Editorial: Special issue “NANO 2019”

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The special issue contains the manuscripts with contributions presented at the international research and practice conference “nanotechnology and nanomaterials” (NANO-2019) that was held August 27–30, 2019 at Lviv Polytechnic National University. The NANO-2019 Conference was organized by the Institute of Physics of NAS of Ukraine together with University of Tartu (Estonia), University of Turin (Italy) and Pierre and Marie Curie University (France). The conference focuses on the latest advances in nanosciences and nanotechnologies and promotes profound scientific discussions between scientists and researchers from various fields from classic physics to biotechnology. Nanotechnology is becoming an important field of diagnostics in physics, chemistry and medicine. The special issue disseminates interdisciplinary knowledge and scientific news on cutting-edge research in various nano-related research fields.

The NANO-2019 allowed the participants, including young scientists, to familiarize with current research and application problems in this area and thus to promote further implementation of nanotechnologies into innovations according to public needs. From year to year, the annual

international NANO conference grows and attracts more attention and participants. In 2019 the Organizer Committee of NANO 2019 Conference had received more than 600 application forms from about 30 countries of the world. The conference also gave the opportunity to young and early-career researchers to attend lectures of internationally recognized experts and roundtable discussions on the emerging fields in nanosciences and nanotechnologies.

The NANO-2019 conference brought together leading scientists and young researchers from many countries of the world. The conference topics were as follows: nanobiotechnology for health-care; nanochemistry and biotechnology; nanocomposites and nanomaterials; nanoobjects microscopy; nanooptics and photonics; nanoscale physics; nanostructured surfaces; physico-chemical nanomaterials science.

This special issue of NANO-2019 conference consists of top research articles covering all aspects of this multidisciplinary science, including biotechnology, electronics and photonics, quantum phenomena, sensing, patterning and fabrication, nanomaterial synthesis and the properties analysis. Here you can find new knowledge which includes, without being limited to, the following themes: Extraction of peroxidase enzyme from different vegetables for biodegradation of vat dyes; Pharmacotherapy of resistant enteric pathogens in combination with medicinal plants extracts and antibiotics; about optical and electrical properties of different types of metal complex nanocomposites; the influence of spent gases recirculation on carbon nanomaterial yield; effect of ultrasonic treatment on the thermal oxidation of detonation nanodiamonds; about the nonlinear optical response in liquid crystal cells containing gold nano-island films; synthesis of Ag₂S nanoparticles, the study of their properties and bioimaging applications; phenomenological model of giant piezoelectric effect in GaSe layered crystals; plasmonic enhancement of light to improve the parameters of solar cells; epitaxial fabrication of 2D materials of group IV elements, etc.

In addition, the special issue “NANO-2019” presents different types of Nanobiotechnology application-oriented on

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frontier areas of research in the hybrid discipline of Nanoscience and biotechnology with an equivalent contribution, such as novel nanocomposite materials of silver-exchanged clinoptilolite with pre-concentration of $\text{Ag}(\text{NH}_3)_2^+$ in water possess enhanced anticancer action; “Green” synthesis of different types of nanoparticles, the study of their properties and applications; pharmacotherapy of resistant enteric pathogens in combination with medicinal plants extracts and antibiotics; physico-chemical properties of biogenic SiO_2 nanoparticles obtained from agriculture residue; vibrio cholerae dynamics in drinking water; mathematical and statistical analysis, etc. The special issue disseminates interdisciplinary knowledge and scientific news on cutting-edge research in various nano-related research fields.

The special issue “NANO-2019” is intended for all stakeholders in nanoscience and nanotechnology research

from PhD students, researchers, technicians to industrial engineers.

Compliance with ethical standards

Conflict of Interest The author declare that they have no conflict of Interest.

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