

Preface

Mário S. Ming Kong

ICMEP 2018 Conference Organizing General Chair

Professor with Aggregation/Researcher, CIAUD – FAUL, Lisbon School of Architecture – University of Lisbon, Lisbon, Portugal/ CHAM, FCSH, Universidade NOVA de Lisboa, Universidade dos Açores

Secção de Desenho, Geometria e Computação, Departamento de Artes, Humanidades e Ciências Sociais, Faculdade de Arquitetura, Universidade de Lisboa, Portugal

We were pleased to welcome you to the proceedings of the **7th International Conference on Manufacturing Engineering and Process (ICMEP 2018)** held in Barcelona, Spain, from the 5th to the 7th of February of 2018.

The Conference on Manufacturing Engineering and Process is an annual international event for the presentation, interaction and dissemination of researches related to the topic of coatings and surface engineering, composite materials, computer-aided design, manufacturing, and engineering, environmentally sustainable manufacturing processes and systems joining processes, laser based manufacturing, manufacturing process planning and scheduling, materials behaviour, materials forming, metrology and measurement, modelling, analysis, and simulation of manufacturing processes, nanofabrication, nanometrology and applications, nanomaterials and nanomanufacturing, non-traditional manufacturing, physics, powder metallurgy and ceramic forming, precision molding processes, rapid manufacturing technologies, semiconductor materials manufacturing, surface, subsurface, and interface phenomena and aims to foster the awareness and discussion on the importance of this subjects and its benefits for the community at large.

It is my pleasure to announce the participation of expert speakers from fifteen countries (Brazil, Brunei, Canada, Czech Republic, China, Germany, Spain, Malaysia, Nigeria, Prague Republic of Macedonia, Romania, Russia, Taiwan, Thailand) in this three days event. We have received research papers from distinguished participating academics and researchers from countries spreading over three continents. Thus, this event revealed itself as being a platform for researchers in a vast variety of fields to discuss, share, and exchange experiences. The comprehensive content of the congress has attracted immense attention and the wealth of information spread out over all the papers is, in our point of view, extremely useful for professionals working in the related fields.

We would like to express our sincere thanks to all those who have contributed to the success of **ICMEP 2018**.

The **7th International Conference on Manufacturing Engineering and Process ICMEP 2018** would not have been possible without the help of a group of people from SCIEI, the support from Lisbon School of Architecture of the University of Lisbon, the Firat University, the Turkey, Selçuk University Turkey and the SCience and Engineering Institute - selflessly and enthusiastically supported and helped to overcome the many obstacles that arose during the preparation and organization of this event.

We want to thank all authors of submitted papers for their participation. All contributed with a great deal of effort and creativity to produce this work, and I, in my quality of organizing chair, am especially happy that they chose **ICMEP 2018**, as the place to present it. Credit also goes to all collaborators, in particular, the Scientific Committee members and reviewers, who donated substantial time from their busy schedules to carefully read and conscientiously evaluate the submissions.

In addition, in the name of the Organizing Committee, I would like to take this opportunity to extend our sincere gratitude to all supporting Organizations, for their support and encouragement and for making the event a success.

Special thanks go to all our speakers, authors, and delegates for making **ICMEP 2018** a fruitful platform for sharing, learning, networking, and inspiration.

We sincerely hope you find this publication enriching and thought provoking.

Conference Committee of ICMEP 2018

June 5, 2018

Committee

International Advisory Committee

Prof. Ramesh K. Agarwal, Washington University in St. Louis, USA

General Chair

Prof. Mário S. Ming Kong, University Lisbon, Portugal

Program Chair

Prof. Frederic Vignat, Université Grenoble Alpes, France

Publicity Chairs

Prof. Porojan Liliana, "V. Babeş" University of Medicine and Pharmacy, Romania

Prof. Hassan El-Hofy, Alexandria University, Egypt

Prof. José B. Aguiar, University of Minho, Portugal

Technical Committee

Prof. Joerg Niemann, University of Applied Sciences Düsseldorf, Germany

Prof. Serhat İkizoğlu, Istanbul Technical University, Turkey

Prof. BALAN GEORGE, Romanian -German University of Sibiu, Romania

Prof. Moraru Roland, University of Petrosani, Romania

Prof. Muhammad Fahad, NEDUET Karachi Pakistan, Pakistan

Prof. Che Hassan Bin Che Haron, National University Of Malaysia, Malaysia

Prof. Jaharah Binti A. Ghani, National University Of Malaysia, Malaysia

Prof. Mehmet Savsar, Kuwait University, Kuwait

Prof. Lucian-Ionel CIOCA, "Lucian Blaga" University of Sibiu, Romania

Prof. Halit S. TURKMEN, Istanbul Technical University, Turkey

Prof. Hasan AL Dabbas, Philadelphia University, Jordan

Prof. Mehmet Karakose, Firat University, Turkey

Prof. J. Pecha, Tomas Bata University in Zlín, Czech Republic

Prof. SILVIU-MIHAI PETRIŞOR, Land Forces Academy from Sibiu, Romania

Prof. Kodakkal Kannan Viswanathan, Kuwait College of Science and Technology, Kuwait

Prof. Petr Zelený, Technical University of Liberec, Czech Republic

Prof. Mohammed Sriti, Sidi Mohamed Ben Abdellah University, Morocco

Prof. Vladimir Strezov, Macquarie University, Australia

Prof. Francisco Klebson Gomes dos Santos, Universidade Federal Rural do Semi Arido, Brazil

Prof. Balhassn S. M. Ali, Bursa Orhangazi University, Turkey

Prof. Yahya Bozkurt, Marmara University, Turkey

Prof. Hatice S. Sas, Abdullah Gul University, Turkey

Prof. Lucian-Ionel CIOCA, Lucian Blaga University of Sibiu, Romania

Prof. İlhan Asiltürk, Selcuk University, Turkey

Prof. Cherkaoui Abdelghani, MOHAMED V UNIVERSITY, Morocco

Prof. Sabuj Mallik, University of Derby, United Kingdom