

Scientific Program

Uzbekistan-Korea Conference

"New Trends in Condensed Matter Physics:

Focus on topological insulators, low-dimensional functional materials and quantum information",

October 06 – October 09, 2022

Khiva, Uzbekistan

organized by

Asia Pacific Center for Theoretical Physics (APCTP),

Turin polytechnic university in Tashkent,

Urgench State University,

Physical Society of Uzbekistan,

Research center for dielectric and advanced matter physics, Pusan national university

Day 1, October 06

8:30-10:20 *Registration*

10:20-10:30 *Opening ceremony*

Morning Session

Chair: Barbara Dietz

10:30-11:05 Jungseek Hwang. *Bosonic spectra of correlated multiband K-doped $BaFe_2As_2$*

11:05-11:40 Jeehoon Kim. *Anomalous transport properties in a Weyl metal*

Coffee Break (11:40-12:10)

12:10-12:45 Chul Hong Park. *Microscopic origin of strange luminescence from 2-dimensional FeSe*

Lunch break (13:00-15:00)

Afternoon Session

Chair: Chul Hong Park

15:00-15:35 Chang-Youn Moon. *Effects of dynamic local correlation on the spin susceptibility and superconducting symmetries in Sr_2RuO_4*

15:35-16:10 Jaebeom Lee. *FeSe nanoparticles with multicolored excitation-dependent emission and their application in bio-imaging*

Coffee Break (16:10-16:40)

16:40-17:15 Doniyor Jumanazarov. *The significance of the spectral correction of photon counting detector response in material classification from spectral X-ray CT*

17:15-17:50 Atabek Atamuradov. *Gate oxide and back oxide materials combined influence on self-heating and DIBL effects in 2D MoS₂ based MOSFE*

Dinner (18:30-21:00)

Day 2, October 07

Morning Session

Chair: Shavkat Yuldashev

10:00-10:35 Barbara Dietz. *Mirowave networks as an experimental model for GOE, GUE or GSE quantum graphs*

10:35-11:10 Davron Matrasulov. *Quantum Physics on Graphs: From Spectral Theory to Tunable Transport*

Coffee Break (11:10-11:40)

11:40-12:15 Ulugbek Shaislamov. *Nanostructured metal oxide semiconductors for solar hydrogen generation*

12:15 -12:50 Taegeun Song. *Machine learning as useful tools for condensed matter in two ways*

Lunch break (13:00-15:00)

Afternoon Session

Chair: Taegeun Song

15:00-15:35 Shavkat U. Yuldashev. *Spin Seebeck Effect in Topological Insulators*

15:35-16:10 Noejung Park. *Real-time quantum dynamics of condensed matters: nonlinear optical responses and Berry curvature family*

Coffee Break (16:10-16:40)

16:40-17:15 Ulugbek Abdullaev. *Cobalt-doped NiOx nanoparticles for perovskite solar cells*

Dinner (18:30-21:00)

Day 3, October 08

Morning Session

Chair: Jung-Wan Ryu

- 10:00-10:35 Sapparboy Rakhmanov. *Quantum dynamics under time-dependent confinement*
- 10:35-11:10 Jung-Wan Ryu. *Classification based on exceptional points in non-Hermitian systems*

Coffee Break (11:10-11:40)

- 11:40-12:15 Aiganym Sarsembaeva. *A new nuclear data compilation tool for nuclear data services*
- 12:15-12:50 Khanatbek Khompysh. *Unique Solvability of an Inverse Problem for Kelvin-Voigt Equation with memory*

Lunch break (13:00-15:00)

Afternoon Session

Chair: Ulugbek Shaislamov

- 15:00-15:35 Jambul Yusupov. *Driven quantum graphs*
- 15:35-16:10 Iwan Setiawan. *Fast forward adiabatic quantum dynamics of XY Spin Model on Kagome Lattice*

Coffee Break (16:10-16:40)

- 16:40-17:15 Boris Oksengendler. *The influence of growth conditions on the shape of nanoparticles*
- 17:15-17:50 Nosir Matyakubov. *A Novel Method for NO_x Removal n-Heptane as a Reducing Agent and Pretreated by Gliding Arc Plasma*

Dinner (18:30-21:00)

Day 4, October 09

10:30-13:00 Guided excursion in Khiva city

Lunch break (13:00-15:00)

15:00-16:00 Academic free discussions

16:00-16:30 Discussions for next meeting

Closing the conference