

Scientific Program

July 1, Monday

8³⁰-17⁰⁰ Registration
9⁰⁰-9²⁰ Opening

Oral session *The Prospectives of Carbon Nanostructures*

Chairmen: J. Haruyama, A.Ya. Vul'

9²⁰-10⁰⁰ **Maurizio Prato**, *Dipartimento di Scienze Chimiche e Farmaceutiche, Università degli Studi di Trieste, Trieste, Italy*
Synthesis and applications of functionalized carbon nanotubes (*invited*)

10⁰⁰-10⁴⁰ **Morinobu Endo**, *Shinshu University, Nagano, Japan*
The state-of-the-art science and applications of the carbon nanotubes (*invited*)

10⁴⁰-11⁰⁰ *Coffee break*

Oral session *Graphene 1*

Chairmen: M. Prato, M. Endo

11⁰⁰-11⁴⁰ **Petra Rudolf**, *Zernike Institute for Advanced Materials, University of Groningen, Groningen, The Netherlands*
Excited charge carriers in graphene on metal substrates (*invited*)

11⁴⁰-12²⁰ **Ester Vázquez**, *Facultad de Ciencias y Tecnologías Químicas, IRICA. Universidad de Castilla-La Mancha, Ciudad Real, Spain*
Modification of Carbon Nanoforms under non-conventional techniques (*invited*)

12²⁰-12⁴⁰ **Irina V. Antonova**, *A.V.Rzhanov Institute of Semiconductor Physics SB RAS, Russia*
Few-layer graphene quantum dots in insulated matrix: fabrication and study of electronic structure

12⁴⁰-13⁰⁰ **Kazuyuki Takai**, *Department of Chemistry, Tokyo Institute of Technology, Tokyo, Japan*
Structure and the electronic structure of step part on the epitaxial graphene surface

13⁰⁰-15⁰⁰ *Lunch*

Oral session *Graphene 2*

- Chairmen:** P. Rudolf, O. Shenderova
- 15⁰⁰-15²⁰ **Yurii E. Lozovik**, *Institute of Spectroscopy RAS, Troitsk, Moscow Region, Russia*
Graphene for plasmonics and nanophotonics
- 15²⁰-15⁴⁰ **Zoran Markovic**, *Vinca Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia*
Nickel catalyzed transformation of C₆₀ and amorphous carbon to graphene
- 15⁴⁰-16⁰⁰ **Chiara Cavallari**, *Institut Laue Langevin, Grenoble, France; University of Parma, Physics Department, Italy*
Hydrogen on graphene investigated by inelastic neutron scattering
- 16⁰⁰-16²⁰ **Igor A. Kotin**, *A.V. Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russia*
Atomically flat high-resistivity substrates for high carrier mobility in graphene
- 16²⁰-16⁴⁰ **Elena Sheka**, *Peoples' Friendship University of Russia, Moscow, Russia*
Molecular theory about underwater stones in graphene material science
- 16⁴⁰-17⁰⁰ *Coffee break*

Oral session *Carbon Nanotubes*

- Chairmen:** E. Vazgues, A.V. Eletskii
- 17⁰⁰-17²⁰ **Alexander Okotrub**, *Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*
Hybrid materials from carbon nanotube arrays and semiconductor nanoparticles
- 17²⁰-17⁴⁰ **Christian Kramberger**, *University of Vienna, Vienna, Austria*
One-dimensional N₂ phase inside single-walled carbon nanotubes
- 17⁴⁰-18⁰⁰ **Marianna Kharlamova** *Lomonosov Moscow State University, Moscow, Russia*
Comparison of 3d-, 4d- and 4f- metal halogenide doping effects on the single-walled carbon nanotubes
- 18⁰⁰-19³⁰ Poster session 1 *Graphene, Carbon Nanotubes*

July 2, Tuesday

Oral session *Fullerenes 1*

- Chairmen:** S.I. Troyanov, A. Okotrub
- 9⁰⁰-9⁴⁰ **Hisanori Shinohara**, *Department of Chemistry & Institute for Advanced Research, Nagoya University, Japan*
Putting atomic nanowires into carbon nanotubes (*invited*)

- 9⁴⁰-10²⁰ **Su-Yuan Xie**, *State Key Lab for Physical Chemistry of Solid Surfaces & Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, China*
Structures and properties of non-IPR fullerenes captured by chlorination/hydrogenation (*invited*)
- 10²⁰-10⁴⁰ **Shangfeng Yang**, *Hefei National Laboratory for Physical Science at Microscale, CAS Key Laboratory of Materials for Energy Conversion & Department of Materials Science and Engineering, University of Science and Technology of China (USTC), Hefei, China*
Novel endohedral clusterfullerenes: Putting metal clusters into fullerenes
- 10⁴⁰-11⁰⁰ **Dmitri V. Konarev**, *Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*
Optical and magnetic properties of monomeric and polymeric fullerene C₆₀(2-) and C₇₀(2- dianions)
- 11⁰⁰-11²⁰ *Coffee break*

Oral session *Electronic Properties of Nanocarbons 1*

Chairmen: H. Shinohara, S.Y. Xie

- 11²⁰-12⁰⁰ **Junji Haruyama**, *Aoyama Gakuin University, 5-10-1 Fuchinobe, Sagamihara, Kanagawa, Japan*
Graphene edge spins; Spintronics and magnetism in graphene nanomeshes (*invited*)
- 12⁰⁰-12⁴⁰ **Kirill Bolotin**, *Physics Department, Vanderbilt University, Nashville, USA*
Optoelectronics of graphene and graphene-based heterostructures (*invited*)
- 12⁴⁰-13⁰⁰ **Toshiaki Enoki**, *Tokyo Institute of Technology, Tokyo, Japan*
Nanographene; edge geometry and chemical structure effect on its electronic structure
- 13⁰⁰-15⁰⁰ *Lunch*

Oral session *Nanodiamonds 1*

Chairmen: N. Rozhkova, M. V. Avdeev

- 15⁰⁰-15⁴⁰ **Amanda Barnard**, *CSIRO Materials Science and Engineering, Parkville, Australia*
Modelling the surface chemistry of nanodiamond (*invited*)
- 15⁴⁰-16²⁰ **Vincent Pichot**, *French-German Research Institute of Saint-Louis, Saint-Louis, France*
Research on detonation nanodiamond at the French-German Research Institute of Saint-Louis (*Invited*)

16²⁰-16⁴⁰ **Masaki Ozawa**, *Meijo University, Aichi, Japan*
Spontaneous fibre formation of detonation nanodiamonds in polyacrylamide aqueous solutions

16⁴⁰-17⁰⁰ *Coffee break*

Oral session *Nanocomposites*

Chairmen: T. Enoki, M. Ozawa

17⁰⁰-17²⁰ **Dmitry Yu. Usachev**, *St. Petersburg State University, St. Petersburg, Russia*
Controlled interface formation and electronic structure of novel graphene-based systems

17²⁰-17⁴⁰ **Oleg Kononenko**, *Institute of Microelectronics Technology and High Purity Materials RAS, Chernogolovka, Russia*
Synthesis of graphene/CNT hybrid nanostructures and the FET on its basis

17⁴⁰-18⁰⁰ **Oleg Yu. Vilkov**, *St. Petersburg State University, St. Petersburg, Russia*
Assembly of graphene-capped nickel, cobalt and iron silicides

Round Table *Theory and Modelling* (Small Hall on 4th floor)

Chairmen: A. Barnard, E. Sheka

17⁰⁰-17¹⁵ **Leonid Chernozatonskii**, *Emanuel Institute of Biochemical Physics, RAS, Moscow, Russia*
Buky-corn: van der Waals composite of carbon nanotube coated by by close-packed C60 fullerenes

17¹⁵-17³⁰ **Sergey A. Ktitorov**, *Ioffe Physical Technical Institute RAS, Russia*
Nonlinear transport in monolayer graphene

17³⁰-17⁴⁵ **Peter Vancso**, *Institute of Technical Physics and Materials Science, Research Centre for Natural Sciences, Budapest, Hungary; Korean-Hungarian Joint Laboratory for Nanosciences, Budapest, Hungary*
Transport properties of ordered and disordered grain boundaries in CVD produced graphene

17⁴⁵-18⁰⁰ **Denis Sabirov**, *Institute of Petrochemistry and Catalysis RAS, Ufa, Russia*
Polarizability of fullerene derivatives: theoretical study and the use in the design of nanodevices and fullerene-based organic solar cells

18⁰⁰-18¹⁵ **Sergey Pyrlin**, *Institute for Nanostructures, Nanomodeling and Nanofabrication, University of Minho, Guimaraes, Portugal; University of Minho, Braga, Portugal; Bauman Moscow State Technical University, Moscow, Russia*
The impact of CNT/CNF non-uniform distribution on the polymer composites' conductivity by Monte Carlo modeling on GPU

18¹⁵-18³⁰ Discussion

19⁰⁰-21⁰⁰ **Welcome Party**

July 3, Wednesday

Conference/School of Young Scientists (in Russian)

Advanced Carbon Nanostructures and Methods of Their Diagnostic

Chairmen: V.V. Afrosimov, M.V. Kovalchuk

- 9⁰⁰-9⁵⁵ Lecture 1
Alexander V. Eletsii, *National Research Center “Kurchatov Institute”, Moscow, Russia*
Physical problems in CNT-based electron field emitters
- 9⁵⁵-10⁵⁰ Lecture 2
Levon B. Piotrovskiy, *Institute of experimental medicine NWB RAMS, Saint-Petersburg, Russia*
The biological potential of carbon nanostructures
- 10⁵⁰-11¹⁰ *Coffee break*
- 11¹⁰-12⁰⁵ Lecture 3
Evgeni Katz, *J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boqer, Israel*
Fullerenes, nanoclusters and nanotubes: forms and structures (from mathematics to physics, biology and architecture)
- 12⁰⁵-13⁰⁰ Lecture 4
Vladimir Yu. Osipov, *Ioffe Physical-Technical Institute RAS, Russia*
Nanographites: edge-localized states and their unconventional electronic properties
- 13⁰⁰-15⁰⁰ *Lunch*
- 15⁰⁰-15⁵⁵ Lecture 5
Evgeny D Eydelman, *Ioffe Physical Technical Institute RAS, Russia; St. Petersburg Academic University–Nanotechnology Research and Education Centre RAS, St. Petersburg State Chemical–Pharmaceutical Academy, St. Petersburg, Russia*
Thermoelectric effects in carbon nanostructures
- 15⁵⁵-16⁵⁰ Lecture 6
V.A. Bykov, *Research Institute of Physical Problems & NT-MDT Companies Group, Moscow, Russia*
Technologies of atomic force microscopy and scanning spectroscopy for carbon nanostructures investigations
- 16⁵⁰-17³⁰ **Short oral young scientist's presentations (1 minute)**
- 17³⁰-19⁰⁰ Poster Session 2 ***Diagnostics of Nanocarbons, Fullerenes, Nanocomposites***

July 4, Thursday

Oral session *Nanodiamonds 2*

Chairmen: M. L. Terranova, R. Kalish

- 9⁰⁰-9²⁰ **Pavel N. Nesterenko**, *Australian Centre for Research on Separation Science (ACROSS), University of Tasmania, Hobart, Australia*
New look on a problem of the purity and purification of detonation nanodiamonds
- 9²⁰-9⁴⁰ **Maria L. Terranova**, *Dip.to Scienze e Tecnologie Chimiche & MinimaLab, Università degli Studi di Roma "Tor Vergata", Via della Ricerca Scientifica, Roma, Italy; Nanoshare Srl*
Nanodiamond/Conducting Polymers: in search of best suited systems for energetic applications
- 9⁴⁰-10⁰⁰ **Olga Shenderova**, *International Technology Center, Raleigh, North Carolina, USA*
Nanodiamond-polymer nanocomposites with improved resistance to ionizing radiation
- 10⁰⁰-10²⁰ **Mikhail V. Korobov**, *Lomonosov Moscow State University, Moscow, Russia*
New analytical tool to monitor the dispersity of detonation nanodiamonds
- 10²⁰-10⁴⁰ **Mikhail V. Avdeev**, *Frank Laboratory of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia*
Specific features of sp³-sp² spatial transition in detonation nanodiamond by small-angle neutron scattering
- 10⁴⁰-11⁰⁰ **Vitaly Korepanov**, *National Chiao Tung University, Hsinchu, Taiwan*
A new three-dimensional phonon confinement model applied to nanodiamond: Raman band shape and particle size distribution
- 11⁰⁰-11²⁰ *Coffee break*

Oral session *Electronic Properties of Nanocarbons 2*

Chairmen: K. Bolotin, Yu.E. Lozovik

- 11²⁰-11⁴⁰ **Alexander I. Shames**, *Ben-Gurion University of the Negev, Be'er-Sheva, Israel*
Spin-spin interactions between pi-electronic edge-localized spins and molecular oxygen in defective carbon nano-onions
- 11⁴⁰-12⁰⁰ **Igor Vlasov**, *General Physics Institute RAS, Moscow, Russia*
Color centers in nanodiamonds: luminescent properties and application
- 12⁰⁰-12²⁰ **Vladimir Yu. Osipov**, *Ioffe Physical Technical Institute RAS, Russia*
Spin S=1 centers: a universal type of paramagnetic defects with unique signature in nanodiamonds of dynamic synthesis
- 12²⁰-12⁴⁰ **Natalia N. Rozhkova**, *Institute of Geology Karelian Research Centre RAS, Petrozavodsk, Russia*

New carbon allotrope shungite as loosely packed fractal nets of graphene-base quantum dots

12⁴⁰-13⁰⁰ **Alexey Verkhovtsev**, *Frankfurt Institute for Advanced Studies, Goethe-Universität, Frankfurt am Main, Germany; St. Petersburg State Polytechnic University, St. Petersburg, Russia*

Electron excitations in photo- and electron impact ionization of fullerenes

13⁰⁰-15⁰⁰ *Lunch*

Oral session *Fullerenes 2*

Chairmen: D.V. Konarev, I. Vlasov

15⁰⁰-15²⁰ **Sergey I. Troyanov**, *Lomonosov Moscow State University, Moscow Russia*
The first cage isomers of C₁₀₄ structurally confirmed in C₁₀₄(258)C₁₁₆ and C₁₀₄(812)C₁₂₄

15²⁰-15⁴⁰ **Daniele Pontiroli**, *Dipartimento di Fisica e Scienze della Terra, Università Parma, Parma, Italy*
Ionic conductivity in light metal intercalated fullerenes

15⁴⁰-16⁰⁰ **Matteo Aramini**, *Dipartimento di Fisica e Scienze della Terra, Università Parma, Parma, Italy*
MuSR reveals H₂ storage mechanism in light alkali metal fullerides

16⁰⁰-16⁴⁰ **Vasily T. Lebedev**, *St. Petersburg Nuclear Physics Institute, Gatchina, Leningrad distr., Russia*
Star-shaped fullerene(C₆₀)-containing polystyrenes in solutions: structural aspects

16⁴⁰-17⁰⁰ *Coffee break*

Oral session *Biological Applications of Nanocarbons*

Chairmen: L.B. Piotrovskiy, J.M. Rosenholm

17⁰⁰-17²⁰ **Yuri Mackeyev**, *Department of Chemistry and The Smalley Institute for Nanoscale Science & Technology, Rice University, Houston, USA*
Toward paclitaxel-[60]fullerene Immunoconjugates as a targeted prodrug against cancer

17²⁰-17⁴⁰ **Yulia P. Buchatskaya**, *Lomonosov Moscow State University, Moscow Russia*
Detonation nanodiamonds as a sorbent for cations of radionuclides

17⁴⁰-18⁰⁰ **Ruslan Yu. Yakovlev**, *Pavlov Ryazan State Medical University, Ryazan, Russia; Lomonosov Moscow State University, Moscow, Russia*
Ex vivo study of nanodiamond particles biodistribution using ICP-MS

18⁰⁰-19³⁰ Poster session 3 *Nanodiamonds, Fullerenes, Electronic Properties of Nanocarbons, Applications of Nanocarbons*

July 5, Friday

Oral session *Applications of Nanocarbons 1*

Chairmen: E. Katz, I. Shames

- 9⁰⁰-9⁴⁰ **Rafi Kalish**, *Physics Dept. and Solid State Inst. Technion-Haifa, Israel*
Ultra nano crystalline diamond: low dimensional quantum and fascinating electronic properties (*invited*)
- 9⁴⁰-10²⁰ **Alexander Tzalenchuk**, *National Physical Laboratory, Teddington, UK*
Graphene and new horizons of quantum metrology (*invited*)
- 10²⁰-10⁴⁰ **Sergey A. Grudinkin**, *Ioffe Physical Technical Institute RAS, Russia*
Spherical and semispherical CVD diamond microparticles with controllably embedded luminescent silicon-vacancy color centers
- 10⁴⁰-11⁰⁰ *Coffee break*

Oral session *Applications of Nanocarbons 2*

Chairmen: A. Tzalenchuk, M. Korobov

- 11⁰⁰-11²⁰ **Albert Nasibulin**, *Aalto University School of Science, Espoo, Finland*
Flexible and transparent single-walled carbon nanotube networks for ethanol vapor sensing application
- 11²⁰-11⁴⁰ **Aleksandr Pyryaev**, *Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*
Hierarchically porous graphene in natural graphitic globules from silicate magmatic rocks.
- 11⁴⁰-12⁰⁰ **Govind R. Kovummal**, *CSIR-National Chemical Laboratory, Pune, India*
Magnetism in amorphous carbon as a function of the extent of graphitization
- 12⁰⁰-12²⁰ **Olga Levinson**, *Ray Techniques Ltd., Jerusalem, Israel*
Characterization of nanodiamonds obtained by laser ablation
- 12²⁰-12⁴⁰ **Jessica M. Rosenholm**, *Laboratory of Physical Chemistry, Åbo Akademi University, Turku, Finland*
Carbon nanostructures and their composites for diagnostic nanomedicine
- 12⁴⁰-13⁰⁰ **Rustem E. Uzbekov**, *Faculté de Médecine, Université François Rabelais, Tours, France*
Interaction of iron carbide nanoparticles protected by carbon shell onion-like structure with living cells
- 13⁰⁰-13²⁰ *Coffee break*

Special session *Applications of Nanocarbons*

Chairmen: S.V. Kalyuzhniy, A. Vul'

- 13²⁰-14²⁰ Round Table *Applications of Nanocarbons*
- 14²⁰-14³⁰ **Closing**