Kumar Saroha, President, IIChE | Dhawal Saxena, Honorary Registrar, IIChE | Dr. Avijit Ghosh, Organizing Secretary, IIChE-CHEMCON 2023

Certificate

This is to certify that Prof. / Dr. / Mr. / Ms. / Mrs. Arvind S

has presented a paper (Oral / Poster) in IIChE-CHEMCON 2023, held at Heritage Institute of Technology, Kolkata, during 27 - 30 December 2023.

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During 11th December 2023, M/s. Thirumalai Chemicals Limited, Ranipet has conducted "Energy Conservation festival" at company campus at Ranipet, where Mr. Ezhilarasan K, Ms. Samyukta, and Mr. Janakiraman of second year B.Tech Chemical Engineering had participated in the Technical paper presentation at an event named ENCON FEST 23. The team was mentored by Ms. A. C. Vijaya Lakshmi, Assistant Professor.

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.