

## Preface

2020 5th International Conference on Smart Engineering Materials (ICSEM 2020) was successfully held in National University of Singapore, Singapore during March 6-8, 2020 and 2020 4th International Conference on Innovative Engineering Materials (ICIEM 2020) was successfully held in Peoples' Friendship University of Russia, Russia during May 20-22, 2020. These two conferences were multidisciplinary aimed promoting international scientific and technological exchanges on all aspects related to Smart and Innovative Engineering Materials. The vibrant academic atmosphere at the conference promoted exchanges of scientific and technological ideas among the participants and disseminated recent developments in the field of mater science.

All of the papers in volume were subjected to peer-review by conference committee members and international reviewers. The main selection criteria for papers publication in the proceedings were their quality and their relevance to the conference topics.

ICSEM 2020 & ICIEM 2020 are aimed at providing an excellent avenue for academicians, students, researchers, professionals, engineers, and scientists from academia and industry to share their research findings and building network for further collaborative research in their respective areas. Both conferences programs were composed of keynote and selected oral talks. Best oral presentations have been selected by the session chairperson for each session. We are grateful to the major contribution from the worldwide community of Smart and Innovative Engineering Materials.

We would like to thank all the authors who have contributed to this volume and also to the organizing committee members, reviewers, speakers, chairpersons, sponsors and all the participants for their support to ICSEM 2020 & ICIEM 2020.

At last, I hope that the contents of this volume will prove useful and unique opportunity for many researchers and practitioners involved in different areas of Material science in developing and applying new technologies and processes in the field of smart engineering materials and innovative engineering materials. We believe therefore that this issue will bring interesting information to the readers and will be useful for people involved in this subject of scientific research.

Conference Chair:  
Prof. Arcady Zhukov,  
University of Basque Country, Spain  
June 15, 2020

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