

# Preface

CIMTEC 2016 was held in Perugia, Italy on June 5-9, 2016 endorsed by the Italian National Research Council (CNR), the Italian National Agency for New Technologies, Energy and the Environment (ENEA) and the World Academy of Ceramics. This high qualitative and comprehensive congressional event, similarly to the previous editions, has been designed to encompass and derive synergism from a broad interdisciplinarity network capable of offering opportunities for identifying and exploring new directions for research and production. The above based on the view that ongoing and future innovations require at an ever increasing extent a complex array of interconnections among scientific research, innovating technology and industrial infrastructure.

CIMTEC 2016-7<sup>th</sup> Forum on New Materials consisted of two major events: the 5<sup>th</sup> International Conference “Smart and Multifunctional Materials, Structures and Systems” featuring 16 International Symposia and the 11<sup>th</sup> International Conference “Medical Applications of New Biomaterials and Nanotechnology”.

A balanced, high quality programme of invited and contributed papers resulted from the over eight hundred scientific and technical contributions effectively presented during the working days to a large international audience coming from about fifty countries throughout the world.

The 6 volumes (from A to F) which constitute the Official Proceedings of CIMTEC 2016 (5 for the 5<sup>th</sup> International Conference “Smart and Multifunctional Materials, Structures and Systems”, 1 for the 11<sup>th</sup> International Conference “Medical Applications of New Biomaterials and Nanotechnology”) include a selection of the papers presented. Having most of them been written by authors whose mother tongue is not English, considerable revision of the original texts was often required. Even so, in order to allow the scientific and technical community to have access to the proceedings volumes within a reasonable length of time, compromise was necessary in regard to the quality of writing, and papers containing language imperfections were considered acceptable provided that their technical content was adequate and easily understandable.

## Part A

**Symposium A** - Stimuli Responsive and Multifunctional Polymers: Progress in Materials and Applications

**Symposium H** - Electroactive Polymers and Shape Memory Polymers: Advances in Materials and Devices

**Symposium B** - State-of-the-art Research and Applications of Shape Memory Alloys

## Part B

**Symposium C** - Recent Advances in Multiferroic and Magnetoelectric Materials and Applications

**Symposium D** - Advances in Inorganic Luminescent Materials and Applications

**Symposium E** - Progress in Metamaterials Research

**Symposium F** - Graphene and Other Emerging 2D-layered Nanomaterials: Synthesis, Properties and Potential Applications

## Part C

**Symposium I** - New Concepts and Advances in Photocatalytic Materials for Energy and Environmental Applications

**Symposium J** - Functional Nanomaterials for New Generation Solid State Gas Sensors

**Symposium K** - Non-volatile Memory Devices: materials, emerging concepts and applications

Part D

**Symposium L** - Smart and Interactive Textiles

**Symposium M** - Next Generation Micro/Nano Systems

**Symposium N** - Progress in Wearable/Wireless and Implantable Body Sensor Networks for Healthcare Applications

**Symposium O** - Mining Smartness From Nature. From Bio-inspired Materials to Bionic Systems

Part E

**Symposium P** - Embodying Intelligence in Structures and Integrated Systems

Part F

**11th International Conference** "Medical Applications of Novel Biomaterials and Nanotechnology"

The Editor, who also acted as the Chairman of CIMTEC 2016, would like to express his sincere appreciation to all the Institutions and Professional Organizations involved in the congress, to the members of the International Advisory Committees, the Programme Chairs, the Lecturers and authors of Poster contributions, the technical staff of Techna Group, and to the many others who directly or indirectly contributed to the organization allowing a very valuable scientific programme could be arranged.

It is therefore expected for the Proceedings of CIMTEC 2016 to constitute a further valuable contribution to the literature in the field.

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