PROCEEDINGS

2nd International Conference on
Materials, Manufacturing and Machining
for Industry 4.0 (ICMMM 2020) – A Virtual Conference

October 9 – 10, 2020

Organised by

Department of Mechanical Engineering

Bannari Amman Institute of Technology
Sathyamangalam – TK, Erode – DT,
Tamil Nadu, INDIA -638401

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Editors
Dr. M. Kumar
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DISCLAIMER

Due to COVID-19 pandemic situation, the conference meeting was changed to Virtual Mode which offered a chance to the students, faculty members, researchers and industrial persons to share their knowledge, experience and expertise virtually that augments the ‘Technological Advancements’ ensues across countries. We took this conference as an initiative through Virtual Mode as a challenging and innovative way of transferring the technology in the fields of Materials, Manufacturing and Machining. The conference was virtually conducted through google meet platform on 09 & 10th October 2020 by M/s. Bannari Amman Institute of Technology, Department of Mechanical Engineering, Alathukombai (Po), Sathyamangalam & Taluk, Erode District - 638 401 Tamilnadu, India.

The conference was designed to be conducted virtually that consists of three parallel technical paper presentation sessions on each day. Authors were given 12 min for their presentation and 3 min for question and answers session. In addition to this, five technical keynote lecture sessions were offered by eminent professors, scientists and leading industry experts on both the days. Q & A sessions were provided to the delegates to update their field of expertise according to industrial and social needs.

182 quality papers were scrutinized out of 230 by the editorial team and they were presented in the conference. The quality of the technical papers is ensured by Single Blind review process carried out by the external and internal experts as a review member. Each paper is checked for its similarity by Turnitin software, and ensured to have <15%. The reviewers’ suggestions are scrupulously considered as one of the criteria for accepting the 76 papers for possible publication.

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PREFACE

The Department of Mechanical Engineering, Bannari Amman Institute of Technology (BIT) is honoured to bring out the proceedings of the 2nd International Conference on Materials, Manufacturing and Machining for Industry 4.0 (ICMMM 2020) – A Virtual Conference in soft form. This is an extensive Mechanical Engineering associated conference to take place in India. The conference was virtually held during 09-10, October 2020 hosted by Bannari Amman Institute of Technology, Sathyamangalam.

The 2nd International Conference on Materials, Manufacturing, and Machining for Industry 4.0 (ICMMM 2.0) aims to attract like-minded people who work for the innovation in engineering applications. This conference also enhances the knowledge in the integration of advanced materials, modern manufacturing and machining processes to meet the requirements of Industry 4.0. In the present scenario, the role of Engineers/Researchers/Scientists is to enrich societal development through green engineering for the health and wealth of human life. ICMMM 2.0 extends a technical forum for academicians, industrialists, and researchers for sharing knowledge, expertise, and experience.

The conference was structured with the chief guest inaugural address by Dr. Manoj Gupta, Professor in Mechanical Engineering, NUS, Singapore, and a special invited talk by Prof. Richard Yang, Western Sydney University, Australia. Both days were slated with 5 parallel virtual technical presentation sessions along with 5 keynote lectures delivered by well-known eminent personalities from various reputed Institutions Viz. Prof. Brij Kumar Dindhaw Emeritus Professor, IITKH, India, Prof. Adarsh Kumar Pandey, Sunway University, Malaysia, and Prof. Jeyraj A/ L Selvaraj, University of Malaya, Malaysia. Experts invited from Government Organizations Dr. T. Ram Prabhu, Scientist “D” – Defence Research and Development Organisation, India, and from renowned industries Dr. Krishnan Umachandran, NELCAST, India Limited.

More than 230 technical papers were initially received for the conference out of which 182 quality papers were selected after technical scrutiny process for the presentation in the conference and 76 accepted papers will be submitted for possible publication in Scopus and Web of Science indexed technical journal, IOP conference series: Materials Science Engineering (ISSN: 17578981). 75 papers were accepted for publication. The participants from various countries and states have contributed their technical papers. The conference is organized by the combined effort of a self-supporting basis.

The organizers are grateful to BIT for giving the opportunity to organize this virtual conference. The Department of Mechanical is indebted to Dr.S.V.Balasubramaniam, Chairman, Dr.M.P.Vijayakumar, Trustee, Dr.C.Palanisamy, Principal, Dr.K.Sivakumar, Dean PDS and Dr.M.Ravikumar, HoD, BIT for their encouragement and full support for the success of the conference.

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Special Thanks to

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&
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Glimpses of ICMMM 2020

Welcome Address and Chief Guest Introduction

Chief Guest Address by Dr. Manoj Gupta, NUS Singapore

Special Invitee Talk by Prof. Richard Yang, Western Sydney University, Australia
Keynote Lectures by Dr. Adarsh Kumar Pandey, Sunway University (left) & Dr. T. Ramprabhu, DRDO, Bangalore (Right)

Keynote Lectures by Dr. Krishnan Umachandran, CEO, NELCAST (left) & Dr. Jeyaraj Selvaraj, University of Malaya, Malaysia (Right)
Parallel Technical Paper Presentation Sessions
Feedback given by one of the participants