

The International School for Young Researchers
«Synchrotron Radiation and Smart Nanomaterials» - IWSN 2023

In situ diagnostics

Smart materials: Current trends and future perspectives in synthesis
Artificial intelligence, machine learning and supercomputer modelling
(September 14, 2023, Thursday, 09:30-19.00)

The center of high-tech instrumentation

Join the conference

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Conference ID: 822 2994 9583

Passcode: 459888

(Chairman Soldatov A.V., Mukhanova E.A., Turishchev S.Yu., Kartashov O.O.)

Smart materials: Current trends and future perspectives in synthesis		
Alexander Soldatov, chairman	09:30-10:00	Time, energy and reagents effective synthesis of advanced nanomaterials
Anna Pnevskaya	10:00-10:15	MOFs as ethylene and 1-MCP absorbers for food preservation technologies
Zhengyou Li	10:15-10:30	Physical properties of nanostructured Yb ₃ Fe ₅ O ₁₂ , YbFeO ₃ and YbMn _{1-x} Fe _x O ₃
Vera Butova	10:30-10:45	In situ FTIR spectroscopy as a tool for UiO-66 active sites tracing
Vladimir Polyakov	10:45-11:00	Implementation of microfluidic synthesis technologies to obtain composite based on BaGdF ₅
Hosne Mobarak	11:00-11:15	Alocasia Indica Assisted Green Synthesis of ZnO Nanoparticles for Improved Anti-Microbial Performance
Oleg Polozhentsev	11:15-11:30	Size and Shape-tunable synthesis of doped rare-earth trifluoride nanoparticles
Break 45 minutes		

Smart materials: Current trends and future perspectives in synthesis		
Elizaveta Mukhanova, chairman	12:15-12:45	Biomicrofluidics: current trends and future prospects
Sakthipandi K	12:45-13:00	200 MeV Ag ¹⁶⁺ Swift heavy ion irradiation: Effect on structural and magnetic properties of M-type barium hexaferrite
Sergei Chapek	13:00-13:15	3D printed lab-on-a-chip for metal nanoparticles synthesis
Priyadarshani Rajput	13:15-13:30	Advanced silica templated nano spherical particles for photocatalytic hydrogen generation
Lantsova Elizaveta	13:30-13:45	Formation of porous organosilicon matrices using microorganisms as templates
Lunch break 1 hour 30 minutes		
In situ diagnostics		
Sergey Turishchev, chairman	15:15-15:45	Electronic structure and phase composition of Ni rod arrays formed in silicon dioxide matrix by synchrotron spectromicroscopy studies
Sofiia Titova	15:45-16:00	XANES investigation of the effect of the drying method on the composition and structure of porous silicon nanoparticles
Maxim Manyakin	16:00-16:15	TiO ₂ , MnO ₂ and MoO ₂ oxides electronic structure: theory and experiment
Iuliia Kakuliia	16:15-16:30	Copper nanocrystals immobilization in porous SiO ₂ matrix by electron microscopy and synchrotron XANES studies
Victor Roldugin	16:30-16:45	Photo-electrochemical cells for in situ and operando X-ray absorption spectroscopy studies
Polina Rud	16:45-17:00	XANES Investigation of Oxaliplatin Loaded Zr-MOFs
Break 1 hour		

Artificial intelligence, machine learning and supercomputer modelling		
Sergey Abrosimov	18:00-18:15	Quantitative analysis of the local atomic structure of binuclear molecules based on XANES and EXAFS domain by machine learning methods
Sergey Soldatov	18:15-18:30	Application of the neural networks for the task of classification of the 2D colored images
Bogdan Protsenko	18:30-18:45	Good Practice In XAS: Experimental Libraries, Interpretable Machine Learning And User-Friendly Frontend Of The Spectroscopy Ultimate Tool,
19:00 – 20:00 dinner		

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Conference ID: 864 0367 3554

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(Chairman Bukhtiyarov A.V., Tomilin F.N., Turishchev S.Yu., Polyakov V.A.)

In situ diagnostics		
Andrey Bukhtiyarov, chairman	09:30 – 10:00	Current progress of the SRF «SKIF» project
Mikhail Soldatov	10:00-10:15	Local atomic and electronic structure of magnetic nanoparticles revealed by synchrotron methods
Alexander Guda	10:15-10:30	Investigation of Rh/NR3 catalytic systems in sequential stages of reductive hydroformylation engaging in situ X-ray absorption spectroscopy
Alexander Zagrebaev	10:30-10:45	Synthesis and diagnostic analysis of NBF-substituted dihydroberberine derivatives using microfluidic techniques
Maksim Gritsai	10:45-11:00	Microfluidic synthesis of magnetic nanoparticles
Break 45 minutes		
In situ diagnostics		
Felix Tomilin, chairman	11:45-12:15	Synergy of SAXS and Molecular Modeling for DNA Aptamer Bioapplications
Anna Kichkailo	12:15-12:30	Three-dimensional structure determination of DNA

		oligonucleotides by Small-angle X-ray scattering
Victor Shapovalov	12:30-12:45	In situ UV-Vis and SAXS screening of Ag nanoparticles synthesis parameters using 3d-printed microfluidics and machine learning
Andrei Tereshchenko	12:45-13:00	Monitoring of 1-octene and bis(trimethylsiloxy)methylsilane conversion in the hydrosilylation reaction in the flow mode by in situ Raman spectroscopy
Lunch break 1 hour 30 minutes		
Poster session Vladimir Polyakov, chairman		
Carol Yazbleydy Cárdenas Rodriguez		Controllable modular growth of Quantum Dot on metal organic framework Disposition
Polina Kuznetsova		New routes of synthesis for tungsten-unithiol complex
Nikolay Boykov		Epitaxial Sn-Si ultrathin nanolayers structure by synchrotron study
Maria Muratidi		Loading of D,L-cysteine into biocompatible Zr-MOFs
Evgeniy Belikov		X-ray and electron spectroscopy and microscopy studies of the biohybrid material based on E.coli cells
Kirill Volik		Local structure in Eu-doped CaWO ₄
Valeria Shevchenko		Phytotoxicity of nanomaterials
Olga Burachevskaya		Nanocomposite core-shell structures of the UiO-66 family for biomedical applications
17:00 – 18:30 dinner		