

Preface

This is the proceedings of the selected papers presented at 12th IUMRS International Conference on Advanced Materials (IUMRS-ICAM2013) held in Qingdao, China, Sept. 22-28, 2013.

The IUMRS International Conference on Advanced Materials is one of the most important serial conferences of the International Union of Materials Research Societies (IUMRS). The conferences are held every two years and organized by the adhering bodies of IUMRS. IUMRS-ICAM provides the opportunity for scientists, engineers, and students from the world to exchange their recent achievements in the field of materials research and development. IUMRS-ICAM 2013 was organized by C-MRS.

IUMRS-ICAM 2013 had 33 Symposia covering five fields of Energy and environmental materials; Structural materials; Functional materials; Nano-scale and amorphous materials; and Materials processing and Genomic engineering. More than 2200 participants from all over the world attended this conference, and the conference organizers received more than 700 technical papers. By recommendation of symposium organizers and after peer reviewing 235 papers are published on the journal of "Materials Research Innovation", 308 papers are published in the present proceedings, which divided into three volumes of

Part 1: Energy, Environment and Functional Materials

Part 2: Structural Materials

Part 3: Nano-Scale Materials, Materials Processing and Genomic Engineering

This is the volume for Part 1 including 37 papers selected from 7 symposia of Area A (Energy and environmental materials) and 43 papers from 8 symposia of Area C (Functional materials).

The editors would like to express their thanks to the symposium organizers of the above 15 symposia, the manuscripts peer reviewer and language polisher for their hard work. The special thanks should be given to Mr. Hongtao Wang, Yunfei Liang and Miss Bo Han for their compilation and typesetting for each paper in this volume.

Editors

IUMRS-ICAM 2013
12th IUMRS International Conference on
Advanced Materials

September 22-28, 2013, Qingdao, China

Organized by

Chinese Materials Research Society(C-MRS)

International Union of Materials Research Societies (IUMRS)

Supported by

Ministry of Science and Technology of China

China Association for Science and Technology

National Natural Science Foundation of China

Chinese Academy of Sciences

Chinese Academy of Engineering

Government of Qingdao City, Shandong Province, China

American Institute of Physics