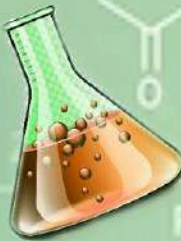
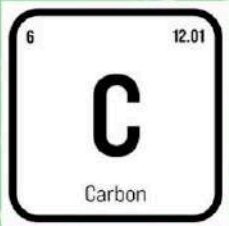


DEPARTMENT OF
CHEMICAL
ENGINEERING
NEWSLETTER

THE



CATALYST
ACCELERATING YOUR GROWTH

Volume - 3, Issue - V, May, 2024

Newsletter: E-Copy



Newsletter

The Catalyst

(Accelerating your Growth rate)

Department of Chemical Engineering

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: Drive human excellence by shaping the future of chemical engineering through groundbreaking research and innovation.

Continuous Improvement: Foster the innovative capabilities of individuals in providing solutions for the needs of the society by acquiring necessary skills and attributes.

Lifelong Support: Enable engineers to translate ideas and discoveries into equitable engineering solutions worldwide.

Motivation: Alumni page



Mr. Mantra vinayagam. G
Senior Consultant Oil & Gas
Infosys pvt Ltd.
B.Tech - Chemical Engineering
(2010 - 2014)

Chemical Engineering Future Trends Industry 4.0

We are in Era of Industrial 4.0 trend particularly chemical industries and refineries are pioneer to adopting the new trend and utilizing current technology due to the highly secured and dynamic complex process involved. Current Automation Era attaining the saturation and evolving to new concept of IIoT technology with help of Advanced infrastructure or computational support. But still industry focusing on future prediction by handling the historical massive data .

Here the AI and machine learning playing predominant role to fulfill the requirement. Few Examples use cases are centralized monitoring data servers, Asset performance management predictive or preventive maintenance, robot data collective sensor etc.... As conclusion learning AI and modern IIoT technology knowledge essential for future buddy chemical engineers..

SVCE - PATHWAYS: a road to chemical engineering

An Online event conducted on 1st May 2024, to appraise about the steps needs to be taken to pursue chemical engineering. The gathering of prospective students and stake holders were addressed by Prof.Venkata Satyanarayana, Principal, JNTUA, Andhra Pradesh. The prominent alumnus and remarkably achieved final year students have also shared their motivation, which leads to the road to chemical engineering, SVCE.

SVCE

PATHWAYS

Chemical Engineering: Catalyzing Innovation for a Better World

Scan here to Register

Dr. N. Meyyappan
Professor & HOD
Department of Chemical Engineering, SVCE

Prof. Venkata Satyanarayana Suggala M.Tech., Ph. D (IIT K)
Principal, JNTUA College of Engineering (Autonomous)
Ananthapuramu, Andhra Pradesh

Mr. Abishek Moses
(Chemical Engineering, 2004 - 2008)
Director, Hubert Enviro Care Systems (P) Ltd
Chennai

Mr. NallaPerumal AM
(Chemical Engineering, 1994 - 1998)
Scientist C, Division Head
Application Development Division
Vikram Sarabhai Space Center
ISRO, Thiruvananthapuram, Kerala

Mr. Karthik Subramaniam Pushpavanam
(Chemical Engineering, 2008 - 2012)
Assistant Professor, Chemical Engineering
Indian Institute of Technology, Gandhinagar, Gujarat

Mr. Vignesh V K
Final Year - B.Tech. Chemical Engineering

Ms. M Shrma
Final year - B.Tech. Chemical Engineering

Institute Industry Interaction: *assess academic gap*

Department of Chemical Engineering , Sri Venkateswara College of Engineering, Sriperumbudur, had organised an Institute Industry Interaction meeting at SVCE on 4th May 20224, where the wellwishers from following industries IOCL, KBR and from Elof Hanssan Group, have helped to identify the skills necessary in today's industrial environment.



Innovation Council - SVCE: *Mentor-Mentee* scheme

Mr. M. Ananda Boopathy, Assistant Professor has represented Department of Chemical Engineering, at Innovation Council of Sri Venkateswara College of Engineering organized Training and Exposure Visit at IITM Research Park & Anna University CED & AU ATAL Incubation Center, Chennai on today Under Mentor Mentee Scheme on 21st May 2024.



Short Term Training Program on “Process Modeling Simulation and Control”

Short Term Training Program on **PROCESS MODELING, SIMULATION AND CONTROL**, is conducted for six days during 23rd May to 29th May 2024 and benefited by faculty and student members of 15 near by engineering colleges which teaches control, instrumentation and chemical engineering.



Journal Publication: *peer reviewed achievement.*

Dr. N.P. Kavitha et.al., records her journal publication in the following UGC-CARE GROUP - II peer reviewed journal, during the month of May 2024.



Certificate of Publication

This is to certify that

Kavitha Nagarasampatti Palani, Assistant Professor

Department of Chemical Engineering, Sri Venkateswara College of Engineering,

Sriperumbudur, Kancheepuram, India.

Published a paper entitled

“CFD modeling of jet mixing to study the mixing performance and sludge Prevention in crude oil tanks”

Volume 26 - Issue 05- 2024

Paper ID: JUSST/24/05-191

DOI: 10.51201/JUSST/24/05191

Dr. R. Rajesh@ Nithyanandham et.al., records his journal publication in the following peer reviewed journal, during the month of May 2024.



Research Article

Investigating the Effects of Urea-Zinc Sulfate-L Phenylalanine on the Corrosion Inhibition of Mild Steel Exposed to pH-4 Sulfuric Acid

In Press, (this is not the final "Version of Record"). Available online 10 May, 2024

Author(s): Geetha M.B*, Rajesh Nithyanandam, Jenish Soosai and S.S. Rajendran

Published on: 10 May, 2024

DOI: 10.2174/0115734110296231240501170801

Abstract

Background: Corrosion of mild steel is a risk to material and stability. The practice of corrosion inhibitors is a cost-effective corrosion modification method for mild steel. Organic inhibitors rich in electrons might have an excellent ability to prevent corrosion. This study aims to assess the inhibitory effect of the mixture of Urea, Zinc Sulfate, and L-Phenylalanine, which has a high electron density.

Methods: MS corrosion was experimentally performed using H₂SO₄ at a pH of 4. Different gravimetric and conventional techniques, such as polarization, AC impedance AFM, UV, and fluorescence, were used to examine the studied data.

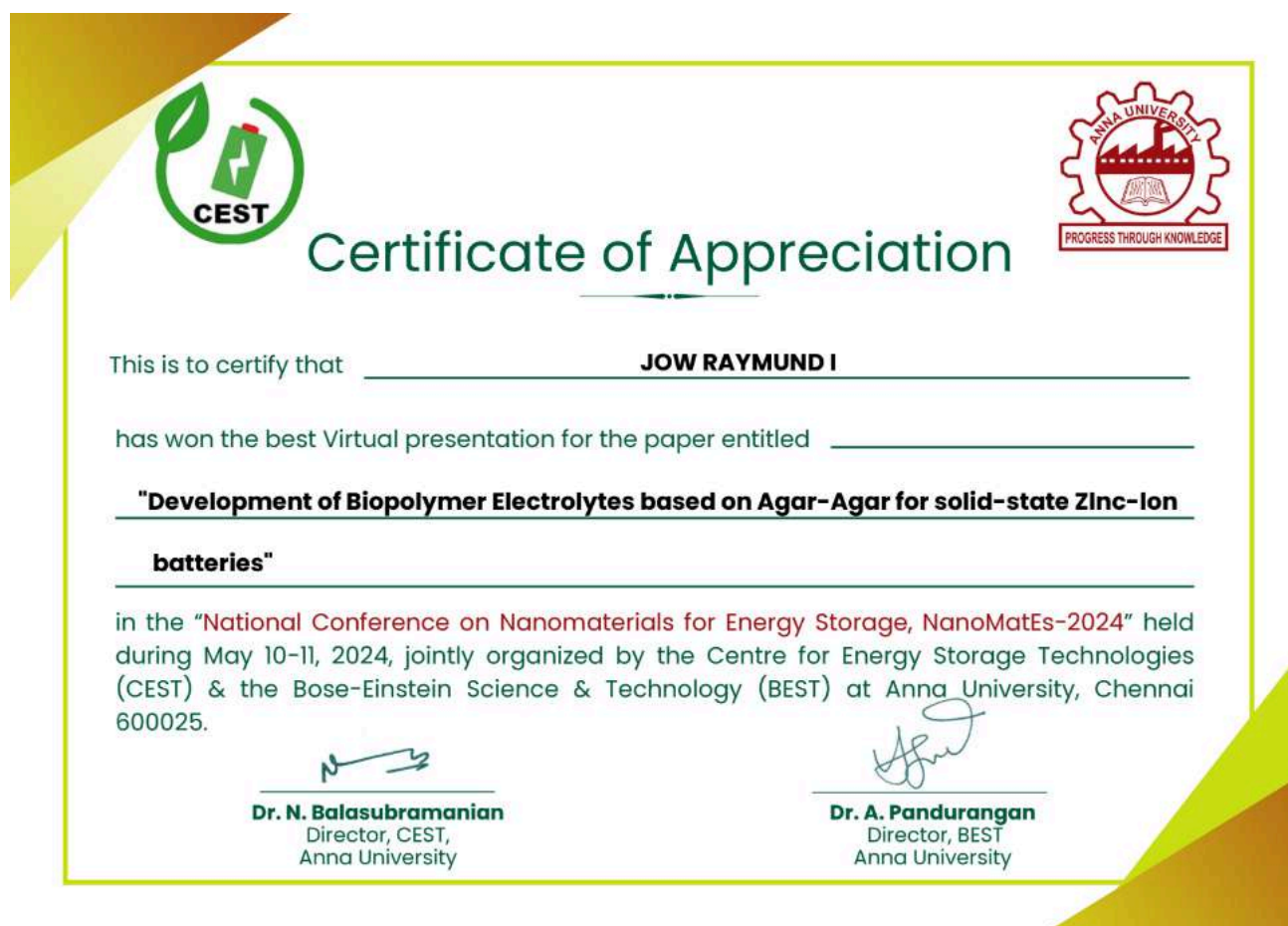
Results: According to gravimetric measurements, this combination produced 93% effective inhibition. The findings of the impedance test proved that the mixture of inhibitors that was adsorbed on the metal surface effectively prevented corrosion.

Conclusion: Likewise, according to the Polarization measurements, the inhibitor exhibits mixed-type performance with significant cathodic activity. UV, Fluorescence, and AFM findings showed that MS corrosion was suppressed because the inhibitor molecule adhered to the metal's surface and reduced.

Keywords: Corrosion, Inhibition Efficiency, Synergetic Effect, Mild Steel, Urea, L-Phenylalanine, AFM.

Students Participation: *achieving accolades.*

Mr. JowRaymund I, Final year B.Tech - Chemical Engineering, has won the best virtual presentation for the paper entitled "Development of Biopolymer Electrolytes base on Agar-Agar for solid-state Zinc-Ion batteries" in the National Conference on Nanomaterials for Energy Storage, NanoMatEs-2024 held during May 10-11, 2024, jointly organized by the Centre for Energy Storage Technologies (CEST) & the Bose-Einstein Science & Technology (BEST) at Anna University, Chennai. a paper, mentored by Dr. N.P. Kavitha, 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.

P04: 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.

P05: 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.

P06: 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.

P07: 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.

P08: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

P09: 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

PS01: Apply the knowledge of science and mathematics in the field of various transport processes to accomplish the contemporary needs of chemical and allied industries.

PS02: 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

PS01: Apply the knowledge of science and mathematics in the field of various transport processes to accomplish the contemporary needs of chemical and allied industries.

PS02: 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.