Preface

It is a pleasure to introduce this Volume devoted to 2019 4th International Conference on Design, Materials and Manufacturing (ICDMM 2019) and 2019 4th International Conference on Material Engineering and Smart Materials (ICMESM 2019). The conferences were held in Salamanca, Spain on August 9-12, 2019. It is sponsored by International Association of Computer Science and Information Technology and technically assisted by University of Salamanca, University of the Ryukyus, etc.

The major goal and feature of the conferences are to bring academic scientists, engineers, industry researchers together to exchange and share their experiences and research results, and discuss the practical challenges encountered and the solutions adopted. ICDMM 2019 & ICMESM 2019 served as a good platform for scientist community where participants met to exchange ideas.

The evaluation of all papers was conducted by the technical program committee on the basis of the review reports from technical program committee members and international reviewers. This volume provides an opportunity for the readers to engage with a selection of refereed papers that were presented at the conferences. The collected papers are focused on materials science and manufacturing technologies.

We are also honored to have this opportunity to thank our keynote speakers and invited speakers who were pleased to make contributions to our conference and shared their new research ideas with us. They are Prof. Sergei Alexandrov, Beihang University, China; Prof. Jesus Toribio, University of Salamanca, Spain; Prof. Daolun Chen, Ryerson University, Canada; Assoc. Prof. Marina Rynkovskaya, Peoples' Friendship University of Russia (RUDN University), Russia.

Finally, we express our heartfelt appreciation again to our chairs, local organizing committee, program chairs, technical committee members, authors and delegates, who made a lot of efforts and contributions. Thanks to their support and help, we have held the conferences successfully and always keep making progress. Finally, we also would like to take the opportunity to thank all reviewers who reviewed a huge number of papers. Last but not least, I would like to express our gratitude to all delegates to make the conference here successfully.

Conference Chairs

Prof. Jesus Toribio, University of Salamanca, Spain Prof. Sergei Alexandrov, Beihang University, China

Committee

Conference Chairs

Prof. Jesus Toribio, University of Salamanca, Spain Prof. Sergei Alexandrov, Beihang University, China

Local Organizing Committee

Assoc. Prof. Beatriz Gonzalez, University of Salamanca, Spain Assoc. Prof. Juan-Carlos Matos, University of Salamanca, Spain

Program Chairs

Prof. José Ignacio Velasco, Universitat Politècnica de Catalunya, Spain

Assoc. Prof. Francisco Pérez-Arribas, Univeridad Politécnica de Madrid, Spain

Assoc. Prof. Marina Rynkovskaya, Peoples Friendship University of Russia (RUDN University),

Ruccia

Assoc. Prof. Fernando Vegas López-Manzanares, Universitat Politècnica de València, Spain

Technical Committee

Prof. Ratnam Paskaramoorthy, University of the Witwatersrand, South Africa

Prof. Pei-Hsing Huang, National Yunlin University of Science and Technology, Taiwan

Prof. Qumrul Ahsan, Universiti Teknikal Malaysia, Malaysia

Prof. Aurelia Meghea, Politehnica University of Bucharest, Romania

Assoc. Prof. Suresh Palanisamy, Swinburne University of Technology, Australia

Dr. Rakchart Traiphol, Mahidol University, Thailand

Dr. Yang Xi, Sr. Quality Scientist, Newomics Inc. USA

Asst. Prof. Praseetha P Nair, Government Engineering College, India

Dr. Md. Shafiul Ferdous, Khulna University of Engineering & Technology, Bangladesh

Dr. Pollawat Charoeythornkhajhornchai, Burapha University, Thailand

Prof. Kazuhiro Oda, Oita University, Japan

Assoc. Prof. Chun-Cheng Lin, Air Force Academy, Taiwan

Prof. Md. Anayet U Patwari, Islamic University of Technology, Bangladesh

Assoc. Prof. Yuzo Nakamura, Kagoshima University, Japan

Prof. Jaya Christiyan K G, M S Ramaiah Institute of Technology, India

Prof. Priyanka Jadhav, Mumbai University, India

Dr. Kyunghun Lee, Korea Maritime and Ocean University, South Korea

Prof. Daolun Chen, Ryerson University, Canada

Dr. Rahida Wati Binti Sharudin, Universiti Teknologi MARA, Malaysia

Prof. Jianlin Sun, University of Science and Technology Beijing, China

Prof. Ibrahim Mashal, Aqaba University of Technology, Taiwan

Assoc. Prof. Shun-Fa Hsu, Department of Information Management, Taiwan

Assoc. Prof. Rajesh Prasad, African University of Science and Technology, Nigeria

Assoc. Prof. Md. Nawab Yousuf Ali, East West University, Bangladesh

Assoc. Prof. Thelma Palaoag, University of the Cordilleras, Philippines

Assoc. Prof. Shamim Ripon, East West University, Bangladesh

Dr. Churee Techawut, Chiang Mai University, Thailand

Dr. Nurul Retno Nurwulan, Universitas Universal, Indonesia

Dr. Saad Mansoor, Bangor University, UK

Prof. Vladislav Bina, University of Economics in Prague, Czech Republic

Assoc. Prof. François Ducobu, University of Mons, Belgium

Dr. Esteban Correa, Universidad de Medellín, Colombia

Dr. Mohamed Zahran, Military Technical College, Egypt

Dr. Gobinda Gopal Khan, Tripura University, India

Dr. Myoungsung Choi, Dankook University, South Korea

Dr. Radka Pernicova, Czech Technical University in Prague, Czech Republic

Prof. Qiang Zhu, Southern University of Science and Technology, China

Assoc. Prof. Guney Guven Yapici, Ozyegin University, Turkey

Assoc. Prof. Pavel Tcvetkov, Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences", Russia

Prof. Inseok Yoon, Induk University, South Korea

Dr. Andoni Lasheras, Universidad del país vasco (UPV/EHU), Spain

Prof. Osman ADIGÜZEL, Firat University, Turkey