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6th International Conference on Nanotechnologies and Biomedical Engineering

Proceedings of ICNBME-2023, September
20–23, 2023, Chisinau, Moldova -
Volume 2: Biomedical Engineering
and New Technologies for
Diagnosis, Treatment,
and Rehabilitation



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Biomedical Engineering and New Technologies
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Preface

This volume presents the Proceedings of the 6th International Conference on Nanotechnologies and Biomedical Engineering (ICNBME), which was held on September 20–23, 2023, in Chisinau, Republic of Moldova. ICNBME-2023 continued the series of international conferences in the field of nanotechnologies and biomedical engineering with the main goal focused at bringing together scientists and engineers dealing with fundamental and applied research for reporting on the latest theoretical developments and applications in the fields involved.

The conference covered a wide range of subjects of primary importance for research and development such as nanotechnologies and nanomaterials, bio-micro/nanotechnologies and devices, biomaterials for medical applications, biosensors and bioinstrumentation, biomedical signal and image processing, bioinformatics and computational biology, medical physics and biophysics, molecular, cellular and tissue engineering, clinical engineering, health technology management and assessment, innovation, development and interdisciplinary research, nuclear and radiation safety and security, medical physics and radiation protection, new technologies for diagnosis, treatment and rehabilitation and personalized approaches in medicine.

The papers included in the Proceedings reflect the results of multidisciplinary research undertaken by about one hundred of groups worldwide. Special attention is paid to the development of novel nanotechnologies and nanomaterials, in particular of bio-nanotechnologies and bio-nanomaterials. New biocompatible materials are proposed for use in regenerative medicine, cellular and tissue engineering. Interesting data on novel chemical and biosensors are reported which are based on nanostructured metal oxides and hybrid nanocomposite materials. A wide range of new technologies for diagnosis, treatment and rehabilitation and personalized approaches in medicine are also presented.

Considerable progress has been achieved at the intersection of nanotechnologies, information technologies and biomedicine as, for example, in health informatics, e-health, telemedicine, biomedical instrumentation and signal processing. New theoretical and experimental results are highlighted in such fields as meta-materials, aeromaterials, micro-opto-electronic and photonic materials, photovoltaic structures, quantum dots, one- and two-dimensional nanomaterials, 3D nanoarchitectures and multifunctional hybrid materials like sandwich and core-shell structures, etc. The Proceedings reflect the state of the art in controlling the properties of several classes of nanocomposite materials for important future applications in various fields.

We hope that the papers included in the ICNBME-2023 Proceedings will be of interest for established researchers working in multidisciplinary fields of science and technology, young scientists, students and broad community wishing to get up-to-date information on progress in the fast-developing areas of nanotechnology and biomedical engineering.

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