# **Preface**

The present book includes a set of accepted and selected papers from the 2013International Conference on Applied Science, Engineering and Technology (ICASET2013), which is to be held in Qingdao, in May 2013. ICASET2013 is a comprehensive conference, and it is an integrated conference concentrating its focus upon Material Science, Chemistry and Chemical Engineering, Information Technology, Computer Science, Electronic Engineering and Engineering Management, et. al. In this book, you can learn much more knowledge about Applied Science, Engineering and Technology of researchers all around the world. The main role of the proceeding is to be used as an exchange pillar for researchers who are working in the mentioned fields.

All papers included in this book have been peer reviewed through processes administered by the scientific committee before accepted for publication. These papers recorded valuable explorations of the authors in relative fields of Microelectronics and Materials, Applied Chemistry and Chemical Engineering, Information Technology, Computer Engineering and Network Technology, Environmental Science and Management Engineering.

Here, we would like to show our first sincere thanks to all the invited keynote speakers who took the time to contribute with a paper to this book. Secondly, all members of conference committee and reviewers should also be appreciated for their hard work. Thirdly, the authors should be thanked too for their enthusiastic writing attitudes toward their papers. Fourthly, in the ICASET2013 preparation, Qingdao Science Culture Communication Co., Ltd provided professional services, and will continuously give support in the conference services. At last, on behalf of the conference organizing committee, we would like to appreciate Mr. Thomas Wohlbier, Ms. Anne Wohlbier and Trans Tech Publications for their kind and enthusiastic help and support for our conference. Thank you all.

The editors.

# The 2013 International Conference on Applied Science, Engineering and Technology (ICASET2013)

# Organized by:

Qingdao University, China

# **Conference Organization**

#### General Chairman

Prof. Yiqian Wang, Qingdao University, China

### **Program Chairmen**

Prof. Chenghao Guo, Shandong University, China

Prof. Zixu Wang, Nanjing Medical University, China

Prof. Hongliang Li, Qingdao University, China

#### **International Scientific Committee**

Prof. Helge Lemmetyinen, Tampere University of Technology, Finland

Prof. Yi Jin, Qingdao University, China

Prof. Chunlin Li, Qingdao University, China

Prof. Qingshan Kong, Institute of Bioenergy & Bioprocess, Chinese Academy of Sciences, China

Prof. Andy Sun, The University of Western Ontario, Canada

Prof. Yanzhi Xia, Qingdao University, China

Prof. Zonghua Wang, Qingdao University, China

Prof. Michael N. H., University of South Carolina, U.S.A

Prof. Rajkumar Buyya, University of Melbourne, Australia

Prof. Leszek S. C., Louisiana State University, U.S.A

Prof. Qingbin Yang, Qingdao University, China

Prof. Hongzong Si, Qingdao University, China

Dr. Longyun Hao, Qingdao University, China

Prof. Qingbin Yang, Qingdao University, China

Prof. Guangwen Zhou, State University of New York, U.S.A

Prof. Aiping Fu, Qingdao University, China

Prof. Guy Ross, Institut national de la recherche scientifique, Canada

Prof. Yijin, Qingdao University, China

Prof. Yimin Su, Beijing University of Technology, China

Dr. Shendian Wang, Institute of Engineering Thermophysics, Chinese Academy of Sciences, China

Prof. Qihuang, Institute of Oceanology, Chinese Academy of Sciences, China

Prof. Yabuno Hiroshi, University of Tsukuba, Japan

Prof. Ali Cemal Benim, Duesseldorf University of Applied Sciences, Germany

Prof. Guangting Han, Qingdao University, China

Prof. Lijun Qu, Qingdao University, China

Prof. Kunyan Sui, Qingdao University, China

Prof. Junhong Liu, Qingdao University of Science & Technology, China

Prof. Zhimin Li, Ocean University of Zhanjiang, China

Prof. Huarong Guo, Ocean University of China, China

Prof. hongyan Li, Ocean University of China, China

Prof. Lvo Barbi, Universidade Federal de Santa Catarina, Brazil

Prof. Arvind Kumar S., Royal Melbourne Institute of Technology, Australia

Prof. Bing Teng, Qingdao University, China

Prof. Fukai Shan, Qingdao University, China

Prof. Weisen Yu, Qingdao Municipal Center for Disease Control and Prevention, China

# **Local Organizing Committee**

#### Chair

Prof. Yiqian Wang, Qingdao University, China

#### Members

Prof. Peizhi Guo, Qingdao University, China

Dr. Na Na, Qingdao Public Health Bureau, China

Dr. Lei Shang, Qingdao University, China

Dr. Chunyan Li, Qingdao University, China

Dr. Peilong Xu, Qingdao University, China

# Acknowledgement

Trans Tech Publications Inc.

Qingdao Science Culture Communication Co., Ltd