Preface

2018 7th International Conference on Material Science and Engineering Technology (ICMSET 2018) was held at Beijing University of Posts and Telecommunications-BUPT Hotel, China during October 20-22, 2018. ICMSET is dedicated to new research developments and advances in the fields of Material Science and Engineering Technology.

The key goal of the conference was to bring the academic scientists, engineers, and industry researchers together to exchange and share their expertise, experience and research results, and discuss the challenges and future directions in their specialized areas of research in these fields. Two professors from USA, two professors from China and a professor from Russia delivered the invited keynote lectures about state of the art research in their areas of expertise. Researchers from China, Malaysia, Egypt, India, Russia, Philippines, United States of America, South Africa, Indonesia, Thailand, and Kazakhstan participated in the conference.

The conference provided a golden opportunity for the students, researchers and engineers to interact with the experts and specialists to discuss with them on technical matters and future directions of research.

The proceeding of the conference consists of papers from the universities, research institutes and industry. The papers were selected after a rigorous peer-review by the conference committee members and international reviewers. The papers should provide the readers an overview of many recent advances in the fields related to materials science and engineering technology including the modeling, analysis, computation and optimization as well as the experimental methods.

I would like to thank all the authors who have contributed to this volume and also to the members of the organizing committee, reviewers, speakers, chairpersons, sponsors and the conference participants for their support to ICMSET 2018.

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

Prof. Ying Tan Peking University, China

Committees

International Advisory Committees

Prof. Sreeramamurthy Ankem, University of Maryland, USA

Conference Chairs

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

Prof. Ying Tan, Peking University, China

Program Chairs

Prof. Jun Song CHEN, University of Electronic Science and Technology of China Assoc. Prof. Aleksey Vedyagin, Boreskov Institute of Catalysis SB RAS, Russia

Publicity Chairs

Assoc. Prof. Mohamed Abdel-Hady Gepreel, Egypt-Japan University of Science and Technology, Egypt

Assoc. Prof. Rajeshkannan Ananthanarayanan, The University of the South Pacific, Fiji

Assoc. Prof. Bryan B. Pajarito, University of the Philippines Diliman, Philippines

Carlos Rolando Rios-Soberanis, Centro de Investigación Científica de Yucatán, Mexico

Technical Committee

Prof. Mohd Azlan Mohd Ishak, MARA University of Technology, Malaysia

Prof. Chil-Chyuan Kuo, Ming Chi University of Technology, TAIWAN

Prof. Dong-Won Jung, Jeju National University, South Korea

Prof. RIDVAN DURAK, Ataturk University, TURKEY

Prof. Rinlee Butch Cervera, University of the Philippines Diliman

Prof. O.L. Shanmugasundaram, K.S.Rangasamy College of Technology, India

Assoc. Prof. Mehmet Yetmez, Bulent Ecevit University, Turkey

Assoc. Prof. Bryan B. Pajarito, University of the Philippines Diliman, Philippines

Assoc. Prof. Marvin Herrera, University of the Philippines Los Banos, Philippines

Assoc. Prof. Nataliia Tarasova, Ural Federal University, Russia

Asst. Prof. Ferdi AKMAN, Bingöl University, Turkey

Asst. Prof. Asma Perveen, Nazarbayev University, Kazakhstan

Asst. Prof. Yu-Chih Tzeng, National Defense University, Taiwan

Asst. Prof.Dr.Kolbuk-Konieczny, Polish Academy of Sciences

Asst. Prof. Hira Joshi, Gargi College, University of Delhi, India

Asst. Prof. Jem Valerie D. Perez, University of the Philippines Diliman, Philippines

Asst.Prof.Chaiya Praneetpongrung, Rajamangala University of Technology Thanyaburi, Thailand

Dr. Lai Mun Kou, SEGi University, Malaysia

Dr. Mohd Idris Shah Ismail, University Putra Malaysia, Malaysia

Dr. Kapil Gupta, University of Johannesburg, South Africa

Dr. Sam Schwarm, University of Maryland, USA

Dr. Anita Sukmawati, Universitas Muhammadiyah Surakarta, Indonesia

Dr. Erindyah Wikantyasning, Universitas Muhammadiyah Surakarta, Indonesia

Hugo Miguel Silva, University of Minho, Portugal

Syafiqah Saidin, UNIVERSITI TEKNOLOGI MALAYSIA, Malaysia

Carlos Rolando Rios-Soberanis, Centro de Investigación Científica de Yucatán, Mexico

Dinkar Nandwana, ASM America Inc in Phoenix, AZ (USA)

Auppatham Nakaruk, Center of Excellence for Environmental Health and Toxicology, Thailand