Editorial: special issue “NANO 2020”

Olena Fesenko¹

Published online: 9 September 2021
© King Abdulaziz City for Science and Technology 2021

Keywords Nanomaterials · Nanooptics · Nanobiotechnology · Nanochemistry · Nanoparticles · Nanoelectronics

The special issue contains the manuscripts with contributions presented at the international research and practice conference “Nanotechnology and nanomaterials” (NANO-2020) that was held in Lviv from August 26 to 29, 2020. 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. Last year demonstrated progress in nanotechnology for COVID-19 prevention, diagnostics and treatment too. The special issue disseminates interdisciplinary knowledge and scientific news on cutting-edge research in various nano-related research fields.

The NANO-2020 allowed the scientists from different countries, including young scientists, to familiarize with

current research and application problems in this area and thus to promote further implementation of nanotechnologies into innovations in accordance with public needs. From year to year, the annual international NANO conference grows and attracts more attention and participants. Due to COVID, NANO-2020 was held in combined format: online and offline. The Organizer Committee of NANO 2020 Conference had received more than 600 application forms from about 25 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 conference topics were as follows: nanobiotechnology for health-care; nanochemistry and biotechnology; nanocomposites and nanomaterials; nanoobjects microscopy; nanooptics and photonics; nanoplasmonics and surface-enhanced spectroscopy; nanoscale physics; nanostructured surfaces; physico-chemical nanomaterials science.

This special issue of NANO-2020 conference consists of top research articles covering all aspects of this multidisciplinary science, including biotechnology, optics and photonics, quantum phenomena, sensing, nanomaterial synthesis and fabrication, and the properties analysis. Here you can find new knowledge which includes, without being limited to, the following themes: synthesis of nanocomposite hydrogels, antibacterial activity of silver-doped titanium dioxide and “green” synthesis of Au nanoparticles, ferronematics-liquid crystal nanocomposites filled with magnetic nanoparticles; enhanced, effect of light trapping in solar cells, non-linear optical properties of bimetallic Ag/Au nanoparticles, synthesis and application of carbon-based nanocomposites, eco- and biocompatibility of nano-Ti-, Mo-, Zn-coated chitosan film for medicine and electronics etc.

Also, this special issue “NANO-2020” presents different types of nanobiotechnology and nanochemistry application oriented on frontier areas of research in the hybrid

✉ Olena Fesenko
fesenko@iop.kiev.ua

¹ Head of International Science and Innovation Department,
Head of “Surface Enhanced Spectroscopy (SES)”
Laboratory, Institute of Physics the National Academy
of Science of Ukraine, Kyiv, Ukraine

discipline of nanoscience, biotechnology and chemistry with an equivalent contribution, such as using different metal and semiconductor nanoparticles for medicine; marine biocolloid geoecology; using graphene-like materials for nanoelectronics and nanooptics; using different types of nanocomposites and nanoparticles for nanochemistry, etc.

The special issue “NANO-2020” is intended for all stakeholders in nanoscience and nanotechnology from PhD students, researchers, technicians to industrial engineers.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.