

**Session Program**

October 27, 2024 to November 1, 2024

**28th International Scientific Conference of Young  
Scientists and Specialists (AYSS-2024)**

***Condensed Matter Physics***

## Wed, October 30

2:50 PM

### Condensed Matter Physics

Session | Location: MLIT, 4-456

14:50 – 15:20 **Investigation of the cathode materials for metal-ion batteries**

Speaker

Dr Nataliya Samoylova

15:20 – 15:35

**Towards a software ecosystem for high-precision multi-scale ab initio relativistic quantum modeling of atoms, molecules, and materials**

Speaker

Dr Alexander Oleynichenko

15:35 – 15:50

**Modeling layered HTSC with short-range attractive vortex-vortex interaction potentials using Monte Carlo approach**

Speaker

Valerii Lenkov

15:50 – 16:05 **Laser heating simulation of Au-Si composite structure**

Speaker

Julia Shafarevich

4:05 PM

4:30 PM

### Condensed Matter Physics

Session | Location: MLIT, 4-456

16:30 – 16:45 **Multiscale modelling of AlN irradiation by swift heavy ions**

Speaker

Мария Землякова

16:45 – 17:00

**X-ray diffraction study and modeling of damaged layers in Y3Al5O12 ceramics after swift heavy ions irradiation.**

Speaker

Artem Nazarov

17:00 – 17:15

**Study of CuO nanostructures modified with a sequential thermal treatment for photovoltaic applications**

Speaker

Silvia María Fortuné Fábregas

17:15 – 17:30 **Phase control of Prussian blue analogues for potassium-ion batteries**

Speaker

Olga Ponomareva

5:45 PM

# Thu, October 31

12:45 PM

## Condensed Matter Physics

Session | Location: MLIT, 4-475

12:45 – 13:00

**A comparative study of the effect of the sol-gel, combustion, and solid state reaction methods on the photoluminescence properties of the  $\text{Zn}_4\text{B}_6\text{O}_{13}:\text{Eu}^{3+}$  nanophosphors.**

**Speaker**  
Athenkosi Siyalo

13:00 – 13:15

**INFLUENCE OF HUMIDITY ON THE ELECTROPHYSICAL PROPERTIES AND CHARGE TRANSFER MECHANISM IN NANOSCALE DLC COATINGS**

**Speaker**  
Ilya Zur

13:15 – 13:30

**Crystal and thermodynamic properties of  $\text{Tb}_2\text{Ni}_2\text{X}$  (X = Al, Ga)**

**Speaker**  
Ms Zanele Zandile Mpupa

1:30 PM

2:50 PM

## Condensed Matter Physics

Session | Location: MLIT, 4-475

15:05 – 15:20

**Mössbauer effect in amorphous media**

**Speaker**  
Ксения Антохина

15:20 – 15:35

**Ab initio study of chemical shifts of X-ray emission spectra in ytterbium halides by the coupled cluster method**

**Speaker**  
Polina Khadeeva

15:35 – 15:50

**X-ray studies of structural ordering in metastable Langmuir monolayer.**

**Speaker**  
Lia Muftakhova

15:50 – 16:05

**Structure and dynamics investigation of ibuprofen dimers by DFT method.**

**Speaker**  
Polina Gergelezhiu

4:05 PM

4:30 PM

## Condensed Matter Physics

Session | Location: MLIT, 4-475

16:30 – 16:45

**Point defects in  $\text{FeMe}_2\text{O}_4$  (Me = Fe, Cr) spinels: a DFT+U investigation in the light of experimental data**

**Speaker**  
Gleb Chichevatov

16:45 - 17:00 **Influence of point defects on charge transport in nickel ferrite NiFe<sub>2</sub>O<sub>4</sub>**

**Speaker**  
Nikita Fominykh

17:00 - 17:15

**A Silicon Photocathode Protected with Epitaxially Grown SrTiO<sub>3</sub> for Photoelectrochemical Water Splitting Application**

**Speaker**  
Darija Petkovic

17:15 - 17:30

**EFFECT OF PROTON IRRADIATION ON THE STRUCTURE AND PROPERTIES OF THE Al<sub>2</sub>O<sub>3</sub> YSZ COMPOSITE CERAMICS SYSTEM**

**Speaker**  
Aleksandr Maletskii

5:30 PM

# Fri, November 1

12:45 PM

## Condensed Matter Physics

Session | Location: MLIT, MLIT-134/4-406

12:45 – 13:00 **Birdcage resonator for a gradient spin flipper in strong magnetic fields**

**Speaker**

Vladimir Kurylev

13:00 – 13:15 **Structural and vibrational properties of the  $\text{Cu}_3\text{Bi}(\text{SeO}_3)_2\text{O}_2\text{Cl}$  francisite at high-pressure**

**Speaker**

Anton Rutkauskas

13:15 – 13:30

**Structural and vibrational properties of  $\text{CoFe}_2\text{O}_4$  and  $\text{Zn}_{0.34}\text{Fe}_{2.53}\square_{0.13}\text{O}_4$  ferrites at high-pressure**

**Speaker**

Nghiem Nguyen

1:30 PM

2:50 PM

## Condensed Matter Physics

Session | Location: MLIT, MLIT-134/4-406

14:50 – 15:05

**Structural and optical properties of the  $\text{Sm}^{3+}$ -doped  $\text{ZnAl}_2\text{O}_4/\text{ZnO}$  mixed phases synthesized via precipitation method**

**Speaker**

Ms Samkelisiwe Portia Khambule

15:05 – 15:20 **Effect of thermal annealing on structure and conductivity of hafnium oxide thin films**

**Speaker**

Ivan Kuchumov

15:20 – 15:35 **Superconducting magnetic system for gradient spin-flipper with a strong magnetic field**

**Speaker**

Alexander Popov

4:05 PM