

IWSN 2025

27.10.2025 - 28.10.2025, 344090, Rostov-on-Don, Zorge, 26

Day 1. Monday, October 27

Time	Talk	Speaker
09:00 10:00	Registration	
10:00 10:30	Opening of the conference Mega Science enters Nanoworld: What is Next?	Alexander Soldatov The Smart Materials Research Institute of The Southern Federal University
10:30 11:00	The framework for creating LLM assistants for quantitative analysis of X-ray data	Sergey Guda Institute for Mathematics, Mechanics, and Computer Science in the name of I.I. Vorovich of The Southern Federal University
11:00 11:30	SAXS Time-Resolved Measurements of the Structure of Protein Crystallization Solutions	Margarita Marchenkova National Research Centre "Kurchatov Institute"
11:30 12:00	Coffee break	
12:00 12:20	Synchrotron and laboratory studies of the physical and chemical state and structure of SnO ₂ wire-like crystals	Fateev Kirill Voronezh State University
12:20 12:40	Co-Mn Spinel Coatings for SOFC Interconnect Application	Anna Khramenkova Novocherkassk Polytechnical University
12:40 13:00	Nature of Surface Sites in Ziegler-Natta Pre-Catalysts from Quantitative Analysis of Ti K-edge X-Ray Absorption Spectra	Alexander Guda The Smart Materials Research Institute of The Southern Federal University
13:00 13:20	Atomic and electronic structure of porous silicon nanoparticles by synchrotron study	Sofiia Titova Voronezh State University
13:30 14:30	Lunch	
14:30 15:00	X-ray absorption spectroscopy at the STM station of the Kurchatov synchrotron radiation source.	Alexander Trigub National Research Centre "Kurchatov Institute" online
15:00 15:20	Rietveld refinement and spherical harmonics as advanced tools for characterising the microstructural properties of carbon supported platinum catalysts	Igor Leontyev Southern Federal University
15:20 15:40	Investigation and modelling of Mn-doped barium hexaferrite	Svetlana Gudkova Moscow Institute of Physics and Technology
15:40 16:00	Research on the replacement of Fe with Al in BaFe ₁₂ O ₁₉	Egor Shramkov Moscow Institute of Physics and Technology

16:00 16:20	In Situ XAS study of Lithiation in Iron Oxide Nanoparticle-Based Anodes During Battery Cycling	Maksim Gritsai The Smart Materials Research Institute of The Southern Federal University
16:20 16:40	Coffee break	
16:40 17:10	Development and characterization of PVA membranes modified with In(BTC) for pervaporation separation of isopropanol/water	Vladimir Polyakov The Smart Materials Research Institute of The Southern Federal University
17:10 17:30	Synthesis and Characterization of a Single-Atom Cobalt Catalyst for Oxygen Reduction Reaction in Hydrogen-Air Fuel Cells	Venedikt Sklyarov The Smart Materials Research Institute of The Southern Federal University
17:30 17:45	LED Solar Spectrum Simulator for Photocatalysis	Igor Mozhunov The Smart Materials Research Institute of The Southern Federal University
17:45 18:00	Drying of Methanol as a Critical Step in the Synthesis of Co-N-C Catalysts for ORR.	Egor Shalychev The Smart Materials Research Institute of The Southern Federal University
18:00 19:30	Welcome party	

Day 2. Tuesday, October 28

Time	Talk	Speaker
09:30 10:00	Studies of biohybrid materials based on Dps molecules of E.coli cells using X-ray and electron spectroscopy and microscopy, including synchrotron investigations	Sergei Turischev Voronezh State University
10:00 10:30	Three-Dimensional Reconstruction of Complex Topologies from Small-Angle X-ray Scattering Data	Petr Konarev National Research Centre "Kurchatov Institute" online
10:30 11:00	Artificial Intelligence and Machine learning on synchrotrons: from on-the-fly data curation to experimentation planning	Mikhail Soldatov The Smart Materials Research Institute of The Southern Federal University
11:00 – 11:30	Coffee break	
11:30 12:00	Nature of active sites in polyurethane-based catalysts with highly dispersed Rh single atoms for reductive hydroformylation of olefins	Bogdan Protsenko The Smart Materials Research Institute of The Southern Federal University

12:00 12:20	Development of an intermolecular potential for modeling CO gas absorption on a palladium nanoparticle	Sergey Abrosimov The Smart Materials Research Institute of The Southern Federal University
12:20 12:40	XAS spectra Database for the Pyfitit AI Assistant	Georgii Asaturov The Smart Materials Research Institute of The Southern Federal University
12:40 13:00	Physics informed Neural Network for quantitative XAS analysis: DeepFit	Kirill Kulaev The Smart Materials Research Institute of The Southern Federal University
13:00 14:00	Lunch	
14:00 14:20	Automatization of SAXS beamline at Kurchatov synchrotron	Anton Baglii Institute for Mathematics, Mechanics, and Computer Science in the name of I.I. Vorovich of The Southern Federal University
14:20 14:40	AI beamline scientist for SAXS	Mikhail Lifar The Smart Materials Research Institute of The Southern Federal University
14:40 15:20	Principal component analysis as a key to identify Rh coordination under hydroformylation conditions	Georgii Kochiev The Smart Materials Research Institute of The Southern Federal University
15:20 15:40	Droplet based synthesis of gold nanoparticles and their online diagnostics: towards Self Driving Lab	Daniil Kupriyanenko The Smart Materials Research Institute of The Southern Federal University
15:40 16:00	Coffee break	
16:00 19:00	Master Class 1. Best practice for ML analysis of small experimental datasets: don't fool yourself 2. Supervised and unsupervised machine learning for spectral data 3. LLM instruments that boost your research	
	Outdoor Activity	

