

NANOMaterials: Applications & Properties-2021



Sept. 5-11, 2021, Odesa, Ukraine

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<https://nap.sumdu.edu.ua>



Abstract submission deadline: May 17th, 2021!

Main Topics: Synthesis, Nanofabrication & Nanomanufacturing; Micro- & Nanoscale Characterization; Multifunctional Films & Coatings; Electronic, Photonic & Quantum Materials Science & Engineering; Magnetic Materials & Magnetic Phenomena; Bionanotechnology & Nanomedicine; Sensors & Nanodevices; Energy, Water and Environmental Applications; Materials Theory & Modeling.

Early Registration Fees (*)

	Int.	CIS	UA
Regular/Invited:	300 EUR	150 EUR	2000 UAH
Ph.D. Student:	150 EUR	100 EUR	1000 UAH

(*) **Before July 12, 2021;**

IEEE Members - 20% discount

Awards & Grants

- ✓ "Rising Star in Nanoscience & Nanotechnology": Best Presentation Awards;
- ✓ "Nanoworld" Images Competition
- ✓ "East Meets West" Grants

IEEE NAP-2021 CONFERENCE PLENARY SPEAKERS



Paul S. Weiss
Univ. California – Los Angeles



Gleb Yushin
Georgia Institute of Technology



Shaowei Chen
Univ. California – Santa Cruz



Bingqing (B.Q.) Wei
University of Delaware



Anne M. Andrews
Univ. California – Los Angeles



Yury Gogotsi
Drexel University



Laura H. Greene
High Magnetic Field Laboratory



2021 IEEE 11th International Conference on "Nanomaterials: Applications & Properties"

NAP-2021

Tracks & Topics

Proceedings of the NAP-2021 will be available
online in IEEE Xplore Digital Library, indexed by
Scopus and other Databases.

Nanomaterials Synthesis & Self-assembly

- ✓ New routes for synthesis of "building blocks",
- ✓ Size-, shape- and composition-dependent properties,
- ✓ Top-down and bottom-up approached for self-assembly, ✓ Block-co-polymers, interfacial science and morphology control, ✓ Nanocomposites & nanohybrids.

Nanoscale Imaging & Characterization

- ✓ Nanoscale science and engineering, including manipulation of matter at the atomic/molecular scale and assembly phenomena, ✓ Interactions at surfaces of soft matter, including polymers and biomaterials,
- ✓ Electrochemistry at surfaces and interfaces.

Transport Properties in Nanoscale Systems

- ✓ Molecular scale electronics, ✓ Transport properties in 2D materials, ✓ Nanocircuitry and nanowires,
- ✓ Heterostructures and quantum wells.

Superconductivity in Nanoscale Systems

- ✓ Superconducting thin films and patterned structures,
- ✓ Hybrid systems, proximity size-dependent effects,
- ✓ Imaging and vortex dynamics, ✓ Josephson effect, nanoSQUIDS, and superconducting electronics, ✓ Superconducting detectors and nanosensors.

Nanomaterials for Energy & Environment

- ✓ Nanomaterials for solar-to-electric energy conversion,
- ✓ Hydrogen and fuels cells, ✓ Energy storage and generation, ✓ Bio-inspired energy materials,
- ✓ Nanomaterials for environment protection and remediation; CO reduction, ✓ Nanotech for water technologies.

Theory & Modeling

- ✓ First-principles methods, ✓ Non-equilibrium thermodynamics, ✓ Multiscale methods for charge/heat transport in nano- and mesoscale systems, ✓ Atomistic quantum transport simulations, ✓ Simulation of organic semiconductor devices, ✓ Microstructure-based models and dislocation analysis, ✓ Quantum mechanics for modelling of nanomaterials.

Find more at:

<https://nap.sumdu.edu.ua>

1

Thin Films & Coatings

- ✓ Advances in deposition techniques, ✓ Thin film growth & epitaxy: theory & experiments, ✓ New materials in thin film form: diamond-like films, granular alloys, high entropy alloys, oxynitrides, intermetallic compounds,
- ✓ Hard, wear-, oxidation-resistant and multifunctional coatings, ✓ Industrial applications, ✓ Electroless deposition.

2

3

Nanophotonics

- ✓ Plasmonic structures and quantum dots,
- ✓ Nanophotonics and optical manipulation,
- ✓ Spectroscopic studies of nanoscale materials,
- ✓ Molecular energy transfer and light harvesting,
- ✓ Photonic and optoelectronic materials and devices,
- ✓ Photodetectors, sensors and imaging.

4

5

Nanomagnetism & Magnetic Materials

- ✓ Magnetic nanoparticles, nanowires, thin films and patterned nanostructures, ✓ Magnetization reversal, domain structure, spin vortices and skyrmions, ✓ Spin waves and magnonics, ✓ Spin currents: generation, manipulation and transport, ✓ Spintronics: memories, field sensors, logic and spin-based devices,
- ✓ Magnetic anisotropy and recording media, ✓ Heusler alloys, magnetocaloric and magneto-optical materials

6

7

Nanodevices & Sensors

- ✓ Micro/nano electromechanical systems and sensors,
- ✓ Piezoelectric sensors, ✓ Field-effect transistors,
- ✓ Plasmonic and surface-enhanced Raman spectroscopy nanosensors, ✓ Magneto-electronic or spintronic nanodevices, ✓ RF, microwave, IR, UV-VIS and X-ray sensors, and single photon detectors.

8

9

Biomedical Applications

- ✓ Nanoparticles-based platforms for cancer diagnostics, imaging and treatment, ✓ Nanoparticles manipulation, microfluidics and lab-on-chip technologies, ✓ Nanodevices and sensors for bio/nanomedicine, ✓ Bio-nanomaterials and tissue engineering, ✓ DNA nanotechnology, ✓ Nanotoxicity.

10

11

Interdisciplinary & Miscellaneous Topics

- ✓ Quantum computing, ✓ Nano- and micro-fabrication techniques, ✓ Thermal transport and heat exchange at nanoscale, ✓ Ethical, and societal issues in nanotechnology, ✓ Nanotech business and intellectual property aspects.

12

NAP-2021

2021 IEEE 11th International Conference on “Nanomaterials: Applications & Properties” Conference Venue



Hotel GAGARINN is a proud partner and host of the IEEE NAP-2021 Conference! Gagarinn is a modern, four-star hotel located in Arcadia, the vivid tourist area of the city. Our international guests consistently rank GAGARINN as one of the best hotels for business and leisure in Odesa. The Black sea, cafes and bars, clubs, live entertainment, museums, and many cultural and historic city attractions are all nearby! 24/7r front desk with English-speaking staff, on-site ATM, restaurant, and bar. You will find everything you need to work, socialize, and recharge after a long day! The hotel is located ~ 6 miles from the ODS International Airport. Together with the NAP-2021 team, we can arrange your airport transfer too! **Stay with us and feel like at home - safe, connected, and loved!**

4.5 ★★★★★ 3,167 Google reviews

- Free Wi-Fi
- Free parking
- Airport shuttle
- Pet friendly
- Restaurant
- Non-smoking rooms
- Bar

Accommodation

Standard room (20 m²) is a budget solution for one-room accommodation with all the modern amenities; a double bed or two single beds. **Superior / Deluxe Rooms** are similar in size but located on the 4-18th floors of the hotel, thus offering a better panoramic view over the sea or the city. **Two-room Suites** (40 m²) are designed in European style with a large double bed and modern furniture; it can accommodate up to four people. Our **Studios** (40 m²) feature a bedroom and living room. They are located on the 8 and 19 floors. Finally, **Family Suites** (64 m²) located on the 13th floor offer superb accommodation with two bedrooms and a living room equipped with modern electronics, furniture, a queen size bed in each bedroom, as well as a large expandable sofa in the living room, two separate bathrooms - one with a shower and another one with a bathtub.



Conference facilities

Our modern conference halls are located on the third floor of the Gagarinn Hotel. High-speed Wi-Fi, up-to-date multimedia technologies, and air conditioning with temperature control ensure effective and productive work. Poster and Oral sessions, as well as coffee breaks, are all on the same floor!



Gagarinn Food Hub Restaurant

Our restaurant is conveniently located on the second floor. We offer a choice of delicious dishes from European, Asian, Ukrainian, and local Odesa cuisine, as well as a selection of wines, liqueurs, and cocktails. Unsurpassed hospitality and personalized service guarantee that your stay in Odesa will be enjoyable and memorable!



GAGARINN
FOOD
HUB

We highly recommend booking directly with us, with a free cancellation up to 48 hours before check-in.

Contact email: sales@gagarinn.com

