

# Preface

Dear Distinguished Authors and Guests,

The Organizing Committee warmly welcomes you to the 2013 4th International Conference on Mechanical and Aerospace Engineering (ICMAE 2013), held in Moscow, Russia, during July 20-21, 2013.

The aim of ICMAE 2013 is to present the latest research and results of scientists (professors, students, PhD Students, engineers, and post-doc scientist) related to Mechanical and Aerospace Engineering topics. This conference provides opportunities for the different areas delegates to exchange new ideas and application experiences face to face, to establish business or research relations and to find global partners for future collaboration.

After the peer-review process, the submitted papers were selected on the basis of originality, significance, and clarity for the purpose of the conference. The selected papers and additional late-breaking contributions to be presented as lectures will make an exciting technical program. The conference program is extremely rich, featuring high-impact presentation. We hope that the conference results constituted significant contribution to the knowledge in these up to date scientific field.

The proceeding records the fully refereed papers presented at the conference. The main conference themes and tracks are Mechanical and Aerospace Engineering etc. Hopefully, all participants and other interested readers benefit scientifically from the proceedings and also find it stimulating in the process.

On behalf of the organizing committee, I would like to especially thank Anne, Tanja, Dorthé and all the editors from Trans Tech Publications for their great support to ICMAE 2013. Without their excellent editorial work, ICMAE 2013 will not be published so timely and successfully.

Finally we wish all the authors and attendees, from Russia, China, UK, UAE, Czech Republic, Japan, Iran, Korea, Thailand, Turkey, Poland, Algeria, Malaysia, India, United States, Saudi Arabia, Egypt, etc more than 15 countries, a unique, rewarding and enjoyable memory at ICMAE 2013 in dynamic Moscow.

We, Science and Engineering Institute (SciEI), as Professional Organizer for Academic Conferences, will be committed ourselves to make ICMAE more and more professional with fully and enjoyable academic research and discussion platform for authors and attendees. Sincerely as always, we look forward to your consistent attention and support to 5th ICMAE in 2014.

With our warmest regards,

Dr. Amanda F. Wu, Science and Engineering Institute, USA

# Committees

## Honorary Chairs

IEEE Fellow, Prof. Wang Jun, The Chinese University of Hong Kong, Hong Kong

Prof. Adrian Olaru, University Politehnica of Bucharest, Romania

## Conference Chairs

Prof.Vladimir A. Frolov, Samara State Aerospace University, Russia

Prof.Dashnor Hoxha, Orleans University, France

Prof. Kudryavtsev Anatoly A., St. Petersburg State University, Physics Department, Russia

## Program Chairs

Dr. Francisco E. Rivera, Federal Aviation Administration (FAA), USA

Assoc.Prof. Salma BARBOURA, LSPM –UNIVERSITY PARIS 13, France

Prof.Mohamed HABOUSSI, Université Paris, France

## Organizing Co-Chair

Ms. Amanda F. Wu, SClence and Engineering, China Office

## Technical Committee

Prof. Ghulam Abbas, Liverpool Hope University, UK

Prof. Charles h. Lee, California State University, USA

Prof. Adel A. Sharif, California State University Los Angeles, USA

Prof. Hayrettin DÜZCÜKOĞLU, Selcuk University, Turkey

Prof. Ming LIANG, Department of Mechanical Engineering, University of Ottawa, Canada

Prof. S M Sohel Murshed, University of Lisbon, Portugal

Prof. Chuanbo Li, Imperial College London, UK

# Sponsors

Samara State Aerospace University, Russia

Orleans University, France

St. Petersburg State University, Russia