
Introduction

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Biographical notes: Makio Naito is a Professor at the Joining and Welding Research Institute (JWRI), Osaka University. His major is powder technology, and focusing on innovative powder and nanoparticle processing to develop advanced materials about energy and environmental issues. He is the President of The Society of Powder Technology in Japan from 2015. He has received several awards including Richard M. Fulrath Award from The American Ceramic Society in 2002. He is a Fellow of The American Ceramic Society from 2010, and a professional academician member of World Academy of Ceramics from 2012.

Jose Manuel Torralba holds two engineering degrees, in Metallurgical Engineer in 1982 and in Armament and Material in 1986. He also holds two PhD degrees, in 1985 and 1994. He is a Professor of Materials Science and Engineering at the University Carlos III Madrid since 1996. Today, he is also the Deputy Director of IMDEA Materials Institute. He has published more than 450 scientific papers (from those 190 included in the Journal Citation Report database) and supervised 25 PhD theses and 60 Diploma theses. He received different awards and recognitions like the Honoris Causa Doctorate by the Technical University of Cluj-Napoca (Romania) (in 2001) and by the University of Craiova (Romania) (in 2007), and the Special Services Award of the European Powder Metallurgy Association (in 2013). He is a Fellow of the American Powder Metallurgy Institute since 2015.

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. He is the President of ModTech Professional Association in Modern Manufacturing Technology and ModTech International Conference and Editor-in-Chief of *International Journal of Modern Manufacturing Technologies*. He was a Visiting Professor at Tokyo University of Agriculture and Technology, Institute of Engineering, Tokyo and Guest Professor at Joining and Welding Research Institute, Osaka University, Osaka, Japan. He has published more than 140 scientific papers on ISI journals and international conferences proceedings. He serves on various journals and conferences review committees.

Jae-Ho Jeon is a Principal Research Scientist of Nano-Functional Materials Lab., at the Korea Institute of Materials Science. He received his PhD degree from the Korea Advanced Institute of Science and Technology, Daejeon, Korea. He specialises in nano-powder synthesis, piezoelectric ceramics, sintering and interfacial phenomena. He is one of the leading research experts in the field of templated grain growth of lead-free piezo ceramics. He served as an EU-FP NMP NCP of Korea, a council member of LGM-AS in World Academy of Ceramics, and the Program Chair of the 3rd Korea-Slovenia Joint Workshop on Advanced Materials.

Olivera B. Milosevic leads the Advanced Materials Innovative Processing in the Institute of Technical Sciences of SASA, Belgrade, Serbia. She is an awardee of the JST and JSPS Fellowships, Japan, a Sabbatical grant from the Ministry of Science and Education, Madrid, Spain, a holder of the Catedra de Excelentia and Visiting Professor at the University Carlos III, Madrid, Spain, Visiting Researcher at JFCC, Nagoya and Visiting Professor at Osaka University, Japan; she is an Editor and reviewer of several peer reviewed journals and has participated in a number of conferences organisation (ICCCI, Japan, EUROMAT, AMPT, Spain, SeCerS, Serbia, etc.).

Loredana Santo graduated with honours in Aeronautic Engineering in 1994. Since 2005, she has been an Associate Professor in the Department of Industrial Engineering of University of Rome Tor Vergata, Italy. She is a coordinator and co-organiser of international minisymposia, member of scientific committee of international conferences, and member of editorial board of international journals. Her scientific activity has been mainly focused on the following topics: non-conventional processes, micromachining, innovative materials and processes. She is an author of more than 120 scientific papers.

Modern technologies must be seen as tools used to help develop industrial areas of activity which implicitly means improving life. Firstly, modern technologies should be considered from the viewpoint of their impact on engineering and the advantages or disadvantages brought to society. Secondly, modern technologies should be analysed through their contribution to products quality increase.

The main organiser of the ModTech2014 International Conference, Modern Technologies in Industrial Engineering, was the Professional Association in Modern Manufacturing Technologies, ModTech Iasi, Romania. The co-organisers were the Silesian University of Technology, Faculty of Mechanical Engineering from Gliwice, Poland and the Constanta Maritime University from Constanta, Romania. The conference was held at the Silesian University of Technology, Gliwice, Poland between July 13–16, 2014.

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.

The invited speakers were as follows: Professor Makio Naito, Osaka University, Japan; Dr. Radhey Shyam Beniwal, CSIR-NISCAIR, India; Professor Leandru Bujoreanu, 'Gheorghe Asachi' Technical University of Iasi, Romania; Dr. Jae-Ho Jeon – Institute of Materials Science, South Korea; Professor Jose Manuel Torralba, University Carlos III, Madrid, Spain; Professor Hidehiro Kamiya, TAT-BASE, Tokyo, Japan; Professor Andrzej Buchacz, Silesian University of Technology, Gliwice, Poland; Professor Hong Seok Park, University of Ulsan, South Korea; Professor Loredana Santo, Tor Vergata University of Rome, Italy; Professor Pavel Topala, 'Alecu Russo' University of Balti, Republic of Moldova; Dr. Ildiko Peter, Politehnica University of Torino, Italy.

The authors and co-authors were from various countries worldwide, namely: Japan, South Korea, Romania, Poland, Italy, Iraq, India, Serbia, Portugal, Russia, Spain, Republic of Moldova, Uzbekistan, Ukraine, Turkey, Czech Republic and Mexico.

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. M.A. Dorgham for having agreed to bring out a special issue of *IJMPT* containing selected papers presented during ModTech2014 International Conference.