The 11th School of Mesoscopic Physics: Quantum Control and Sensing

MAY 19-21, 2022 | POSCO INT'L CENTER

OVERVIEW

Quantum technologies have advanced into quantum communication, simulation, computation, and sensing areas, by revealing individual quantum states and exploiting the quantum properties of superposition and entanglement. In this summer school, we suggest to learn the basic theoretical and experimental aspects of quantum technologies in terms of quantum control and sensing. Topics include:
1. Quantum controls of individual single electrons and qubits based on quantum dot systems, and hydrodynamics
2. Quantum sensors based on nanomechanical system, diamond NV center, and superconductor.

TOPICS

1. Quantum hydrodynamics
2. Quantum sensing
3. Quantum dot technology

INVITED SPEAKERS

Hyoungsoon Choi (KAIST)
Junho Suh (KRISS)
Donghun Lee (KU)
Kin Chung Fong (Raytheon Technologies, USA)
Sungguen Ryu (IFISC, Spain)
Dohun Kim (SNU)
Seok-Kyun Son (MNU)

ORGANIZERS

Yong-Joo Doh (GIST, Chair)
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Hyung-Kook Choi (JBNU)
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Heung-Sun Sim (KAIST) Yunchul Chung (PNU)

PROGRAM

19 MAY (KST)

- 12:00 **Registration**
- 13:30 **Opening Remark**
- 13:40 **Nanomechanical quantum sensors** *(Junho Suh, KRISS, Korea)*
- 16:00 **Hydrodynamics in Condensed Matter Physics** *(Hyoungsoon Choi, KAIST, Korea)*
- 18:00 **Dinner**
- 19:30 **Free Discussion**

20 MAY (KST)

- 09:30 **Quantum sensing and imaging using diamond NV center** *(Donghun Lee, KU, Korea)*
- 11:30 **Group Photo**
- 12:00 **Lunch**
- 13:00 **Superconductor-based quantum sensors: basic principles and applications** *(Kin Chung Fong, Raytheon Technologies, USA)*
- 15:10 **Single-electron sources: from electron optics to thermodynamic machines** *(Sungguen Ryu, IFISC, Spain)*
- 17:20 **Quantum dot spin qubits** *(Dohun Kim, SNU, Korea)*
- 19:30 **Banquet**

21 MAY (KST)

- 09:30 **Quantum Acoustics: surface-acoustic waves(SAWs) come across qubits** *(Seok-Kyun Son, MNU, Korea)*
- 11:30 **Closing Remark**

REGISTRATION & CONTACT

Application Site: https://apctp.org/theme/d/html/activities/activities01-1_read.php?id=1664&page=2
Registration Fee: free | Period for Registration: 2022.04.18 ~ 05.12
Contact: sec@apctp.org (Academic Support Team of APCTP)

Organized by The Mesoscopic Physics Society of Korea

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