## **Preface**

The 4th International Symposium on Advanced Material Research (4th ISAMR 2020) was taken place in Jeju Island, South Korea during June 19-21, 2020.

This conference brought together leaders from industry and academia to exchange and share their experiences, present research results, explore collaborations and to spark new ideas, with the aim of developing new projects and exploiting new technology in the field of applied materials and advanced materials processing technologies.

The committee of ISAMR 2020 expresses their sincere thanks to all authors for their high-quality research papers and careful presentations. All reviewers are also thanked for their careful comments and advices. Thanks are finally given to Trans Tech Publication as well for producing this volume.

The Organizing Committee of ISAMR 2020

Committee Chair Prof. Dongkeon Kim Dong-A University

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## **Sponsor**

University Core Research Center for Disaster-free and Safe Ocean City Construction (D-SOC) at Dong-A University

Recently, various efforts to prevent and prepare are vitally needed for prevention of Disasters and calamities. So we understand the necessity for technology of disaster and we built up the University Core Research Center for Disaster-free and Safe Ocean City Construction (D-SOC) was built in 1965 in Dong-A University in order to contribute the development of construction industry.

Accordingly, University Core Research Center for Disaster-free and Safe Ocean City Construction (D-SOC) in Dong-A University has progressed of research on the construction technology and planning through the various seminars, conference and lectures. These research could be conducted cooperation with Dong-A University in various fields structure, soil, hydraulic, environment.

University Core Research Center for Disaster-free and Safe Ocean City Construction (D-SOC) will try to be a leader in the construction of industry through the various research activities, technical exchanges and global conference.