

18th National Seminar on Nanoscience and Nanotechnology

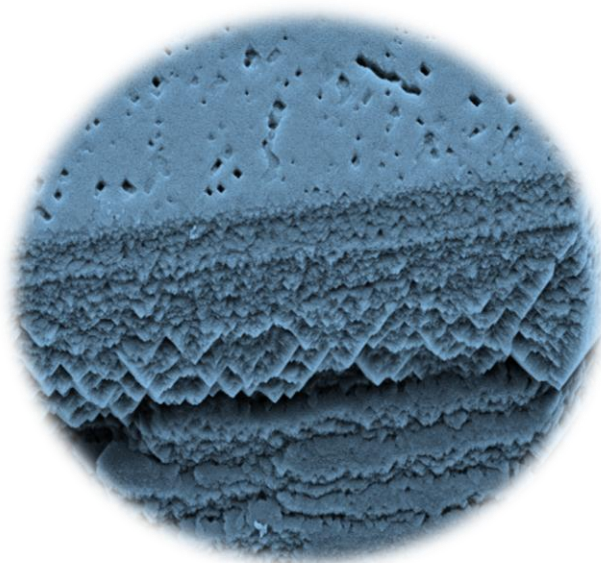
SNN 2019

24-25 October 2019



Romanian Academy

PROGRAM



"Petru Poni" Institute of Macromolecular Chemistry
Iasi, Romania



The National Seminar for Nanoscience and Nanotechnology (SNN) is organized by the Commission of Microsystems Science and Technology (STMS) of the Romanian Academy (<http://www.link2nano.ro/acad/>)

**The 18th edition of SNN (24-25 October 2019) is organized in cooperation with “Petru Poni” Institute of Macromolecular Chemistry of Romanian Academy (PPIMC) (www.icmpp.ro)
41A Grigore Ghica Vodă Alley, 700487 Iași, Romania**

TIME SCHEDULE

24 October 2019

09.30 Registration of Participants

10.00 - 13.30 Session A. Functional Properties and Applications

13.30 - 15.30 Lunch break

14.30 - 15.30 PPIMC visit

15.30 - 19.00 Session B. Nanomaterials and Applications

25 October 2019

09.00 - 12.30 Session C. Nanomaterials

12.30 - 12.40 Final Comments and Seminar closing

Thursday, October 24

9³⁰ – 10⁰⁰ Registration of Participants

10⁰⁰ – 13³⁰

Session A. Functional Properties and Applications

Chair: Dan DASCĂLU and Maria CAZACU

10 ⁰⁰ – 10 ²⁰	<p>A1. INTERDISCIPLINARY APPROACHES IN NANOMEDICINE - CHALLENGES FOR THE FUTURE Mariana PINTEALA <i>Center of Advanced Research in Bionanoconjugates and Biopolymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania</i></p>
10 ²⁰ – 10 ⁴⁰	<p>A2. POLYMER-BASED NANOCOMPOSITES. NEW METHODS AND CONCEPTS Horia IOVU <i>Faculty of Applied Chemistry and Materials Science University POLITEHNICA of Bucharest, Bucharest, Romania</i></p>
10 ⁴⁰ – 11 ⁰⁰	<p>A3. NANO-DROPLETS, SOFT MATERIALS AS WELL AS NANO-ELECTRONICS MATERIALS CHARACTERIZATION INVOLVING SCANNING POLARIZATION FORCE MICROSCOPY Marius ENACHESCU <i>Center for Surface Science and Nanotechnology (CSSNT), University POLITEHNICA of Bucharest, Bucharest, Romania</i></p>
11 ⁰⁰ – 11 ²⁰	<p>A4. FROM HIGH COLLOIDAL STABILITY FERROFLUIDS TO NANO-MICRO COMPOSITE MAGNETORHEOLOGICAL SUSPENSIONS-TUNING THE PROPERTIES TO THE REQUIREMENTS OF APPLICATIONS Ladislau VÉKÁS <i>Laboratory of Magnetic Fluids, Center for Fundamental and Advanced Technical Research, Timisoara Branch of Romanian Academy</i></p>
11 ²⁰ – 11 ⁴⁰	<p>A5. MAGNETIC NANOPARTICLES UPLOADED BY HUMAN ADIPOSE DERIVED STEM CELLS AS VERSATILE ANTITUMORAL AND REGENERATIVE TOOLS Luminita LABUSCA,^{1,2,3} Dumitru Daniel HEREA,¹ Camelia DANCEANU,^{1,4} Anca MINUTI,¹ Cristina STAVILA,¹ Horia CHIRIAC,¹ Nicoleta LUPU¹ ¹National Institute of Research and Development for Technical Physics, Iasi ²"Sf. Spiridon" Emergency Clinical Hospital, Iasi, Romania ³REGENERO Regenerative Medicine Association from Romania ⁴"Alexandru Ioan Cuza" University, Faculty of Physics, Iasi, Romania</p>

11⁴⁰ – 12⁰⁰ Comments and Coffee Break

12 ⁰⁰ – 12 ²⁰	<p>A6. THE USE OF NANOTECHNOLOGIES, NANOMATERIALS IN NUCLEAR INSTRUMENTS AND METHODS, DEVELOPMENT OF A SET OF MODERN GAMMA-RAY AND PARTICLES RADIATION DETECTORS Gheorghe PASCOVICI,^{1,2} C. MIHAI,¹ C. NEACSU,² R.E. MIHAI,¹ A. VASILIU,¹ C. COSTACHE,¹ A. LUNGU,¹ N. MARGINEAN,¹ A. TURTURICA,¹ S. UJENIUC,¹ J.-M. REGIS,³ V. KARAYONCHEV³ ¹Horia Hulubei National Institute of Physics and Nuclear Engineering, Magurele-Bucharest, Romania ²Physics Department, University POLITEHNICA of Bucharest, Bucharest ³Institute for Nuclear Physics, University of Cologne, Germany</p>
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12 ²⁰ – 12 ⁴⁰	A7. KEY PARAMETERS CONTROLLING THE INTERACTION AT THE BIO/NANO INTERFACE Speranta TANASESCU <i>Institute of Physical Chemistry “Ilie Murgulescu” of the Romanian Academy, Bucharest, Romania</i>
12 ⁴⁰ – 13 ⁰⁰	A8. ADVANTAGES OF CARBON NANOMATERIALS IN ELECTROCHEMICAL SENSING: EXAMPLE OF PROTEIN AGGREGATION AND BENZALDEHYDE DETECTION Alina VASILESCU, ¹ Ana-Maria TITOIU, ¹ Valentina DINCA, ² Cristina PURCAREA, ³ Georgiana PETRAREANU, ³ Pablo FANJUL-BOLADO, ⁴ Sabine SZUNERITS, ⁵ Rabah BOUKHERROUB ⁵ ¹ <i>International Centre of Biodynamics, Bucharest, Romania</i> ² <i>National Institute for Laser, Plasma and Radiation Physics (INFLPR) Magurele, Romania</i> ³ <i>Institute of Biology, Bucharest, Romania</i> ⁴ <i>Metrohm DropSens, S.L, Asturias, Spain</i> ⁵ <i>Institute of Electronics, Microelectronics and Nanotechnology (IEMN), UMR CNRS 8520, University of Lille, Villeneuve d’Ascq, France</i>
13 ⁰⁰ – 13 ²⁰	A9. HYBRID FLEXIBLE NANOCOMPOSITE MATERIALS FOR SENSOR APPLICATIONS Ion TIGINYANU, Veaceslav URSAKI <i>Academy of Sciences of Moldova, Chisinau, Republic of Moldova</i>
13 ²⁰ – 13 ³⁰	Final Comments and Closure Session A
13 ³⁰ – 15 ³⁰	Lunch break
14 ³⁰ – 15 ³⁰	ICMPP visit

15³⁰ – 19⁰⁰

Session B. Nanomaterials and Applications

Chair: Marius ENĂCHESCU and Gheorghe PASCOVICI

15 ³⁰ – 15 ⁵⁰	B1. PHOTONIC STRUCTURES FABRICATED BY LASER PROCESSING OF MATERIALS Marian ZAMFIRESCU, ^{1*} Bogdan-Stefanita CALIN, ^{1,2} Alexandru FILIP, ^{1,2} Vlad TOMA ^{1,3} ¹ <i>National Institute for Laser, Plasma and Radiation Physics, Bucharest-Magurele, Romania</i> ² <i>University “Politehnica” of Bucharest</i> ³ <i>University of Bucharest, Faculty of Physics, Bucharest-Magurele, Romania</i>
15 ⁵⁰ – 16 ¹⁰	B2. PHOTONIC DEVICES WITH PLANAR WAVEGUIDES BASED ON SURFACE PLASMON RESONANCE Aurelian POPESCU, D. SAVASATRU, S. MICROS, L. BASCHIR <i>National R&D Institute for Optoelectronic INOE 2000, Magurele, Romania</i>
16 ¹⁰ – 16 ³⁰	B3. CARBON BASED MATERIALS AND THEIR APPLICATIONS IN ENERGY CONVERSION AND STORAGE Adela BĂRA, Cristina BANCIU, Mihai IORDOC, Aristofan TEISANU, Paula BARBU, Mihai BĂDIC, Cristian MORARI, Virgil MARINESCU, Delia PĂTROI, Marius LUNGULESCU <i>National Institute for Research and Development in Electrical Engineering ICPE-CA, Bucharest, Romania</i>

16 ³⁰ – 16 ⁵⁰	B4. GRAPHENE MATERIALS DESIGNED FOR ENVIRONMENT AND HEALTH APPLICATION: BIOSENSING AND BIOTECHNOLOGIES Gabriela HRISTEA, ¹ Gina COGALNICEANU, ² Radu TANASA, ³ Dragos OVEZEA, ¹ Mihai IORDOC, ¹ Andreea TOPIRLAN, ¹ Virgil MARINESCU ¹ <i>¹National Inst. for R&D in Electrical Engineering ICPE-CA</i> <i>²Institute of Biology, Romanian Academy</i> <i>³National Institute for R&D in Microbiology and Immunology "Cantacuzino"</i>
16 ⁵⁰ – 17 ¹⁰	B5. MODELS AND INFLUENCES OF NATURAL AQUEOUS SYSTEMS OVER THE SORPTION OF HYDROCHLORIC ORGANIC CONTAMINANTS ON CARBON NANOMATERIALS AMENDED SEDIMENTS Alina Catrinel ION, ¹ Georgeta IVAN, ^{1,2} Ion ION ¹ <i>¹University POLITEHNICA of Bucharest, Romania</i> <i>²National Research & Development Institute for Chemistry and Petrochemistry ICECHIM</i>
17 ¹⁰ – 17 ³⁰	Comments and Coffee Break
17 ³⁰ – 17 ⁵⁰	B6. INNOVATIVE 3D PRINTING TECHNOLOGIES FOR HYBRID NANOSTRUCTURED MATERIALS PROCESSING Roxana Mioara PITICESCU, Laura Madalina CURSARU, Paul STANCIU, Ana Maria MOCIOIU <i>National Research-Development Institute for Non-ferrous and Rare Metals, Ilfov, Romania</i> ²
17 ⁵⁰ – 18 ¹⁰	B7. IN SITU SYNTHESIS OF PLASMONIC GOLD AND SILVER NANOPARTICLES ON LAYERED DOUBLE HYDROXIDES FOR DRIVING CO₂ ADSORPTION AND ITS PHOTOCATALYTIC REDUCTION BY SOLAR OR VISIBLE LIGHT IRRADIATION Gabriela CARJA, ¹ Diana GILEA, ¹ Elena SEFTEL ² <i>¹Department of Chemical Engineering, Faculty of Chemical Engineering and Environmental Protection "Cristofor Simionescu" Technical University "Ghe. Asachi" of Iasi, Iasi, Romania</i> <i>²VITO Flemish Institute for Technological Research, Boeretang, Belgium</i>
18 ¹⁰ – 18 ³⁰	B8. SENSING WITH ENZYME-BASED NANOMOTORS AND MICROPUMPS Raluca-Elena MUNTEANU, ¹ Mihail N. POPESCU, ² Szilveszter GÁSPÁR ¹ <i>¹International Centre of Biodynamics, Bucharest, Romania</i> <i>²Max Planck Institute for Intelligent Systems, Stuttgart, Germany</i>
18 ³⁰ – 18 ⁵⁰	B9. FUNCTIONAL CHARACTERISTICS IMPROVEMENT OF THE PHYSICAL MECHATRONIC STRUCTURES COMPONENTS USING NANOSTRUCTURED THIN FILMS Gheorghe GHEORGHE, Liliana-Laura BADITA, Aurel ZAPCIU, Valentin GORNOAVA <i>National Institute of Research and Development in Mechatronics and Measurement Technique, Bucharest, Romania</i>
18 ⁵⁰ – 19 ⁰⁰	Final Comments and Closure Session B

Friday, October 25

09⁰⁰ – 13⁰⁰

Session C. Nanomaterials

Chair: Ladislau VEKAŞ and Alina Catrinel ION

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- 09⁰⁰ – 9²⁰ **C1. NANO/MICROSTRUCTURES AND MATERIALS CONTAINING (POLY)SILOXANES**
Maria CAZACU, Carmen RACLES, Mihaela DASCALU,
Mirela-Fernanda ZALTARIOV, Adrian BELE, Codrin TUGUI
Department of Inorganic Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- 09²⁰ – 09⁴⁰ **C2. RAISING THE MULTIFUNCTIONALITY OF LASER PROCESSED MATERIALS THROUGH COMPLEX ENSEMBLES OF NANOSCALE PHASE/NANODOMAIN FLUCTUATIONS**
Nicu D. SCARISOREANU
National Institute for Laser, Plasma and Radiation Physics, Lasers Department, Magurele, Romania
- 09⁴⁰ – 10⁰⁰ **C3. ELECTRODEPOSITION OF MAGNETIC NANOWIRES FOR BIOMEDICAL APPLICATIONS**
Oana-Georgiana DRAGOS-PINZARU,¹ Adrian GHEMES,¹ Horia CHIRIAC,¹ Ibro TABAKOVIC,² Nicoleta LUPU¹
¹*National Institute of R&D for Technical Physics, Iasi, Romania*
²*ECE Department, University of Minnesota, Minneapolis, USA*
- 10⁰⁰ – 10²⁰ **C4. MULTIFUNCTIONAL HYBRID THIN FILMS, FROM TRANSPARENT AND FLEXIBLE ELECTRONICS TO MEDICAL APPLICATIONS**
Viorica MUSAT,¹ Elena Emanuela HERBEL,¹ Viorica GHISMAN,¹ Michael P.M. JANK,² Susanne OERTEL,² Daniel TIMPU,³ Ana PIMENTEL,⁴ Rodrigo MARTINS,⁴ Elvira FORTUNATO⁴
¹*Centre of Nanostructures and Functional Materials-CNMF, Department of Materials Science and Engineering, Faculty of Engineering, "Dunărea de Jos" University of Galati, Romania*
²*Fraunhofer Institute for Integrated Systems and Device Technology IISB, Erlangen, Germany*
³*"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania*
⁴*Materials Science Department, CENIMAT/13N and CEMOP/UNINOVA, Faculty of Sciences and Technology of New University of Lisbon, Campus de Caparica, Portugal*
- 10²⁰ – 10⁴⁰ **C5. SYNTHESIS OF NANOSTRUCTURED MIXED RARE EARTH OXIDES AND THEIR USE IN DESIGNING OF SINTERED ZIRCONIA CERAMICS AND HIGH ENTROPY OXIDES**
Cristina F. CIOBOTA,¹ Sorina VALSAN,¹ Mythili PRAKASAM,² Alain LARGETEAU,² Felix BALIMA,² Maria Luisa GRILLI,³ Radu R. PITICESCU¹
¹*National R&D Institute for Nonferrous and Rare Metals-IMNR, Pantelimon, Romania*
²*CNRS-Institut for Materials Chemistry ICMCB Bordeaux, Franta*
³*ENEA Cassacia Research Centre, Rome, Italy*

10⁴⁰ – 11⁰⁰ Comments and Coffee Break

11 ⁰⁰ – 11 ²⁰	C6. POLYMERIC MATERIALS WITH FIBROUS MORPHOLOGY AS SORBENTS FOR OIL SPILL CLEANUP Corneliu COJOCARU, Petronela PASCARIU, Petrisor SAMOILA <i>“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania</i>
11 ²⁰ – 11 ⁴⁰	C7. SYNTHESIS AND SURFACE FUNCTIONALIZATION OF NANOSTRUCTURED TiO₂ AND ZnO MATERIALS FOR ENVIRONMENTAL AND ENERGY-RELATED APPLICATIONS Dumitru LUCA, ¹ D. MARDARE, ¹ M. NAGATSU, ² C.-M. TEODORESCU, ³ M. DOBROMIR, ¹ A. V. MANOLE, ¹ T. POTLOG, ⁴ R. APETREI, ¹ C.-T. TEODORESCU-SOARE ¹ <i>¹Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi</i> <i>²Graduate School of Integrated Science and Technology, Shizuoka University, Hamamatsu, Japan</i> <i>³National Institute of Materials Physics, Bucharest-Magurele, Romania</i> <i>⁴Department of Physics and Engineering, Moldova State University, Chisinau, Republic of Moldova</i>
11 ⁴⁰ – 12 ⁰⁰	C8. MORPHOLOGICAL CHARACTERIZATION OF TITANIA NANOTUBE ARRAYS BY IMAGE PROCESSING OF HIGH-RESOLUTION SEM IMAGES Mihaela LUCA, ¹ Adrian CIOBANU, ¹ Claudia Teodora TEODORESCU-SOARE, ² George STOIAN, ³ Dumitru LUCA ² <i>¹Institute of Computer Science, Romanian Academy – Iasi Branch, Iasi, Romania</i> <i>²Faculty of Physics, University “Alexandru Ioan Cuza” University of Iasi, Romania</i> <i>³National Institute of Research and Development for Technical Physics, Romania</i>
12 ⁰⁰ – 12 ²⁰	C9. MATERIALS SINTERED FROM METALLIC POWDERS FOR SPECIAL APPLICATIONS Gheorghe GHEORGHE, Aurel ZAPCIU, Liliana-Laura BADITA, Valentin GORNOAVA <i>National Institute of Research and Development in Mechatronics and Measurement Technique, Bucharest, Romania</i>
12 ²⁰ – 12 ³⁰	Final Comments and Closure Session C
12 ³⁰ – 12 ⁴⁰	Final Comments and Closure of 18th National Seminar on Nanoscience and Nanotechnology

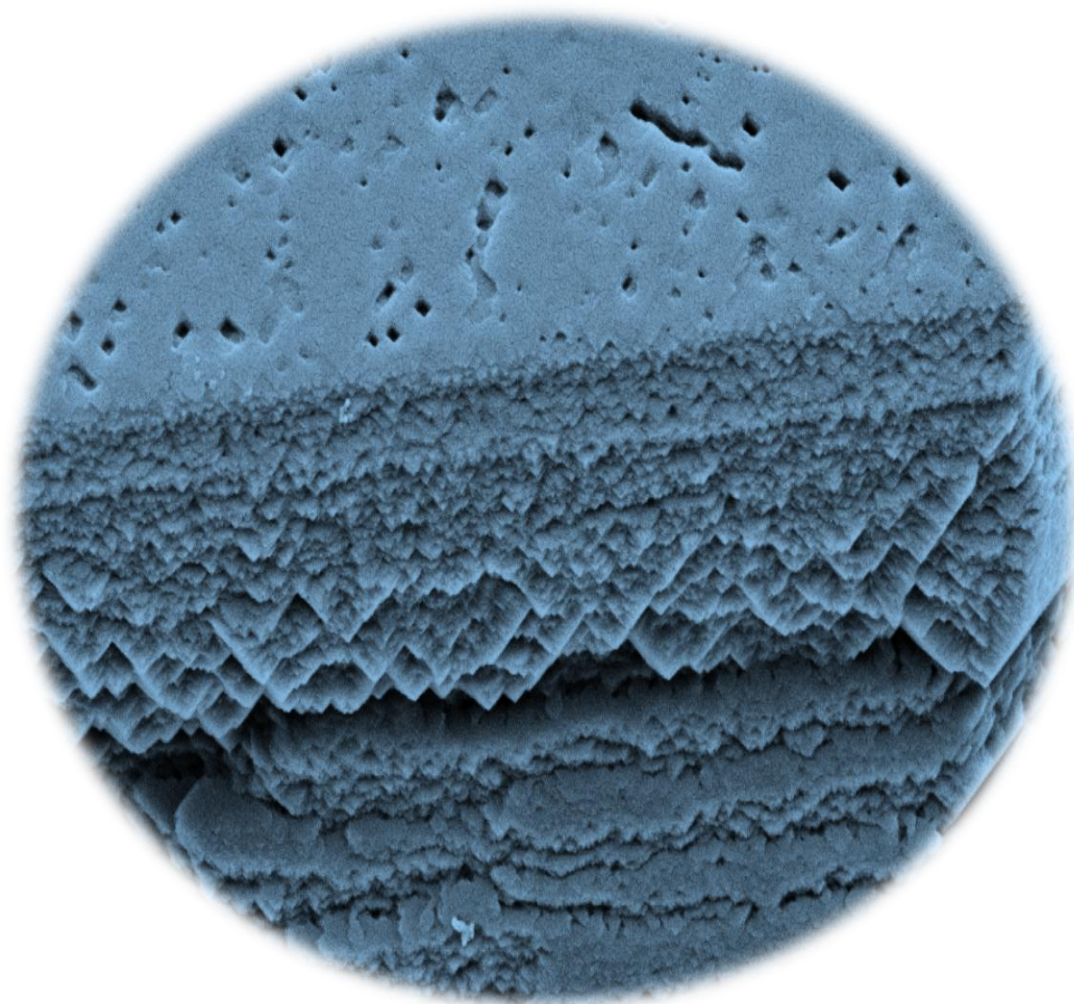
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Romanian Academy



PETRU PONI



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