

# FINAL ANNOUNCEMENT AND CALL FOR PAPERS

Abstract deadline: 21<sup>st</sup> May, 2018

Conference and exhibition will be held  
at the Main Campus  
of the Warsaw University of Technology  
Plac Politechniki 1 - Warsaw, Poland

17<sup>th</sup> - 20<sup>th</sup> September 2018



## 2018 Fall Meeting

The conference will include:  
21 parallel symposia, one plenary session, one exhibition and much more

[www.european-mrs.com](http://www.european-mrs.com)



## **E-MRS 2018 FALL MEETING**

---

17<sup>th</sup>-20<sup>th</sup> September  
Warsaw University of Technology - POLAND

## Introduction

The European Materials Research Society (E-MRS) was established in 1983 through the initiative of individual European Materials scientists. A number of European materials scientists who attended the MRS meetings in the U.S.A. realised that such a society could be of benefit to Europe to enhance the links between materials science and industry and to provide a voice for the materials community. Most of the problems facing the world such as energy supply and health will be solved only by breakthroughs in materials science. It is vital that the outcomes of research are utilised through technological experience and innovation for the benefit of mankind. The Fall Meeting provides the opportunity to exchange ideas, expand one's knowledge and make new contacts. The conference will consist of 22 parallel symposia and a plenary session and provides an international forum to discuss recent advances in the field of materials science. The conference will be augmented by an exhibition of products and services of interest to the conference participants. The Conference will be held at the Central Campus of the Warsaw University of Technology, from 17th to 20th September 2018. It is the 17th E-MRS Fall Meeting following its launch in 2002 to run in parallel to the Spring Meeting in France.

Don't miss it! We look forward to welcoming you to Warsaw and your active contribution and participation in the conference.

## The European Coordination Group



**George KIRIAKIDIS**  
President

IESL/FORTH  
100, N. Plastira str. Voutes  
Heraklion 70013 Crete, Greece  
[kiriakid@iesl.forth.gr](mailto:kiriakid@iesl.forth.gr)



**Peter WELLMANN**  
Vice President

Materials Department 6  
Electronic Materials and Energy Technology  
University of Erlangen  
Martensstr. 7, 91058 Erlangen, Germany  
[peter.wellmann@www.uni-erlangen.de](mailto:peter.wellmann@www.uni-erlangen.de)



**Paul SIFFERT**  
General Secretary

E-MRS Headquarters  
BP. 20, F-67037 Strasbourg cedex 2, France  
[paul.siffert@european-mrs.com](mailto:paul.siffert@european-mrs.com)

## The Conference Chairpersons:



**Valentin CRACIUN**

National Institute for Laser, Plasma,  
and Radiation  
Physics Laser Department  
Bucharest  
Romania  
[valentin.craciun@infipr.ro](mailto:valentin.craciun@infipr.ro)



**Malgorzata LEWANDOWSKA**

Faculty of Materials Science &  
Engineering  
Warsaw University of Technology  
141 Woloska Street, 02-507 Warsaw,  
Poland  
[Malgorzata.lewandowska@pw.edu.pl](mailto:Malgorzata.lewandowska@pw.edu.pl)



**Joerg K.N. LINDNER**

Universität Paderborn  
Fakultät für Naturwissenschaften  
Department Physik - A4.226  
Warburger Straße 100  
33098 Paderborn, Germany  
[lindner@physik.upb.de](mailto:lindner@physik.upb.de)



**Evelyne MARTIN**

Institute of Electronics,  
Microelectronics and  
Nanotechnology (IEMN)  
Villeneuve d'Ascq  
France  
[evelyne.lampin@univ-lille1.fr](mailto:evelyne.lampin@univ-lille1.fr)

## The Conference Organizers:



European Materials Research  
Society



Warsaw University  
of Technology



Polish Materials Science  
Society



Institute of Physics  
PAN



Plenary Session (Wednesday morning, 19<sup>th</sup> September)

1. Presentation of the Jan Czocharlski Award to Professor Herbert Gleiter, The Research Centre Karlsruhe (INT), Germany  
Lecture by Professor Herbert Gleiter  
*"Nano-glasses: The Way to a World of New Materials with New Structures and Technological Applications"*
2. Lecture by Professor Veena Sahajwalla, Centre for Sustainable Materials Research & Technology (SMaRT@UNSW), Australia
3. Lecture by Professor Themis Prodromakis, Electronic Materials & Devices Research Group, Zepler Institute, UK  
*"Harnessing the power of the brain with metal-oxide nano-electronics"*

## Poster Sessions:

1. Monday, 17<sup>th</sup> September - 17:30 – 19:30
2. Tuesday, 18<sup>th</sup> September - 17:30 – 19:30

Scheduled Symposia (17<sup>th</sup> – 20<sup>th</sup> September):**MATERIALS FOR ENERGY**

- Symposium A : Materials for energy application  
 Symposium B : Battery and energy storage devices  
 Symposium C : Perovskite solar cells: surface, interface and materials aspects

**LAYERED, HYBRID AND BIOMATERIALS**

- Symposium D : Multifunctional advanced composite materials: from idea to market  
 Symposium E : Bioinspired and biointegrated materials as new frontiers nanomaterials VIII  
 Symposium F : Surfaces and interfaces in multilayered thin films and nano-composites  
 Symposium G : Recent progress in superconductivity of two-dimensional layered systems  
 Symposium H : Emerging layered functional materials and their characterization

**MODELLING**

- Symposium I : Atomic-scale design protocols towards energy, electronic, catalysis and sensing applications  
 Symposium J : Theory and simulation in physics for materials applications

**NANOMATERIALS**

- Symposium K : Nanomaterials- electronics & -photonics  
 Symposium L : Advances in nanoparticles: synthesis, characterization, theoretical modelling, and applications  
 Symposium M : Organized nanostructures and nano-objects: fabrication, characterization and applications  
 Symposium N : New atomic layer deposition approaches towards functional materials and devices

**SEMICONDUCTORS AND ELECTRONIC MATERIALS**

- Symposium O : Diamond for electronic devices III  
 Symposium P : Epitaxial oxide films for electronic applications  
 Symposium Q : Phase transitions and properties of ferroics in the form of single crystals, ceramics and thin films  
 Symposium R : New frontiers in wide-bandgap semiconductors and heterostructures for electronics, optoelectronics and sensing  
 Symposium S : Spin-dependent phenomena in semiconductors, 2D materials and topological insulators  
 Symposium U : Monolithic and heterogeneous integration of advanced materials & devices on silicon  
 Symposium V : High pressure synthesis & characterization of functional materials

**Introduction and scope:**

Composite materials are rapidly becoming materials of choice within many industrial applications, in particular aviation, transport, space, construction and building field, ecology, sport, biomedicine, electronics, energy sector, including renewable energetic, and etc. Nowadays, the biggest challenges coming from the technological transfers for composites growth, the increasing consumption of this materials and numerous innovations to feed the market. Variation of the nature of components, using of nanocomponents and nanoadditives to the materials of matrix and to the reinforcement component, development of new production technologies and new kinds of reinforcements including textiles, fibers, meshes and etc. allow to create multifunctional materials with given unique complex of service characteristics for different applications, including extreme performances. New and unique possibilities are opening due to development of new classes of polymer based binders for so called advanced ultra light weight materials and composites. Furthermore development of the additive technologies, 3-D printing technologies of composite production also ensure the new areas of applications for the composites with unique complex of service parameters. All these materials will be in the main focus of symposium D activity in 2018 year.

For advanced composites materials based on metal, ceramic, polymer matrix and reinforced by various particles, fibers, textiles, meshes or modified by nanocomponents of different nature which are traditionally used in aeronautic, energy sector, automobile, space and transport industry, ecology, machine building, construction sector, biomedicine and electronics the task of creating materials with given complex of service parameters ensuring their safety and reliability became more and more actual. Production of composite materials with given complex of service parameters together with decreasing of their sizes and costs of their production allow essentially widen their functionalities and find the new ways of their application. Therefore the task of creation of composite materials and complex structures on the basis of them using modern methods and materials for their joining will be the key topic of proposed symposium. Modern methods of modeling for advanced ceramics, composites and complex structures production, micro- and macrostructure and forecasting of the physical and chemical properties allow successfully decide such kind of tasks. The results of several international projects concerning new methods of production, testing and applications of composite materials reinforced by carbon fibers and carbon structures and metal and ceramic composites for thermal protection system for space applications will be presented at proposed symposium. Special time will be devoted to innovative research, to the questions of technology transfer and international cooperation in the field of advanced ceramic and composite materials.

**Hot topics to be covered by the symposium:**

- Fundamental study, modelling of technology processes, structure and properties, including phase equilibrium diagrams for multicomponent systems
- Production technologies for advanced composites powders and their properties, including various kinds of nanoadditives and their influence upon service properties of final product
- Production technologies for composites coatings and their properties, including multilayer coatings and their new regulated functionalities
- Production technologies for bulk composites and their properties, including novel sintering technologies for complex compounds and structures, 3-D printing technologies
- Complex ceramic and composite structures for extreme performances with special attention for materials for aviation and space applications
- Nanoceramic and nanocomposites: peculiarities of their structure and properties
- Novel techniques for advanced ceramic and composite materials characterization
- New smart lightweight nano-enabled materials with enhanced functionalities
- Novel areas of application of advanced ceramic and composites, including space, transport, biomaterials, micro- and nanoelectronic, constructional ones
- Results and perspectives of international cooperation in the field of creation of advanced ceramic and composite materials
- Recycling technologies, life cycle assessments for raw materials and final composites
- Production of secondary composites for various applications including tribological ones
- Advanced materials for additive manufacturing

**Symposium Organizers:****Iryna BILAN**

Frantsevich Institute for Problems of Materials Sciences  
3 Krzhyzhanovsky Str, 03142, Kyiv, Ukraine  
[belanira2014@gmail.com](mailto:belanira2014@gmail.com), [belanira@bk.ru](mailto:belanira@bk.ru)

**Mikolaj SZAFRAN**

Faculty of Chemistry, Warsaw University of Technology  
ul. Noakowskiego 3, 00-664 Warsaw, Poland  
[szafran@ch.pw.edu.pl](mailto:szafran@ch.pw.edu.pl)

**Dmitry G. ESKIN**

Brunel University  
Brunel Centre for Advanced Solidification Technology,  
Kingston Ln, London, Uxbridge UB8 3PH, U.K.  
[Dmitry.Eskin@brunel.ac.uk](mailto:Dmitry.Eskin@brunel.ac.uk)

Deadline for abstract submission: **21<sup>st</sup> May, 2018**

[www.european-mrs.com](http://www.european-mrs.com)