
Introduction

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Biographical notes: Esteban Broitman received his PhD in Physics from the University of Buenos Aires, Argentina in 1997. He has been doing research and teaching at the University of Buenos Aires, Argentina, The College of William and Mary, USA, Carnegie Mellon University, USA, and Linköping University, Sweden. His research aims towards studying, improving and/or developing nanomaterials, coatings, smart surfaces structures, etc., with improved tribological properties. His activities focus on the use of advanced surface engineering as a way of controlling mechanical properties, friction, and wear in machinery and devices at the macro-, micro-, and nano-scales. His is especially world-wide known for the work on carbon-based films (like carbon-nitride coatings) and lately for my research developing novel microtribological and piezoelectric characterization methods. He has published more than 160 papers in scientific per-reviewed journals and proceeding conferences with over 2,300 citations, wrote many chapters in specialised scientific books, holds one patent, and presented numerous oral contributions in conferences. During the last five years, he has been Plenary, Keynote and Invited Speaker in more than 30 international conferences. He has also been a Guest Editor in scientific journals like *Thin Solid Films*, *Surface and Coatings Technology*, *Polimery*, *Polymer and Polymer Composites*, *Coatings*, and *e-Polymers*.

Dumitru Nedelcu is a Professor at the 'Gheorghe Asachi' Technical University of Iasi, Romania and he is involved on fine mechanics and nano-technologies and technologies for obtaining and processing of composite materials. He is the Manager of Fine Mechanics and Nanotechnology Laboratory, President of ModTech Professional Association, International Conference and Editor-in-Chief of the *International Journal of Modern Manufacturing Technologies*. He was a Visiting Professor at TAT, Institute of Engineering, Tokyo, Guest Professor at Joining and Welding Research Institute, Osaka University, Japan, and Visiting Professor at Silesian University of Technology, Poland. He has published more than 160 scientific papers on ISI journals and international conferences proceedings.

1 Introduction

The International Conference ModTech2016 held between 15–18 of June 2016 at the Ramada Hotel in Iași has been a representative scientific event for producers of technology, universities, research institutions, industrial entities where significant national and international scientific achievements have been presented and discussed in the field of manufacturing engineering, composite materials and technology, characterisation, modelling and simulation of mechanical processes, robotics and integrated computer-aided manufacturing, technology transfer, micro and nanotechnologies, maritime engineering and navigation.

The main objectives of ModTech International Conference were to bring together representatives of technology manufacturers, of various state institutions, universities, industry and professional associations, to debate and exchange experiences on important conference topics. Another main objective of the ModTech International Conference was to provide a good networking opportunity for all these groups.

The conference topics focused on the following research areas: engineering of manufacturing processes, advances in composites and technologies, characterisation, modelling and simulation of mechanical processes, robotics and computer integrated manufacturing, technology transfer, micro and nano technologies and maritime engineering and navigation.

Ten papers of high scientific value were presented in the three plenary sessions by Professor Elsayed A. Orady University of Michigan – Dearborn, USA; Professor Esteban Broitman Linköping University, Sweden; Professor Wojciech Sitek Silesian University of Technology, Gliwice, Poland; Professor Toshihiro Ishikawa Tokyo University of Science, Yamaguchi, Japan; Professor Rainer Gadow University of Stuttgart, Germany; Professor Olivera Milosevic Institute of Technical Sciences of the Serbian Academy, Serbia; Professor Makio Naito JWRI, Osaka University, Japan; Professor Hong-Seok Park University of Ulsan, South Korea; Professor Radu Comaneci ‘Gheorghe Asachi’ Technical University of Iasi, Romania; Professor Burak Ozkal, ITU, Metallurgy and Materials Engineering Department, Turkey.

The authors and co-authors of abstracts have been from 25 countries: the USA, Sweden, Poland, Japan, Germany, Serbia, South Korea, Romania, Turkey, Republic of Moldova, Spain, China, India, the Netherlands, Uzbekistan, England, Ukraine, Iraq, Slovakia, Slovenia, Croatia, Bosnia-Herzegovina, Vietnam, Bulgaria and Finland.

This special issue of *IJMPT* (Modern technologies as future solutions for performance products) contains high-quality extended papers which were selected based on completion of the reviewers’ comments. The articles included in this special issue cover a large spectrum on current research activities of engineering, technologies and materials. We hope that the readers will find the articles interesting, and thus pursue a more thorough investigation of the presented problems.

We are also thankful to the Editor-in-Chief, Dr. Mohammed Dorgham for having agreed to bring out a special issue of *IJMPT* containing selected papers presented during ModTech2016 International Conference.