

NANOCON'24 confirmed continual shift of nanotechnology research to industrial and medicinal applications

The 16th NANOCON international conference, which took place in Brno on October 16-18, 2024, demonstrated significant progress in target-oriented nanotechnology research. For **212 participants from 28 countries** in total **71 lectures** and an exhibition of **118 posters** were prepared. The Czech Society for New Materials and Technologies is the co-organiser of this conference.

The opening **plenary talk** of Professor **Iván Morá-Seró** from the Institute of Advanced Materials (INAM), University Jaume I, Spain, outlined amazing properties of halide perovskite nanoparticles, which revolutionized the photovoltaic field in the last decade. Also, other lectures and posters being demonstrated this year in the NANOCON confirmed, that just 65 years since the American physicist and Nobel Prize laureate Richard Feynman introduced the concept of nanotechnology in his famous lecture "There's Plenty of Room at the Bottom" nanotechnology research is moving significantly to specific applications and to targeting socio-economic challenges, particularly sustainable future and high-quality medical care.

For example, Assoc. Prof. **Karolína Schwarzová-Pecková** from the Charles University in Prague, CZ, presented the possibilities of structured diamond surfaces for development of electrochemical biosensors. **Marco Altomare** from the University of Twente presented the progress in the use of dewetted nanoparticles as catalysts for electro- and photo-catalysis. Professor **Karel Bouzek** from the University of Chemical Technology Prague, CZ, in his talk explained some engineering aspects of the polymer electrolyte membrane (PEM) fuel cells being developed mainly for transport applications. Professor **Bengt Fadeel** from the Karolinska Institutet, Sweden, in his plenary talk turned attention of the audience to the potential hazards of engineered nanomaterials for human health.

More than one third of all NANOCON conference participants were students of doctoral or postdoctoral programs. In the competition for **the best lecture for a young scientist** under the age of 33 in total 23 participants competed. The winner was Anna Jančík-Procházková, a postdoctoral student at the National Institute for Materials Science (NIMS) in Tsukuba, Japan, by her lecture focused on nano-architectonics as a tool for designing nanorobots for environmental remediation. The three honourable mentions were awarded, one of them to Dae-Duk Kim from the Seoul National University, Republic of Korea, for his talk dedicated to alendronate-decorated polymeric nanoparticles for bone tumour-targeting and retention.

The prize for **the best poster** won Areej Fatima from the Masaryk University in Brno, the Czech Republic. In her poster she demonstrated how polyamide nanofibers with graphitic carbon nitride can be applied for efficient removal of pollutants from wastewaters, particularly in terms of pharmaceutical contaminants.

The Czech nano-community was presented in the NANOCON by experts from 14 Czech universities and seven institutes of the Czech Academy of Sciences (CAS). After several problematic covid years **participants from abroad** came back to the NANOCON. They made-up almost 40 % of all participants. They came not only from neighbour and geographically close countries (particularly from Slovakia, Poland and Germany), but also from distant countries like Taiwan, South Korea, Japan, Malaysia, India or Israel. And there were also **representatives of nine companies** presenting scientific technologies, equipment or nanomaterials.

In the **Czech-Taiwanese Symposium**, hold on October 17, 2024, main research directions and results of mutual collaboration were presented.

Next information is available at www.nanocon.eu.