

## Preface

This volume includes selected papers presented at the 7<sup>th</sup> edition of the International Conference on Material Science and Engineering, held in Galati, Romania, on May 19-21, 2016. The conference was organized by the Department of Materials Science and Engineering, Faculty of Engineering, "Dunărea de Jos" University of Galati, under the patronage of the Romanian Academy of Technical Sciences and the Romanian Chemistry Society, with the participation of Professor Rodrigo Martins, former president of the European Materials Research Society and present day president of the E-MRS Senate.

This edition has brought together, for the first time, three scientific events, already traditional for the field of materials science and engineering at "Dunărea de Jos" University of Galati: *UgalMat*, *ARTCAST* and *UgalNano*.

The conference was attended by 94 participants, including outstanding scientists, as well as young researchers from representative universities and research institutes in Romania and some other European countries (Portugal, Germany, Hungary, Israel). 8 invited talks and 86 contributory papers in oral and poster sessions were delivered in the fields of advanced materials and technologies, nanomaterials and nanotechnologies. Following the peer review process, 39 papers were selected for publication in this volume, and were grouped into two sections. The papers in the first section - Advanced Materials and Technologies in Industrial Production - address the topics of metals and alloys, composite materials and structures, surface processes and surface characterization, mathematical modeling of materials processing and materials properties. Those in the second section - Nanotechnologies and Functional Materials- address focus on thin films for electronic applications, nanofluids, photocatalytic and antimicrobial nanoparticles, protective composite coatings and submicronic structured shape memory alloys.

During *UgalMat 2016* conference - with the traditional section *Casting, from Technique Rigour to Art (ARTCAST)* dedicated to materials and techniques used to obtain art objects-, a presentation of contemporary metal sculptures was organized, and an exhibition of old Romanian sculpture and painting originated in the Galati area was visited.

We address warm thanks to the participating authors for their valuable contributions, and express our gratitude to the scientific committee for the dedicated efforts in reviewing the papers published in this volume.

Conference Chair,  
Professor Viorica Musat

## Committees

### Conference Chair:

MUŞAT Viorica, Romania

### Honorary Committee

BÎRSAN Iulian Gabriel, Romania

BORŞ Ionel, Romania

CĂNĂNĂU Nicolae, Romania

DRUGESCU Elena, Romania

MITOŞERIU Olga, Romania

NICOLAE Avram, Romania

OPREA Florea, Romania

SOFRONI Laurenţie, Romania

### Scientific Committee

**Chair:** MARTINS Rodrigo, Portugal

ANICĂI Liana, Romania

ANTONIA Iulian, Romania

BANU Mihaela, USA

BENEA Lidia, Romania

BRAZ FERNANDES Francisco Manuel,  
Portugal

BRÂNZEI Mihai, Romania

BUJOREANU Leandru, Romania

CARCEA Ioan, Romania

CELIS Jean Pierre, Belgium

CIUCA Sorin, Romania

DOICIN Cristian, Romania

FETECĂU Cătălin, Romania

FORTUNATO Elvira, Portugal

GHERGHESCU Ioana, Romania

GHIBAN Brânduşa, Romania

JANK Michael, Germany

LAKATOS-VARSANYI Magda, Hungary

MAIER Cătălina, Romania

MATHEW M.T., USA

MIHĂIŢĂ Mihai, Romania

MINEA Alina, Romania

MOISA Ştrul, Israel

MUNTEANU Daniel, Romania

NICOLAE Maria, Romania

PALADE Liviu Iulian, France

PĂUNOIU VIOREL, Romania

POPA Valentin, Romania

PONTHIAUX Pierre, France

PREDESCU Cristian, Romania

PURCARU George Sorin, Romania

RAMANAVICIUS Arunas, Lithuania

RIPOŞAN Iulian, Romania

SAMPATH V., India

SAND Wolfgang, Germany

SANDU Ion, Romania

SCUTELNICU Elena, Romania

SILVA Rui, Portugal

SIMITI Ioan Vida, Romania

STAN Felicia, Romania

ȚIEREAN Mircea Horia, Romania

TUDOR IOAN, Romania

VAN DER BRUGGEN Bart, Belgium

VĂDEANU Adrian, Romania

VLAD Maria, Romania

WENKERT Rodica, Israel

### Organizing Committee

**Chair:** POTECAŞU Florentina

FETECĂU Cătălin

DOBROVICI Sorin

GURĂU Gheorghe

VASILESCU Elisabeta

BORDEI Marian

CIOCAN Anișoara

DRAGOMIR Ştefan

RADU Tamara

NEGOIŢĂ Daniela

CAZACU Nelu

BALTĂ Ştefan

BALINT Lucia

CONSTANTINESCU Stela

DRĂGAN Viorel

POTECAŞU Octavian

VASILIU Adrian

ALEXANDRU Petrică

BOICIUC Simona

GURĂU Carmela

HANGANU Doru

PETREA Ionel

CIUBOTARIU Alina

MARIN Mihaela

PAPADATU Carmen

### Conference Secretariat

BALINT Simion  
TUDOR Beatrice  
MARIN Florin Bogdan  
BUȘILĂ Mariana  
HERBEI Emanuela  
BODOR Marius  
ISTRATE Gina

NEACȘU Marian  
BASLIU Vasile  
GHISMAN Viorica  
ALEXA Alexandru  
FILIP Ana  
SEVERIN Ileanuța  
DĂNĂILĂ Eliza

## Organizing Partners and Sponsors



Academy of Technical Sciences of Romania (ASTR)



Romanian Chemical Society



Alumni Association of the Faculty of Mechanical Engineering in Galati



The General Association of Engineers in Romania (A.G.I.R.)



ArcelorMittal Galați



Damen Shipyards Galați



Bureau Veritas România



S.C. Marinescu Trading Co S.R.L.  
Tulcea



S.C. Iprolam S.A. București



Public Service Ecosal - Galați



S.C. NITECH S.R.L.



S.C. Saltempo S.R.L. Galați



BRD Groupe Societe Generale S.A.



S.C. Rulmenți S.A. Bârlad