MATERIALS ENGINEERING

SYMPOSIUM

ON INNOVATIONS

FOR INDUSTRY 2022

TOWARDS SMART SOCIETY THROUGH
INNOVATIVE MATERIALS

BOOK OF ABSTRACTS

17th November 2022

MATERIALS ENGINEERING SYMPOSIUM ON INNOVATIONS FOR INDUSTRY 2022

TOWARD SMART SOCIETY THROUGH INNOVATIVE MATERIALS

Materials Engineering Symposium on Innovations for Industry (MESII-2022) is being organized for the 5th time by the Department of Materials Science and Engineering of University of Moratuwa. The main objective of this event is to facilitate the industry to recognize and gain awareness on the research activities carried out by the final year undergraduates of the Department as well as provide an opportunity to get a comprehensive understanding about the activities and facilities of the Department.

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Message from the Dean

At the outset let me congratulate the Department of Material Science and Engineering for successfully organising the Materials Engineering Symposium on Innovations for Industry (MESII) 2022 for the fourth time in succession during this year. As the Dean of the Faculty of Engineering I am happy to see that the Department providing an opportunity for its undergraduates to present their research findings. This symposium aims to show case their creativity and innovativeness highlighted through the final year project work carried out within the Department with the theme of "Towards Smart Society through Innovative Materials"

The symposium also encourages the department industry interaction in the context of research and development. The Materials Science and Engineering Department could fine-tune their future pathways in the applied research sector through the exposure and feedback received by the industry. Further, it has been a long felt need that the students seeking university admission to engineering be properly educated on the scope and the opportunities available in the field of Materials Engineering in order to equip them with better choices for their future career plans.

Motivating engineering graduates to be job creators rather than job seekers is one of our priorities in the undergraduate programmes of the Faculty of Engineering. The Faculty recognises that research skills, rather than being limited to publications, serve to enhanced the development of the country through innovations. This symposium will hence add value to the already highly acclaimed degree of engineering earned by the undergraduate students of the Faculty.

I wish all the very best for the success of the event and do hope that its benefits will have a lasting effect on the next generation of Materials Engineers produced by the Department.

Prof. KTMU Hemapala

Dean – Faculty of Engineering

17th November 2022

Message from the Head of the Department

The Department of Materials Science and Engineering in collaboration with the Society of Materials Engineering Students is organizing the Materials Engineering Symposium on Innovations for Industry (MESII) for the fifth time this year. Due to the prevailing situation in the country this year's event is held with certain limitations. This symposium was the initiative of one of our young academics Dr. Mrs. Asha Galhenage which had a two-fold objective initially, showcasing the research capabilities of our undergraduates, and enhancing industry-department interactions.

However, from the year 2019, the scope of this symposium was expanded towards creating awareness among the students of physical science stream of GCE (A/L) about the field of Materials Science and Engineering in general and the research activities of the department in specific with a focus on innovations. This year too, the scope remains the same even though there are financial restrictions.

Dr. Aravinda Abeyagunawardane, serves as the principal organizer and program chair of MESII for this year as well. I take this opportunity to congratulate him for organizing and coordinating an important event like this. I also wish to express my sincere gratitude to all the academic and non-academic staff of the department who supported and helped in successfully organizing this symposium. I am also very thankful for all the students who dedicated their valuable time to be instrumental in this event as the members of the Society of Materials Engineering Students.

Finally, I wish to congratulate all the young researchers who will be presenting their papers and posters today on this virtual platform.

Mr. V. Sivahar
Head/Department of Materials Science and Engineering
University of Moratuwa

Message From the Program Chair

It is my great pleasure to welcome you to our fifth annual event; "*Materials Engineering Symposium on Innovations for Industry 2022*" (MESII 2022) with the association of the Society of Materials Science and Engineering (SOMES). As the program chair for the third consecutive time, and the final year undergraduate project co-ordinator, I congratulate all the finalists from our undergraduate program who successfully carry out their research work in the Department of Materials Science and Engineering, University of Moratuwa. The primary objective of this symposium is knowledge dissemination throughout our society to cater for the betterment of itself.

Materials Science and Engineering is a well distinguished area in many developed countries as it is the core field in both design and manufacturing. The Department of Materials Science and Engineering, University of Moratuwa is the premier national institution currently catering to this demand in the aspect of education as well as in materials research in Sri Lanka.

Year 2022 is a more challenging year in terms of financial terms due to economic instability and financial bankruptcy of Sri Lanka. This situation has affected entirely on us in terms of research progression as well as research knowledge dissemination. The situation has led us to hold only a poster session this time without a technical session. Today we host this annual event at such a crucial and tough time and as the program chair I gravely indebted to the sponsor of the event; S.R Steel Pvt Ltd for making this event success at this crucial juncture.

As the part of the program, we host a short workshop for the fourth time on the theme of "*Recognizing the Rewarding Trends in Engineering*" for Advanced Level school students studying in the physical science stream. This will enlighten our school students on what we do here at the department and motivate themselves to bridge the gap between A/L curriculum setting and University undergraduate curriculum.

I take this opportunity to thank everyone who helped and supported to make this symbolic event a success and hope the time spent in MESII 2022 is worthwhile and exciting. As the program chair, I hope you will continue to support future MESII events for the betterment of every aspect.

Dr AAG Aravinda Abeygunawardane
Program Chair
MESII 2022