

# *2024 SNU-ISSP WORKSHOP*

*May 24, 2024, Seoul National Univ.*



**SNU-ISSP Research Center**

for **D**ynamic **P**roperties of **F**unctional **Q**uantum **M**aterials

# 2024 SNU-ISSP WORKSHOP

(May 24, 2024 / Seoul National Univ.)

## *Program*

| Time                                                        | Title                                                                                | Speaker                                       |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------|
| Scientific Session I. (Session chair: Prof. Hyunyoung Choi) |                                                                                      |                                               |
| 09:00 - 09:10<br>(10 min)                                   | Congratulatory Address                                                               | Prof. Hyung Do Kim,<br>Department Chair (SNU) |
| 09:10 - 09:20<br>(10 min)                                   | Introduction of SNU Physics and IAP                                                  | Prof. Changyoung Kim (SNU)                    |
| 09:20 - 09:40<br>(20 min)                                   | Introduction of ISSP                                                                 | Director Prof. Zenji Hiroi (ISSP)             |
| 09:40 - 10:10<br>(30 min)                                   | Development of laser-ARPES in LASOR of ISSP                                          | Prof. Takeshi Kondo (ISSP)                    |
| 10:10 - 10:30<br>(20 min)                                   | Terahertz spectroscopy for anomalous Hall effect                                     | Prof. Ryusuke Matsunaga (ISSP)                |
| 10:30 - 11:00<br>(30 min)                                   | Coffee Break                                                                         |                                               |
| 11:00 - 11:30<br>(30 min)                                   | High magnetic field facility at ISSP                                                 | Prof. Yoshimitsu Kohama (ISSP)                |
| 11:30 - 12:00<br>(30 min)                                   | Hofstadter butterfly in multilayer graphenes under a moire potential                 | Prof. Joonho Jang (SNU)                       |
| 12:00 - 13:30<br>(90 min)                                   | Lunch<br>(Duremidam Cafeteria, 5F, Bldg.75-1)                                        |                                               |
| 13:30 - 15:30<br>(120 min)                                  | Poster Session / Bldg.25-1                                                           |                                               |
| Scientific Session II. (Session chair: Prof. Seung-sup Lee) |                                                                                      |                                               |
| 15:30 - 16:00<br>(30 min)                                   | Spontaneous breaking of mirror symmetry in a cuprate beyond critical doping          | Dr. Saegyeol Jung (SNU)                       |
| 16:00 - 16:20<br>(20 min)                                   | Kinetic inductance in magic angle twisted bilayer graphene                           | Dr. Miuko Tanaka (ISSP)                       |
| 16:20 - 16:50<br>(30 min)                                   | Quantum light sources in 2D van der Waals materials                                  | Prof. Jieun Lee (SNU IAP)                     |
| 16:50 - 17:10<br>(20 min)                                   | Superconductivity in Ternary Telluride Sc6MTe2 with 3d, 4d, and 5d Transition Metals | Prof. Yoshihiko Okamoto (ISSP)                |
| 17:10 - 17:20<br>(10 min)                                   | Group Photo and Closing remark                                                       | Prof. Changyoung Kim (SNU)                    |
| 18:00 -                                                     | Banquet<br>(Marronnier Hall, Hoam Faculty House, Bldg.125)                           |                                               |

## Poster Session

- P-01** *Time-reversal symmetry broken states in MnSb and CrSb*  
..... **Sangjae Lee** (Seoul Nat'l Univ, Korea)
- P-02** *Observation of the Spin-polarized Surface State of Bismuth Using Time-, Spin-, and Angle-resolved Photoemission Spectroscopy*  
..... **Yuto Fukushima** (ISSP, Japan)
- P-03** *Broken Kramers degeneracy in altermagnetic MnTe*  
..... **Suyoung Lee** (Seoul Nat'l Univ, Korea)
- P-04** *Time-, spin- and angle-resolved photoemission spectroscopy with 10.7-eV ultrashort pulsed laser at 1-MHz repetition rate visualizing photoexcited spin-polarized electronic states*  
..... **Kaishu Kawaguchi** (ISSP, Japan)
- P-05** *Kondo interaction in FeTe and its role in the magnetic order*  
..... **Younsik Kim** (Seoul Nat'l Univ, Korea)
- P-06** *Temperature dependence of the energy gap in KAlGe*  
..... **Takuma Nishida** (ISSP, Japan)
- P-07** *Superconductivity in isolated single copper oxygen plane*  
..... **Youngdo Kim** (Seoul Nat'l Univ, Korea)
- P-08** *The doping-dependent evolution of superconductivity of multilayered cuprate*  
..... **Junhyeok Jeong** (ISSP, Japan)
- P-09** *Ferromagnetic insulating substrate for magnetic proximity studies: LaCoO<sub>3</sub> thin film*  
..... **Yeonjae Lee** (Seoul Nat'l Univ, Korea)
- P-10** *Electronic structures of Gd-based skyrmion materials studied by angle-resolved photoemission spectroscopy*  
..... **Yuyang Dong** (ISSP, Japan)
- P-11** *Atomically thin two-dimensional Kagome flat band on silicon surface*  
..... **Jae Hyuck Lee** (Seoul Nat'l Univ, Korea)
- P-12** *A d-orbital derived flat band close to the Fermi level realizing a ferromagnetic Kondo lattice in Fe<sub>5-x</sub>GeTe<sub>2</sub>*  
..... **Soonsang Huh** (ISSP, Japan)
- P-13** *Controlling structure and interfacial interaction of monolayer TaSe<sub>2</sub> on bilayer graphene*  
..... **Hyobeom Lee** (Kangwon Nat'l Univ, Japan)
- P-14** *Ultrafast control of the crystal structure in VTe<sub>2</sub>*  
..... **Takeshi Suzuki** (ISSP, Japan)
- P-15** *Thickness dependent properties of Fe<sub>3</sub>GeTe<sub>2</sub> thin film*  
..... **Jaeung Lee** (Seoul Nat'l Univ, Korea)
- P-16** *high-resolution and time-resolved laser ARPES studies on kagome superconductor CsV<sub>3</sub>Sb<sub>5</sub>*  
..... **Yigui Zhong** (ISSP, Japan)
- P-17** *Tuning the electronic structure of FeTe via epitaxial strain*  
..... **Hyunjee Song** (Seoul Nat'l Univ, Korea)
- P-18** *Study of Charge Density Waves in LaTe<sub>3</sub> by Time-resolved ARPES with Wavelength-tunable Pump*  
..... **Kecheng Liu** (ISSP, Japan)

- P-19** *Strain-induced altermagnetic bandstructure in RuO<sub>2</sub> thin films*  
..... **San Kang** (Seoul Nat'l Univ, Korea)
- P-20** *Study of the superconducting gap in the Kagome lattice superconductor CsV<sub>3</sub>Sb<sub>5</sub> by low-temperature and high-resolution laser ARPES*  
..... **Akifumi Mine** (ISSP, Japan)
- P-21** *Modification of localized surface plasmon resonance in liquid via conductive atomic force microscopy*  
..... **Taeyoung Moon** (POSTECH, Korea)
- P-22** *Superconducting gap of iron-based superconductor Fe(Se,Te) investigated by low-temperature and high-resolution laser ARPES*  
..... **Tomohiro Hayataka** (ISSP, Japan)
- P-23** *Near 1 mm<sup>2</sup> two-dimensional luminescent-sheet enabled by surface lattice resonance*  
..... **Yeonjeong Koo** (POSTECH, Korea)
- P-24** *Exploring Photo-Induced Superconductivity in Iron-Based Superconductors through Time- and Angle-Resolved Photoemission Spectroscopy*  
..... **Hao Zheng** (ISSP, Japan)
- P-25** *Polarization-optimized tip-enhanced strong coupling in single quantum dots*  
..... **Jinhyuk Bae** (POSTECH, Korea)
- P-26** *Kinetic inductance in magic angle twisted bilayer graphene*  
..... **Miuko Tanaka** (ISSP, Japan)
- P-27** *Gate-tunable interlayer exciton dynamics in twisted WSe<sub>2</sub> homobilayer*  
..... **Hansol Kim / Gyusu Lee kim** (Seoul Nat'l Univ, Korea)
- P-28** *Interplay of valleys, layers and band topology towards tunable interacting quantum phases in a bilayer graphene superlattice*  
..... **Yungi Jeong** (Seoul Nat'l Univ, Korea)
- P-29** *Modulation of the second harmonic generation in two-dimensional antiferromagnet CuCrP<sub>2</sub>S<sub>6</sub>*  
..... **Shunta Aoki** (ISSP, Japan)
- P-30** *Observation of local two-fold magnetic behavior in Sr<sub>2</sub>Ir<sub>1-x</sub>Rh<sub>x</sub>O<sub>4</sub> by MOKE measurement*  
..... **Hyeokjun Heo / Jeongha An** (Seoul Nat'l Univ, Korea)
- P-31** *Ultrafast moiré exciton dynamics in type-I MoSe<sub>2</sub>/WS<sub>2</sub> heterobilayer*  
..... **Jiwon Park** (Seoul Nat'l Univ, Korea)
- P-32** *Large Photoelasticity in Topological Antiferromagnet Mn<sub>3</sub>Sn Studied by Coherent Acoustic Phonon*  
..... **Yuchen Wang** (ISSP, Japan)
- P-33** *Ultrafast Floquet engineering of Fermi-polaron resonances in charge-tunable monolayer WSe<sub>2</sub> devices*  
..... **Hyojin Choi** (Seoul Nat'l Univ, Korea)
- P-34** *Anisotropic conductivity and anomalous Hall conductivity in silicon studied by polarization-resolved terahertz spectroscopy*  
..... **Ami Shirai** (ISSP, Japan)
- P-35** *Spin-Polarized Photocarrier Dynamics in WSe<sub>2</sub>/hBN/Bi<sub>2</sub>Se<sub>3</sub> van der Waals Tunnel Device*  
..... **Minji Noh** (Seoul Nat'l Univ, Korea)
- P-36** *Magneto-photoluminescence on perovskite-type ferroelectric semiconductor CsGeI<sub>3</sub>*  
..... **Hiroaki Fujikawa** (ISSP, Japan)

- P-37 *Minimum topological magnetism in the Hund's excitonic insulator  $GdGaI$*   
..... Ryutaro Okuma (ISSP, Japan)
- P-38 *Characterization of a graphene-hBN superlattice field effect transistor*  
..... Wonbeom Choi (Seoul Nat'l Univ, Korea)
- P-39 *Effect of "trimer frustration" on phase transitions in layered  $LiVO_2$*   
..... Keita Kojima (ISSP, Japan)
- P-40 *Construction of the Cryogenic Scanning Probe Microscopy*  
..... Namkyung Lee (Seoul Nat'l Univ, Korea)
- P-41 *Synthesis and thermoelectric properties of van der Waals crystal  $Ta_2Ni_3Te_5$*   
..... Hiroto Isomura (ISSP, Japan)
- P-42 *Graphene band structure modulation using antiferroelectric moire substrate*  
..... Myungjin Jeon (Seoul Nat'l Univ, Korea)
- P-43 *Synthesis and superconductivity of hexagonal  $Zr_6RuBi_2$  without spatial inversion symmetry*  
..... Kousuke Yuchi (ISSP, Japan)
- P-44 *General Tensor Network Framework for 2D Frustrated Spin Systems*  
..... Fengfeng Song (ISSP, Japan)
- P-45 *Fermi Surface Spin Texture and Topological Superconductivity in Spin-Orbit Free Noncollinear Antiferromagnets*  
..... Seung Hun Lee (Seoul Nat'l Univ, Korea)
- P-46 *Schwinger effect in  $S=1$  antiferromagnetic spin chains*  
..... Koichi Okazaki (ISSP, Japan)
- P-47 *Quantum Valley Hall effect without Berry curvature*  
..... Rasoul Ghadimi (Seoul Nat'l Univ, Korea)
- P-48 *Supersymmetry and topological phases*  
..... Hiroyuki Sudo (ISSP, Japan)
- P-49 *Euler band topology in spin-orbit coupled magnetic systems*  
..... Yuting Qian (Seoul Nat'l Univ, Korea)
- P-50 *Dynamics of Biological Chemical Reaction Networks in Vivo Using the Matrix Product State Method*  
..... Yuki Watanabe (ISSP, Japan)
- P-51 *Quantum valley and subvalley Hall effect in large-angle twisted bilayer graphene*  
..... Chiranjit Mondal (Seoul Nat'l Univ, Korea)
- P-52 *Tensor network simulations for non-orientable surfaces*  
..... Haruki Shimizu (ISSP, Japan)
- P-53 *Origin of correlated gaps in twisted bilayer graphene*  
..... Beomjoon Goh (Seoul Nat'l Univ, Korea)
- P-54 *Supercurrent distribution in real-space and anomalous paramagnetic response in a superconducting quasicrystal*  
..... Takumi Fukushima (ISSP, Japan)

(Accommodation & Banquet)

## HOW TO USE

SNU Gwanak campus has more than 200 buildings, all of which have their own numbers.

The map is divided into 11 zones, using area codes A-J.

If you have a building number, find its area code under 'Buildings', and locate the place. If you only have a name of the place, find the number under 'Category'.

Note that some buildings are not shown on the map.

- Gate to parking area
- Open parking area
- Bus stops
- Airport Limousine
- Roadway
- Health care
- Dining
- Cafés

## BUILDINGS

|        |                                  |
|--------|----------------------------------|
| H 1~3  | College of Humanities            |
| H 4    | SHINYANG Hall II                 |
| H 5~7  | College of Humanities            |
| H 8    | DOOSAN Humanities Hall           |
| H 9~10 | College of Education             |
| H 10-1 | Education Information Hall       |
| H 11   | College of Education             |
| H 12   | Teacher Training Enrichment Hall |
| H 13   | College of Education             |
| H 14   | College of Humanities            |
| B 15   | College of Law                   |
| B 15-1 | College of Law                   |
| B 16   | College of Social Sciences       |

● Under construction

|           |                                                 |
|-----------|-------------------------------------------------|
| B 16-1    | SHINYANG Hall III                               |
| B 17      | College of Law                                  |
| G 18~19   | College of Natural Sciences                     |
| C 20~21   | College of Pharmacy                             |
| C 22~28   | College of Natural Sciences                     |
| G 29      | College of Pharmacy                             |
| G 29-1    | College of Pharmacy                             |
| E 30~32   | College of Engineering                          |
| E 32-1    | HAEDONG Student Center                          |
| E 33~37   | College of Engineering                          |
| E 38      | Global Education Center for Engineers           |
| E 39      | College of Engineering                          |
| E 43      | College of Engineering                          |
| E 43-1    | Multimedia Lecture Building I                   |
| G 45~48-1 | Observatories                                   |
| I 49      | Design Center & Concert Hall                    |
| I 50~52-2 | College of Fine Arts                            |
| I 53~55   | College of Music                                |
| C 56      | College of Natural Sciences                     |
| I 57~57-1 | Graduate School of Public Administration (GSPA) |

|            |                                                                 |
|------------|-----------------------------------------------------------------|
| I 58       | College of Business Administration                              |
| I 59       | Graduate School of Business                                     |
| C 60       | Administration Building                                         |
| H 61       | Center for Teaching and Learning & Faculty of Liberal Education |
| C 62       | University Library                                              |
| C 62-1     | KWANJEONG Library                                               |
| C 63       | Student Center                                                  |
| B 64       | IBK Communication Center                                        |
| G 65       | Faculty Club                                                    |
| B 67       | Dure Cultural Center                                            |
| G 69       | Institute of Laboratory Animal Resources                        |
| I 70       | University Museum                                               |
| I 71, 71-1 | Gymnasium                                                       |
| I 71-2     | POSCO Sports Center                                             |
| B 72       | Law Library                                                     |
| B 73       | University Cultural Center                                      |
| I 74       | Arts Research Center                                            |
| D 75       | University Newspaper                                            |
| H 76       | 4th Cafeteria                                                   |
| A 80       | SNU Veterinary Medical Teaching Hospital                        |

5F, 75-1

|             |                                                     |
|-------------|-----------------------------------------------------|
| A 80-1      | Bioengineering Building                             |
| A 81        | Biotechnology Center                                |
| I 82        | Graduate School of Environmental Studies (GSES)     |
| I 83        | Multimedia Lecture Building II                      |
| B 84        | Centennial Building, College of Law                 |
| A 85        | College of Veterinary Medicine                      |
| A 86        | Center for Dental Research and Clinic               |
| A 97~98     | Institute of Environmental Protection and Safety    |
| B 101       | Asia Center                                         |
| C 102       | Office of Information Systems and Technology        |
| B 103       | Kyujanggak Archives                                 |
| G 104       | Inter-University Semiconductor Research Center      |
| G 105       | Institute for Molecular Biology & Design            |
| H 109       | Cafeteria Jahayon                                   |
| I 113       | Dongwon Dining Hall                                 |
| K 121       | Presidential Residence                              |
| K 122       | Faculty Apartments                                  |
| K 125~125-2 | HOAM Faculty House                                  |
| K 126~127   | Guest House                                         |
| C 129       | Sangsan Mathematical Science Building               |
| E 130       | Electrical Engineering & Science Research Institute |
| F 131       | Research Institute of Advanced Materials            |
| F 132       | Institute of New Media and Communications           |
| F 133       | Automation and Systems Research Institute           |
| F 135       | Research Institute of Energy and Resources          |

|                |                                                              |
|----------------|--------------------------------------------------------------|
| A 137~137-1    | Language Education Institute                                 |
| A 137-2        | DAELIM International House                                   |
| F 138          | Institute of Computer Technology                             |
| O 139, 139-1   | Inter-University Center for Natural Science Research         |
| I 140~140-2    | Graduate School of International Studies (GSIS)              |
| I 141~142      | College of Pharmacy                                          |
| A 150          | Office of Admissions                                         |
| A 151          | Museum of Art (MoA)                                          |
| A 152          | Office of International Affairs (CJ International Center)    |
| A 152-1        | LOTTE International Hall                                     |
| A 153          | WOOJEONGWON                                                  |
| D 200          | College of Agriculture and Life Sciences                     |
| D 201          | National Instrumentation Center for Environmental Management |
| D 203          | SPC Research Building                                        |
| I 220          | College of Liberal Studies                                   |
| I 221          | Graduate School of Public Health (GSPH)                      |
| I 222          | College of Human Ecology                                     |
| F 301~302      | College of Engineering                                       |
| F 310          | Engineer House                                               |
| F 311          | Institute of Chemical Processes                              |
| F 312~313      | Institute of Advanced Machinery and Design                   |
| F 314          | Advanced Automotive Research Center                          |
| F 316          | Structure Experiment Building                                |
| D 500          | College of Natural Sciences                                  |
| J 900~906, 918 | Gwanak-sa Graduate House                                     |
| J 919          | Gwanak-sa Undergraduate House                                |
| J 920          | Gwanak-sa Student Center                                     |
| J 921~926      | Gwanak-sa Undergraduate House                                |
| J 931~935      | Gwanak-sa Family House                                       |
| J 936          | Staff Apartments                                             |
| K 940          | Main Research Center                                         |
| K 941~941-1    | Child Educare Center                                         |
| K 942~945      | R&D Centers                                                  |
| K 946          | BK International House                                       |
| K 950          | International Vaccine Institute                              |

## HOTEL INFORMATION

- Hoam Faculty House (<https://hoam.snu.ac.kr>)



Address: 125 Bldg. 1 Gwanak-ro, Gwanak-gu, Seoul, Korea  
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|                          | T i m e |       |       |       |       |       |       |       |
|--------------------------|---------|-------|-------|-------|-------|-------|-------|-------|
| <b>Depature<br/>HOAM</b> | 4:20    | 5:00  | 6:00  | 7:00  | 8:00  | 9:10  | 10:10 | 11:10 |
| <b>HOAM → T1 → T2</b>    | 12:20   | 13:30 | 14:30 | 15:30 | 16:50 | 18:10 | 19:30 |       |
| <b>Arrival<br/>HOAM</b>  | 6:50    | 8:00  | 9:00  | 10:10 | 11:20 | 12:20 | 13:15 | 14:30 |
| <b>T2 → T1 → HOAM</b>    | 15:40   | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 21:10 | 22:30 |

- Location of the bus stop at Airport Terminal 2 : Gate 27
- Location of the bus stop at Airport Terminal 1 : Gate 6B - 1
- Fares : 17,000 Korean won (You may get a ticket from the bus driver by cash)
- It takes 1 hour 40 minutes from Airport Terminal 2 (within 100 minutes)
- It takes 1 hour 20 minutes from Airport Terminal 1 (within 80 minutes)
- 6017 Route : Terminal 2 → Terminal 1 → Hoam Faculty House
- As of February 9, 2023.