

24th International Young Scientists Conference Optics and High Technology Material Science - SPO 2023 "STAND WITH UKRAINE"

Friday, 17 November 2023 - Saturday, 18 November 2023

**Taras Shevchenko National University of Kyiv and Shizuoka University
Programme**

Friday 17 November 2023

Opening - 248 (08:00-08:30)

time	title	presenter
08:00	Opening Remarks	Prof. KONDRATENKO, Serhiy (Taras Shevchenko National University of Kyiv, Faculty of Physics, Chair of Optics)
08:10	Beyond Two Decades of the SPO Conference	Prof. POPERENKO, Leonid (Taras Shevchenko National University of Kyiv, Faculty of Physics, Chair of Optics)
08:20	Decades of Collaboration: Shizuoka University and Taras Shevchenko National University of Kyiv	Prof. AOKI, Toru (Shizuoka University)

Plenary - 248 (08:30-09:30)

-Conveners: Kondratenko, Serhiy (Taras Shevchenko National University of Kyiv, Faculty of Physics, Chair of Optics)

time	title	presenter
08:30	Overcoming of "Boltzmann tyranny" in MOSTET with the "cold metal" source	Prof. STRIKHA, Maksym (Taras Shevchenko National University of Kyiv, V.Lashkariov Institute of Semiconductor Physics, NAS Ukraine.)
09:00	Raman spectroscopy capabilities for characterization of semiconductors nanostructures	Prof. DZHAGAN, Volodymyr (V. Lashkaryov Institute of Semiconductors Physics, National Academy of Sciences of Ukraine, 03038 Kyiv, Ukraine)

Break - 248 (09:30-09:40)

Multiferroics and Magnetoelectric Coupling: Invited talks - 248 (09:40-11:00)

-Conveners: Pocherpailo, Andrii (Taras Shevchenko National University Kyiv)

time	title	presenter
09:40	Multiferroics: controlling magnetism with electric fields	Dr WEBER, Mads C. (Le Mans University / Institute of Materials and Molecules Le Mans)
10:10	Nanoscale Imaging of Ferroic Order with Soft X-ray Ptychography	Dr BUTCHER, Tim A. (Paul Scherrer Institute, Switzerland)
10:35	Probing the Electric-Field Induced Antiferroelectric-Ferroelectric Phase Transition in PbZrO ₃ with Second Harmonic Generation Imaging	Dr LEVCHUK, Artem (CEA-Saclay)

Break - 248 (11:00-11:15)

Emergent biosensing technologies - 248 (11:15-12:15)

-Conveners: Pocherpailo, Andrii (Taras Shevchenko National University Kyiv)

time	title	presenter
11:15	Photophysics of the fluorescent guanine analog tzG	TKACH, Olha (Laboratoire de Bioimagerie et Pathologies, UMR 7021 CNRS Université de Strasbourg, Faculté de pharmacie)
11:30	Engineering thermoresponsive polymer coating on plasmonic nanostructures for drug delivery applications	MARIIA, Khutko (V.E. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine)
11:45	The Impact of Millimeter Waves on the Fluorescence of Aqueous Rhodamine 6G Solution	ILCHUCK, Danil (Taras Shevchenko Kyiv National University, Faculty of Physics, Ukraine)
12:00	Spectroscopic Investigation of BSA Protein and Thiochrome Dye Interaction	Ms RYZHKOVA, Anastasiia (Taras Shevchenko National University of Kyiv, Faculty of Physics)

Break - 248 (12:15-12:30)

Spectroscopy techniques and applications - 248 (12:30-14:00)

-Conveners: Ilchuck, Danil (Taras Shevchenko National University of Kyiv)

time	title	presenter
12:30	Processing of spectral data by self-similar difference equations.	PAVLOV, Evgen (University of Derby)
12:45	SERS-substrates with controllable localization of analyte in the plasmonic "hot-spots"	Dr MAZUR, Nazar (Department of Optics and Spectroscopy, V. Lashkaryov Institute of Semiconductors Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine.)
13:00	Photoluminescence of polymer-incorporated ZnO nanocrystals	ISAIEVA, Oksana (V. Lashkaryov Institute of Semiconductors Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine.)
13:15	Raman spectroscopy study on Cu ₂ ZnSnS ₄ -based nanocrystals and nanocomposites	KARNAUKHOV, Anatolii (V.Ye. Lashkaryov Institute of Semiconductor Physics of the NASU)
13:30	"Stimulated Raman scattering of laser dyes in a closed scattering shell"	HAIDUK, Tetiana (Taras Shevchenko National University of Kyiv)
13:45	Third Harmonic Generation through Stimulated Raman Scattering in Magnetized Plasma with Hermite cosh Gaussian Laser Beam	AZAD, Taruna (Lovely Professional University, India) Dr KAMBOJ, Oriza (Lovely Professional University,)

Poster session - 248 (14:00-15:00)

time	title	presenter
14:00	Change in microhardness of iron-copper nanocomposites depending on the content of multi-walled carbon nanotubes	MELNICHENKO, Mykola (Taras Shevchenko National University of Kyiv)
14:05	Influence of Environment on Vibrational Spectra of Hydrogen-Bonded Clusters	Ms ONUK, Marta (Taras Shevchenko National University of Kyiv)
14:10	Determination of optical constants for heterostructures with inner layer of Cu (Ag) by ellipsometric method	Mr HYRMAN , Igor (Taras Shevchenko National University of Kyiv)
14:15	Luminescence from ZnO Nanomaterial due to Defect Centers	LIMBU, Abhay (Lovely Professional University)
14:20	The Heavy Atom Effect on Spectro-Optical Properties of Pi-electron Containing Molecular Complex Based on Tryptanthrin	TKACH, Nazarii (Taras Shevchenko National University of Kyiv)
14:25	Interaction of nanosystems based on chlorine e6 with model phospholipid membranes	Dr SAMILOV, Oleksandr (Institute for scintillation materials of National academy of Sciences of Ukraine)

Saturday 18 November 2023

Session at Shizuoka University: Invited talks - 248 (07:00-08:00)

-Conveners: Ilchuck, Danil (Taras Shevchenko National University of Kyiv)

time	title	presenter
07:00	Spatial Representation of Multi-energy 3D X-ray Imaging Using Mixed Reality	Mr KASE, Hiroki (Research Institute of Electronics, Shizuoka University)
07:30	Long-term stability of diode-type CdTe X-/gamma-ray detector with high current density	Dr TAKAGI, Katsuyuki (Shizuoka University)

Break - 248 (08:00-08:15)

Session at Shizuoka University: Student talks - 248 (08:15-11:30)

-Conveners: Maria Kasianchuk

time	title	presenter
09:00	Annealing Effect of Thallium Bromide Thin Film	TOYODA, Kohei (Shizuoka University)
09:15	GaN Semiconductor X-ray Detectors	KAGEMITSU, Inaba
09:30	Improving the accuracy of X-ray beam visualization using augmented reality (AR)	KAWAKAMI, Takumi (Shizuoka University)
09:45	Formation of TlBr thin film for semiconductor radiation detector	HAYAKAWA, Shoma (Shizuoka University)
10:00	Image Correction of Reconstructed Photon Counting CT Images Using Shot Noise	KATAYAMA, Yutaro
10:15	Thermal Diffusion Doping for CdTe Semiconductor Radiation Detectors	NAKAMURA, Ibuki (Shizuoka university)
10:30	Simulation of X-ray scattering of material surrounded by soil	Mr IKEDA, Takehiro (Shizuoka University)
10:45	Development of GaN Semiconductor X-ray and Gamma-Ray Detectors	Mr HIDA, Kosuke (Shizuoka University)
11:00	Image-domain Material Decomposition in Spectral CT with Photon-counting Detectors	HAYASHI, Kohei (Shizuoka University)
11:15	Comparative Evaluation of X-ray Backscattered Energy Spectrum for Subsurface Material Characterization	Mr SAJJASHETTY VINAYAKA (Shizuoka University)