ChemECon
Solutions Worth Spreading

ChemECon 2023

Undergraduate Research Symposium

17th August 2023

Department of Chemical and Process Engineering

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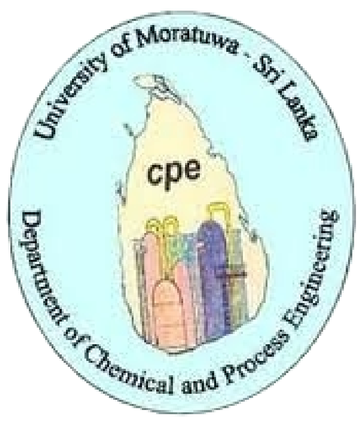
Solutions worth spreading

Undergraduate Research Symposium



Department of Chemical and Process Engineering
University of Moratuwa, Sri Lanka
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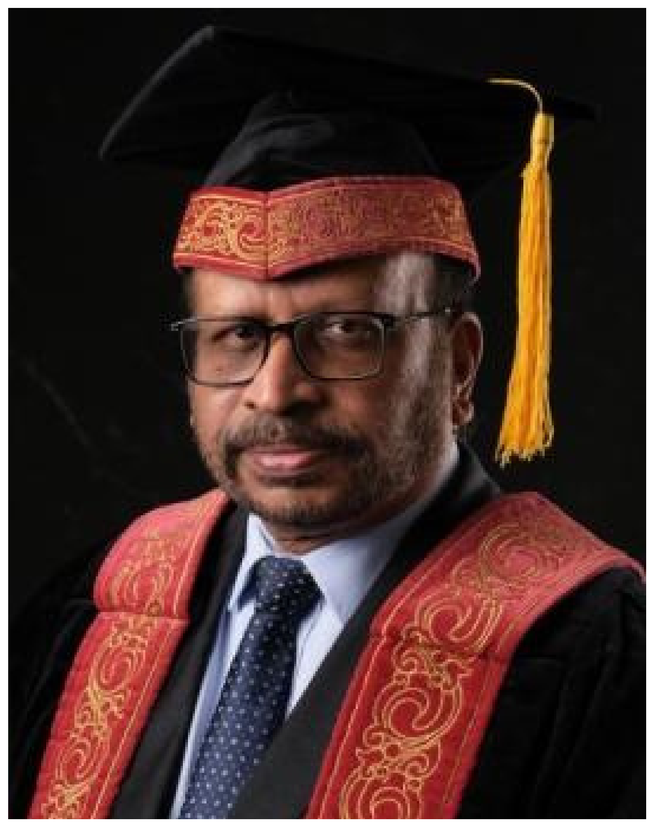

The University is delighted to observe the continued dedication to research by the Department of Chemical and Process Engineering, evident through the undergraduate research showcase 'ChemECon 2023'. The underlying theme of ChemECon, 'Solutions Worth Spreading', remains the cornerstone, setting the stage for undergraduates of the University of Moratuwa to unveil their potential in addressing industry-related challenges and research problems with their creative and novel ideas. ChemECon 2023 provides a unique platform for the aspiring engineers of the department, poised to embrace the formidable challenges of the industrial landscape, to convene and engage in scientific discourse with experts of the field.

This event reaffirms the Department of Chemical and Process Engineering's pledge to generating nationally significant, world-class research endeavours aimed at contributing to the continued progress of this engineering discipline in our nation. Such research symposia align with the broader goals set by the University of Moratuwa in its pursuit of building a state-of-the-art research environment aimed at contributing towards national development.

I would like to acknowledge the invaluable guidance provided by academic supervisors in steering these research projects, while also extending my congratulations on the successful execution of this research symposium on behalf of the university.

Prof. N. D. Gunawardena
Vice-Chancellor
University of Moratuwa, Sri Lanka

Message from the Dean, Faculty of Engineering

I am delighted to extend my congratulations to the Department of Chemical and Process Engineering on the occasion of “ChemECon 2023”— the third iteration of its undergraduate research symposium. The theme of ChemECon, "Solutions Worth Spreading," aptly underscores the aspirations of theundergraduates of Chemical & Process Engineering, who have consistently demonstrated their readiness to confront industry challenges head-on, offering innovative and resourceful solutions.

Cultivating a robust research culture among its students remains a pivotal objective of the undergraduate program within the Faculty of Engineering at the University of Moratuwa. The faculty is acutely aware that research serves as a catalyst for enhancing critical thinking and fostering innovation among its students. This event is lies within the framework of these goals, and provides an excellent platform for students to present their research outcomes while enabling them to effectively communicate their technical knowhow to a diverse audience of industry stakeholders and academia.

I extend my heartfelt best wishes to the Department of Chemical and Process Engineering for the resounding success of the event. It is my fervent hope that the outcomes of today's proceedings will yield enduring benefits, acting as a stimulus for national development through the application of the Chemical and Process Engineering discipline.

Prof. K.T.M.U. Hemapala
Dean/Faculty of Engineering
University of Moratuwa, Sri Lanka

Message from the Head of the Department of Chemical and Process Engineering

It's clear that Chemical and Process Engineering (CPE) is an essential field for the sustainable development of various industries. CPE graduates indeed play a vital role in the industrial development process. The Department of Chemical and Process Engineering (DCPE) has been actively involved in promoting research and collaboration within the field. One of the notable events organized by DCPE is the ChemECon Undergraduate Research Symposium. This symposium serves as a platform for CPE undergraduates to showcase their talents and present the findings of their final-year research projects. The ChemECon symposium focuses on addressing nationally important topics related to chemical and process engineering. Creative and innovative ideas resulting from their research will be important for finding solutions to industry problems and driving the industry to higher levels of advancement. In ChemECon 2023 symposium, CPE undergraduates present research findings based on three distinct research areas of "Process Development and Optimization", “Environmental Engineering, and Process Safety" and "Energy Engineering and Clean Technology".

I wanted to take this opportunity to express my heartfelt gratitude for the outstanding efforts put forth by all the participants from the industry, including the esteemed resource persons, during the remarkable event. Moreover, I extend my warmest congratulations to all the presenters for their exceptional contributions. I would also like to appreciate the tremendous efforts of the entire staff and the undergraduates in the DCPE. Their hard work, dedication, and thorough planning were instrumental in ensuring the success of ChemECon 2023.

Prof. (Mrs.) Shantha Egodage
Head/Department of Chemical & Process Engineering
University of Moratuwa, Sri Lanka

Message from the Programme Chairperson

It fills me with a great sense of pride to see “ChemECon 2023”, the undergraduate research symposium of the Department of Chemical and Process Engineering, come into fruition. ChemECon is conducted under the theme of "Solutions Worth Spreading”, as befitting the innovative projects conducted by the 2018 student intake under the guidance of the academic staff members of the department. It was heartening to see students meticulously engaged in research work throughout the past 12 months with the goal of addressing salient research problems prevalent in the Chemical and Process Engineering domain. The dedication of the students to achieve their research objectives resulted in the cultivation of an inquisitive research environment at the department, and it brings me joy to see the exemplary outcomes of these projects.

I hope that ChemECon 2023 can provide an excellent platform for students to present their findings to a diverse audience consisting of academia as well as stakeholders from the industry. The participants of ChemECon 2023 will be able to appreciate the research findings of the students, which include out-of-the-box solutions and novel paradigms that can be adopted to achieve remarkable process improvements in the industry and broaden the horizons of Chemical and Process Engineering knowledge domain.

I would like to express my heartfelt gratitude to the organizing committee who worked tirelessly to make ChemECon 2023 a resounding success.

Let us hope that the symposium will be the spark for the creation of new knowledge and formulation of engineering solutions for the advancement of the Chemical and Process Engineering discipline!

Dr. Thilini U. Ariyadasa,
Programme Chairperson
Senior Lecturer
Department of Chemical & Process Engineering
University of Moratuwa, Sri Lanka

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Professor Shantha Egodage
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Professor Shantha Amarasinghe
Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka.

Editorial Note

Undergraduate research offers opportunity to bridge the gap between theoretical knowledge and practical application. In this respect, research projects are carried out to enhance educational experiences of students while contributing to the advancement of knowledge. Today, the findings of the final-year undergraduate research projects will be presented by the students of the Department of Chemical and Process Engineering, which they carried out over Semesters 7 and 8.

These research work have been carried out amidst numerous difficulties subsequent to COVID-19 pandemic, many of which are computer-based simulations and modelling. However, students managed to produce remarkable research outputs which ensures meaningful contributions to their fields. ChemECon 2023 program comprises a main session followed by three parallel subsessions based on the distinct research areas of "Process Development and Optimization", “Environmental Engineering, and Process Safety" and "Energy Engineering and Clean Technology".

Join us at ChemECon 2023 to support and engage with young Chemical and Process Engineering researchers while discovering new industry-relevant paradigms and technologies.

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Prof. Mahinsasa Narayana, Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

Prof. Manisha Gunasekera, Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka

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