

- 2024.04 제42권 제1호
- Bulletin of the Korean Physical Society
- 한국물리학회 회보

2024 KPS Spring Meeting

2024년 봄 학술논문발표회 및 제100회 정기총회

일시: 4월 23일(화)~26일(금)

장소: 대전컨벤션센터 제1 전시장

후원



세션코드 읽는 법 (How to Read Session Code?)



(1) The capital letter : when

W: Tuesday 15:00-18:00

T: Wednesday 10:00-11:48

A: Wednesday 12:00-13:48

B: Wednesday 14:00-15:48

C: Wednesday 16:00-17:48

D: Thursday 08:30-10:18

Y: Thursday 10:30-11:18

E: Thursday 13:00-14:12

F: Thursday 14:24-16:12

G: Thursday 16:24-18:12

H: Friday 08:30-10:18

I: Friday 10:30-12:18

J: Friday 13:00-14:48

(2) The number : where

1: the first room. 2: the second room. But, they are not physical room numbers, 101, 102 etc.

(Exception - P1, P2: poster sessions)

(3) The last two letters : who should attend the session

(who or which division organizes the session)

- ap : applied physics
- as : astrophysics
- at : atomic and molecular physics
- bp : biological physics
- co : condensed matter physics
- in : institution
- nu : nuclear physics
- op : optics and quantum electronics
- or : KPS
- pa : particles and Fields
- pl : plasma physics
- qu: quantum technology
- se : semiconductor physics
- st : statistical physics
- te : physics teaching

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시간 별 세션 안내

(Program by Time)

April 23 (Tuesday)

Session W: April 23(Tue) 15:00-18:00

Session code	Place	Program
[W15-or]	DCC1 Lobby	Lab Tour

April 24 (Wednesday)

Oral Sessions ----- T: April 24(Wed) 10:00-11:48

Tutorials & Public Lecture

Session code	Room No.	Session Title
[T4-ap]	104	Tutorial: Advanced Deposition Technologies of Oxide Thin Films
[T7-co]	107	Tutorial: Utilizing 4D-STEM for Characterization of Emerging Phenomena in Condensed Matter Systems
[T8-co]	108	Tutorial: Electronic Structure and Symmetry Analysis of Altermagnetic Materials
[T9-se]	201	Tutorial: Electron Dynamics in Ultrafast Time Domains
[T12-pl]	205	Tutorial: Plasma Physics Applications to Semiconductor Industry
[T13-bp]	206	Tutorial: What is Cryo-EM?
[T15-qu]	301	Public Lecture: Quantum Technology
	301	Opening Ceremony

Oral Sessions ----- A: April 24(Wed) 12:00-13:48

Session code	Room No.	Session Title
[A1-pa]	101	Accelerator I
[A2-pa]	102	Non-accelerator I
[A3-nu]	103	Relativistic Heavy Ion Collision
[A4-ap]	104	Focus: Oxides for Future Device Applications
[A5-ap]	105	Focus: Development and Applications of Biosensor Technology

[A6-co]	106	Strongly Correlated Systems
[A7-co]	107	Condensed-matter Computational Physics
[A8-co]	108	Magnetism
[A9-se]	201	Focus: Recent Semiconductor Technologies and Devices in Industry
[A10-se]	202	Focus: Semiconductor Materials for Optical Devices
[A12-in]	205	Institutional: Construction of 2nd HX beamline of PAL-XFEL and its science
[A13-bp]	206	Focus: Frontiers in Biophysics
[A14-op]	209	Terahertz I
Ⓔ[A15-qu]	301	Pioneer: Coherent Quantum Control and Quantum Computing I

Oral Sessions ----- B: April 24(Wed) 14:00-15:48

Session code	Room No.	Session Title
[B1-pa]	101	Accelerator II
[B2-pa]	102	Non-accelerator II
[B3-nu]	103	Nuclear Astrophysics, Relativistic Heavy Ion Collision
Ⓔ[B4-ap]	104	Bilateral: The 8th Korea-Japan Joint Symposium on Organic Electronics: Recent Advances on Organic Semiconductor Materials and Devices I
[B5-ap]	105	Focus: Quantum Nanodevices and Quantum Applied Technologies I
[B6-co]	106	Focus: Exploring Exotic Phases of Quantum Materials
[B7-co]	107	Focus: 2D Systems: Insights from Theory and Computation
[B8-co]	108	Nano and Mesoscopic Physics
[B9-se]	201	Focus: Functionalization of 2D Nanomaterials and Their Sensor Device Application
[B10-se]	202	Focus: MOCVD-based 2D Material Synthesis and Application
[B12-or]	205	Operating Status and Future Upgrades of Major Accelerator Facilities
[B13-bp]	206	Focus: Physics of Brain Structure and Function
[B14-op]	209	Nanophotonics
[B15-qu]	301	Focus: Innovating Quantum Communications I

Oral Sessions ----- C: April 24(Wed) 16:00-17:48

Session code	Room No.	Session Title
[C1-pa]	101	Accelerator III
Ⓔ[C2-pa]	102	Focus: New Aspects of Symmetry
[C3-nu]	103	Nuclear Experimental Method and Instrumentation
Ⓔ[C4-ap]	104	Bilateral: The 8th Korea-Japan Joint Symposium on Organic Electronics: Recent Advances on Organic Semiconductor Materials and Devices II
[C5-ap]	105	Focus: Quantum Nanodevices and Quantum Applied Technologies II
[C6-co]	106	Focus: Exploring Exotic Phases of Quantum Materials
[C7-co]	107	Focus: 2D Systems: Insights from Theory and Computation
[C8-co]	108	Nano and Mesoscopic Physics/Surface/Interface/Nanomaterials
[C9-se]	201	Focus: Advanced Sensors: From Wearables to Robotics I
[C10-se]	202	Focus: AI Semiconductor Materials and Devices
[C11-or]	204	Women's Session:Chat-GPT for Physics: Booming or Dooming
[C12-pl]	205	Focus: Toward next-generation accelerator V-Trends of R&Ds in Accelerators and Issues toward Scientific leap
[C13-bp]	206	Young Biophysicist Award and Cellular Biological Physics
[C14-op]	209	Ultrafast and Relativistic Optics

Poster Sessions ----- P1: April 24(Wed) 18:15-19:45

Venue: DCC1 Exhibition Hall (1F)

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Session code	Session Title
[P1-pa]	Particles & Fields: Field and String & Accelerator-based Particle Physics Experiments
[P1-nu]	Nuclear Physics
[P1-co.1]	Condensed Matter Physics: Magnetism/Superconductivity
[P1-co.2]	Condensed Matter Physics: Strongly Correlated/Dielectrics/Functional Oxides
[P1-ap.1]	Applied Physics: 2D Materials
[P1-ap.2]	Applied Physics: Nano Materials /Surface and Interface
[P1-ap.3]	Applied Physics: Photonics/Quantum/Organic/Bio
[P1-op]	Optics and Quantum Electronics
[P1-se.1]	Semiconductor Physics: Growth, Structure, Wide Bandgap, and Devices

[P1-se.2]	Semiconductor Physics: Emerging 2D Materials and Next-generation Semiconductors/Devices/Quantum
[P1-bp]	Biological Physics

April 25 (Thursday)

Oral Sessions ----- D: April 25(Thu) 08:30-10:18

Session code	Room No.	Session Title
Ⓔ[D1-pa]	101	Pioneer : Forward Physics at LHC 1
[D2-pa]	102	Field and String Theory I
[D3-nu]	103	Nuclear Experimental Method and Instrumentation
[D4-ap]	104	Focus: Recent Advances in Magnetic Imaging
[D5-ap]	105	2D Materials
[D6-co]	106	Strongly Correlated Systems
Ⓔ[D7-co]	107	Pioneer: Recent advancement in XFEL and Synchrotron Radiation Science
[D8-co]	108	Magnetism
[D9-at]	201	AMP I - Ultracold Atoms, Molecules, and Matter Wave
Ⓔ[D10-se]	202	Pioneer: Physics of Si-compatible Ferroelectric Memory I
[D13-bp]	206	Molecular Biological Physics
[D14-op]	209	Focus: Inverse Design in Nanophotonics
[D15-qu]	301	Focus: Application of Quantum Algorithm for Physics

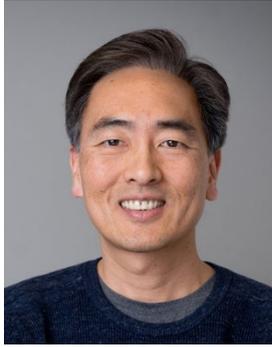
Oral Sessions ----- Y: April 25(Thu) 10:30-11:18

Ⓔ[Y15-qu] Plenary Lecture

2024. 04. 25 Thursday 10:30~11:18 Room: 301

Y15.01 [10:30 - 11:18]

Practical Quantum Computing with Trapped Ions / KIM Jungsang^{*1} (¹Department of Electrical and Computer Engineering, Duke University)



ABSTRACT:

Trapped atomic ions provide an ideal physical platform to build quantum computers and networks. Over the past decade or so, there has been substantial progress in leveraging this system to construct scalable and practical quantum information processors. In this talk, I will discuss the core physics and technical advances that were made that led to trapped ion quantum computers, and the insights that have been gained in designing and constructing robust systems that can potentially lead to scientifically meaningful computations and simulations.

This talk is hosted jointly by the Korean Physical Society and the Korea Institute for Advanced Study.

Poster Sessions ----- P2: April 25(Thu) 11:30-13:00

Venue: DCC1 Exhibition Hall (1F)

- Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00
- Presentation (mandatory): April 25, 11:30-13:00

Session code	Session Title
[P2-pa]	Particles & Fields: Non-accelerator-based Particle Physics Experiments
[P2-co.1]	Condensed Matter Physics: Nano-Meso/Surface-Interface
[P2-co.2]	Condensed Matter Physics: Computational Physics
[P2-co.3]	Condensed Matter Physics: Other Condensed Materials/Instruments
[P2-ap.1]	Applied Physics: Oxide Materials
[P2-ap.2]	Applied Physics: Magnetism/Energy/Computational
[P2-st]	Statistical Physics
[P2-te]	Physics Teaching
[P2-pl.1]	Plasma Physics: Nuclear Fusion & Accelerator and Beam
[P2-pl.2]	Plasma Physics: Laser & Basic Plasma, Application, Processing and Diagnostics
[P2-at]	Atomic & Molecular Physics
[P2-se]	Semiconductor Physics: Energy Materials and Semiconductor Applications
[P2-as]	Astrophysics

Oral Sessions ----- E: April 25(Thu) 13:00-14:12

Session code	Room No.	Session Title
[E1-pa]	101	Accelerator-Pheno joint
[E2-pa]	102	Field and String Theory II
[E3-nu]	103	Focus: Early-Stage Research at RAON I
[E4-ap]	104	Focus: Light-Matter Interaction in Emerging 2D Materials I
[E5-ap]	105	Surface and Interface
[E6-st]	106	Phase Transitions & Critical Phenomena
[E7-co]	107	Condensed-matter Computational Physics
[E8-co]	108	Instrumentation and Big Facilities/Instrumentation and Big Facilities
[E9-at]	201	AMP II - Spectroscopy and collisions
[E10-se]	202	Energy Materials and Devices - Harvesting, Storage, Conversion
[E11-te]	204	Focus: SPACE LAB 스타브릿지 센터 사업과 물리교육의 확장
[E12-as]	205	Other Astrophysics
[E13-bp]	206	Theoretical Biological Physics
[E14-op]	209	Focus: New Frontiers of Light-matter Interaction in Non-Hermitian and Non-equilibrium Photonics
Ⓜ[E15-qu]	301	Pioneer: Coherent Quantum Control and Quantum Computing II

Oral Sessions ----- F: April 25(Thu) 14:24-16:12

Session code	Room No.	Session Title
Ⓜ[F1-pa]	101	Pioneer : Forward Physics at LHC II
[F2-or]	102	정책위원회 세션(The Lecture of the Policy Committee in KPS)
[F3-nu]	103	Focus: Early-Stage Research at RAON II
[F4-ap]	104	Focus: Light-Matter Interaction in Emerging 2D Materials II
[F5-ap]	105	Oxide and Energy
[F6-st]	106	Nonequilibrium Systems
Ⓜ[F7-co]	107	Pioneer: Recent advancement in XFEL and Synchrotron Radiation Science
[F8-co]	108	Focus: Unconventional Physical Phenomena in Symmetry-engineered Functional Oxides

[F9-at]	201	AMP III - Quantum Information: Simulations and Computations I
Ⓔ[F10-se]	202	Pioneer: Physics of Si-compatible Ferroelectric Memory II
[F11-te]	204	Physics Teaching I
[F12-pl]	205	Role of Public and Private Sectors for Nuclear Fusion
Ⓔ[F13-as]	206	Focus: New Perspectives of Quantum Cosmology I
[F14-op]	209	Focus: Multidimensional Oxide Photonics
Ⓔ[F15-qu]	301	Pioneer: Trends in Quantum Sensing Technologies I

Oral Sessions ----- G: April 25(Thu) 16:24-18:12

Session code	Room No.	Session Title
[G1-pa]	101	Phenomenology I
[G2-or]	102	전국물리학 분야 학과(부)장 토론회(Open forum of the deans in Physics field)
[G3-nu]	103	Focus: Early-Stage Research at RAON III
[G4-ap]	104	Focus: Computational Physics – Application of Machine Learning and Quantum Computing
[G5-ap]	105	Focus: Recent Research on Physical Properties of Halide Perovskites and Their Applications
[G6-st]	106	Complex Systems I
[G7-co]	107	Focus: Hybrid Quantum Systems
[G8-co]	108	Focus: Unconventional Physical Phenomena in Symmetry-engineered Functional Oxides
[G9-at]	201	AMP IV - Quantum Information: Simulations and Computations II
[G10-se]	202	Focus: Advanced Sensors: From Wearables to Robotics II
[G11-te]	204	Physics Teaching II
[G12-pl]	205	Nuclear Fusion & Accelerators and Beams
Ⓔ[G13-as]	206	Focus: New Perspectives of Quantum Cosmology II
[G14-op]	209	Biophotonics + Terahertz II
Ⓔ[G15-qu]	301	Pioneer: Coherent Quantum Control and Quantum Computing III

April 26 (Friday)

Oral Sessions ----- H: April 26(Fri) 08:30-10:18

Session code	Room No.	Session Title
[H1-pa]	101	Accelerator IV
[H2-pa]	102	Non-accelerator III
[H3-nu]	103	Hadron Physics and Nuclear Power
[H4-ap]	104	Quantum Information and Biophysics
[H5-ap]	105	Focus: 2-dimensional Van der Waals Ferroelectrics I
[H6-st]	106	Complex Systems II
[H7-co]	107	Condensed-matter Computational Physics
[H8-co]	108	Research on High-Tc Superconductivity Related Systems
[H9-se]	201	Next-generation Semiconductors and Devices - Memory, AI, Neuromorphic, MOSFET
[H10-se]	202	Semiconductor Materials
[H11-te]	204	Physics Teaching III
[H12-pl]	205	Laser plasmas & Basic plasma phenomena
[H13-as]	206	Gravity / Cosmology
[H14-at]	209	Focus: Quantum memory and quantum network
Ⓔ[H15-qu]	301	Pioneer: Trends in Quantum Sensing Technologies II

Oral Sessions ----- I: April 26(Fri) 10:30-12:18

Session code	Room No.	Session Title
[I1-pa]	101	Accelerator V
[I2-nu]	102	Nuclear Structure
[I3-nu]	103	Hadron physics, nuclear reactions
[I4-ap]	104	Photonics and Organic Electronics
[I5-ap]	105	Focus: 2-dimensional Van der Waals Ferroelectrics II
[I6-st]	106	Complex Systems III
[I7-co]	107	Magnetism
[I8-co]	108	Focus: Research on High-Tc Superconductivity Related Systems
[I9-se]	201	Sensors, Devices and Applications
[I10-se]	202	Focus: Properties and Applied Devices of Perovskite Materials
[I11-te]	204	Focus: 예비교사를 위한 물리학 강좌 운영 사례 및 발전 방안
[I12-pl]	205	Focus: Advanced beam physics
[I13-as]	206	Gravity/Cosmology and Gravitational Waves/Multi-Messenger

Astrophysics		
[I14-at]	209	AMP V - Quantum sensing
[I15-qu]	301	Focus: Innovating Quantum Communications II

Oral Sessions ----- J: April 26(Fri) 13:00-14:48

Session code	Room No.	Session Title
[J1-pa]	101	Phenomenology II
[J4-ap]	104	Spin and Magnetism
[J5-ap]	105	2D and Nano Materials
[J6-st]	106	Soft Matter & Biophysics
[J7-co]	107	Strongly Correlated Systems/Dielectrics/Functional Oxides
[J8-co]	108	Superconductivity
[J13-as]	206	High Energy Astrophysics / Compact Objects
Ⓔ[J15-qu]	301	Pioneer: Coherent Quantum Control and Quantum Computing IV

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구두발표논문 시간표

(Oral Session Schedule)

Session W

[W15-or] Lab Tour

2024. 04. 23 Tuesday 15:00~18:00

집합장소: Lobby

2024 년 봄학술대회 정부출연연구소 견학 : 한국표준과학연구원, 한국에너지기술연구원 (세종양산시설)

Session T

[T4-ap] Tutorial: Advanced Deposition Technologies of Oxide Thin Films

2024. 04. 24 Wednesday 10:00~10:48

Room: 104

좌장: 양상모 서강대학교

Chair: YANG Sang Mo (Sogang University)

T4.01 [10:00 - 10:48]

Advanced thin film deposition methods for complex oxides / KIM Woojin^{*1} (¹School of Materials Science and Engineering, Pusan National University)

[T7-co] Tutorial: Utilizing 4D-STEM for Characterization of Emerging Phenomena in Condensed Matter Systems

2024. 04. 24 Wednesday 10:00~11:48

Room: 107

좌장: 유효빈 서강대학교

Chair: Yoo Hyobin (Sogang University)

T7.01 [10:00 - 11:48]

4 차원 주사투과전자현미경(4D-STEM)을 활용한 응집물질물성연구 / YANG Yongsoo^{*1} (¹Department of Physics, KAIST)

[T8-co] Tutorial: Electronic Structure and Symmetry Analysis of Altermagnetic Materials

2024. 04. 24 Wednesday 10:00~11:48

Room: 108

좌장: 김재훈 연세대학교

Chair: KIM Jae Hoon (Yonsei University)

T8.01 [10:00 - 11:48]

Electronic Structure and Symmetry Analysis of Altermagnetic Materials / KANG Chang-Jong^{*1}

(¹Department of Physics, Chungnam National University)

[T9-se] Tutorial: Electron Dynamics in Ultrafast Time Domains

2024. 04. 24 Wednesday 10:00~11:36

Room: 201

좌장: 김기강 성균관대학교

Chair: KIM Ki Kang (Sungkyunkwan University)

T9.01 [10:00 - 10:48]

Electron dynamics in ultrafast time domains / LEE JaeDong^{*1} (¹Department of Physics and Chemistry, DGIST)

T9.02 [10:48 - 11:36]

Attosecond pulses for probing ultrafast electron dynamics in atoms, molecules, and solids / KIM Kyung Taec^{*1,2} (¹Department of Physics and Photon Science, GIST, ²Center for Relativistic Laser Science, IBS)

[T12-pl] Tutorial: Plasma Physics Applications to Semiconductor Industry

2024. 04. 24 Wednesday 10:00~11:12

Room: 205

좌장: 유신재 충남대학교

Chair: You ShinJae (Chungnam National University)

T12.01 [10:00 - 10:24]

Plasma and multi-scale simulations for plasma deposition processes / KIM Jin Seok^{*1}

(¹Simulation Technology Development Department, Tokyo Electron, Japan)

T12.02 [10:24 - 10:48]

Basic physics for plasma etching / LEE Dongsoo^{*1} (¹Dielectric Etch, Lam Research Korea)

T12.03 [10:48 - 11:12]

Plasma Deposition Process for Semiconductor Industry / YU Dong Hun^{*1} (¹Simulation Research Center, KWT Solution)

[T13-bp] Tutorial: What is Cryo-EM?

2024. 04. 24 Wednesday 10:00~10:48

Room: 206

좌장: **손민주** 포항공과대학교

Chair: SHON Min Ju (POSTECH)

T13.01 [10:00 - 10:48]

What is Cryo-EM? / KIM Youngjin^{*1} (¹Life science, POSTECH)

[T15-qu] Public Lecture: Quantum Technology

2024. 04. 24 Wednesday 10:00~10:48

Room: 301

좌장: **장준익** 서강대학교

Chair: JANG Joon Ik (Sogang University)

T15.01 [10:00 - 10:48]

양자 과학 기술의 이해 / 채은미^{*1} (¹ 고려대학교 물리학과)

Session A

[A1-pa] Accelerator I

2024. 04. 24 Wednesday 12:00~13:48

Room: 101

좌장: **김양수** 송실대학교

Chair: KIM Doris Yangsoo (Soongsil University)

A1.01* [12:00 - 12:12]

Charm rare decays at Belle II / KWON Youngjoon^{*1}, KIM Chanho¹, KIM Jaeyoung¹ (¹Physics, Yonsei University)

A1.02* [12:12 - 12:24]

Alarm system and HLT work in Belle II operation / KWON Youngjoon^{*1}, KIM Jaeyoung¹, KIM Chanho¹, LEE Chanyoung¹, LAM Tommy², KUNIGO Takuto³, PARK Seokhee³ (¹Physics, Yonsei University, ²Department of Physics, Virginia Tech, ³High Energy Accelerator Research Organization, KEK)

A1.03 [12:24 - 12:36]

Search for $B_0 \rightarrow I \tau$ decay with machine learning at Belle experiment / KIM Kyungho², CHO Kihyeon^{*2,3} (¹UST, KISTI, ²Computational Science Team, KISTI, ³Department of Physics, UST)

A1.04 [12:36 - 12:48]

Dark photon search using $B \rightarrow K l l l$ decay at Belle / KIM Yongkyu¹, KWON Youngjoon^{*1} (¹Physics, Yonsei University)

A1.05 [12:48 - 13:00]

Search for ALP through $B \rightarrow K a'$ ($a' \rightarrow \gamma\gamma$) decay at Belle / CHO Sungjin¹, KWON Youngjoon^{*1} (¹Physics, Yonsei University)

A1.06 [13:00 - 13:12]

The Status of the Run-4/5/6 Analysis in the Muon g-2 Experiment at Fermilab / KIM On^{*1} (¹Physics and Astronomy, University of Mississippi)

A1.07 [13:12 - 13:24]

The status of the GBAR experiment / KIM Bongho^{*1} (¹Center for Underground Physics, IBS)

A1.08* [13:24 - 13:36]

Probing mixing between sterile neutrino and tau neutrino in the SHiP experiment / CHOI Ki-Young¹, KIM Sung Hyun², KIM Yeong Gyun³, LEE Kang Young², LEE Kyong Sei⁴, PARK Byung Do², SOHN Jong Yoon², YOO Seong Moon^{*1}, YOON Chun Sil² (¹Department of Physics, Sungkyunkwan University, ²Department of Physics Education & Research Institute of Natural Science, Gyeongsang National University, ³Department of Science Education, Gwangju National University of Education, ⁴Department of Physics, Korea University)

A1.09 [13:36 - 13:48]

Status of JSNS² and JSNS²-II / PARK RyeongGyoon^{*1}, JOO KyungKwang¹, KIM Jae Yool¹, LIM In Taek¹, MOON DongHo¹, PARK H. W.¹, KIM Eun Joo², CHOI J. H.³, PAC Myoung Youl³, YEO Insung³, JANG Jee-Seung⁴, KIM Wooyoung⁵, PARK Jungsic⁵, GOH Junghwan⁶, HWANG Wonsang⁶, YOO Chang Hyun⁶, JANG H. I.⁷, CHOI Ji Young⁷, KANG S. K.⁸, CHEOUN Myung Ki⁹, LEE C. Y.⁹, JUNG Da Eun¹⁰, YU Intae¹⁰ (¹Department of Physics, Chonnam National University, ²Division of Science Education, Jeonbuk National University, ³Laboratory for High Energy Physics, Dongshin University, ⁴Department of Physics and Optical Science, GIST, ⁵Department of Physics, Kyungpook National University, ⁶Department of Physics, Kyung Hee University, ⁷Department of Fire Safety, Seoyeong University, ⁸School of Liberal Arts, Seoul National University of Science and Technology, ⁹Department of Physics, Soongsil University, ¹⁰Department of Physics, Sungkyunkwan University)

[A2-pa] Non-accelerator I

2024. 04. 24 Wednesday 12:00~13:48

Room: 102

좌장: **오유민** 기초과학연구원

Chair: OH Yoomin (IBS)

A2.01 [12:00 - 12:12]

Status of the AMoRE-II experiment / KIM SeungCheon^{*1} (¹Center for underground physics, Institute for Basic Science)

A2.02 [12:12 - 12:24]

Light channel signal analysis with the lithium molybdate crystal R&D detectors for AMoRE-II experiments / BIJAYA Sharma^{*1,2} (¹Basic science, UST, ²Center for Underground Physics, Institute for Basic Science)

A2.03* [12:24 - 12:36]

Searching for radio impurities in pure materials using the DES method at low temperatures / CHUNG Jongseok^{1,2}, KIM Yong-Hamb^{*2}, KIM Hyelim², LEONARD Douglas Sidney², OLGA Gileva² (¹Physics, Chung-Ang University, ²Center for Underground Physics, IBS)

A2.04 [12:36 - 12:48]

AMoRE-II Muon System Updates and Results / NYANDA Pendo Butogwa^{*1}, KIM Yeongduk², LEE Jaison², KIM Gowoon², SEO Kyungmin³ (¹Basic science, UST, ²cup, IBS, ³Physics, Sejong University)

A2.05 [12:48 - 13:00]

Lead shield for rare event search experiments / SO Jung Ho^{*1}, PARK Su-yeon¹ (¹Institute for Basic Science)

A2.06 [13:00 - 13:12]

Radon mitigation at Yemilab / LEE Moo Hyun^{*1}, SEO Kyungmin² (¹Center for Underground Physics (CUP), IBS, ²Department of Physics, Sejong University)

A2.07 [13:12 - 13:24]

Status of NEOS-II / KO Young Ju^{*1} (¹Center for Underground Physics, Institute for Basic Science)

A2.08 [13:24 - 13:36]

The Current status of the RENE experiment. / YOO Jonghee^{*1}, YANG Byeongsu¹, LEE Wonjun¹, KIM Dojin¹, CHOI Seunghwan¹, JOO Kyung Kwang², MOON Dong Ho², KIM Sang yong², CHOI Ji Young², OH Junkyo², PARK Jisu², YUN Eungyu², JANG Jee-Seung³, GOH Junghwan⁴, HWANG

HyunHo⁴, HWANG Wonsang⁴, PARK Jungsic⁵, HONG SeoBeom⁵, RYU Jiwon⁵, KIM HyunSoo⁶, KIM Eun Joo⁷, JANG Han Il⁸, PAC Myoung Youl⁹, CHOI June Ho⁹, YEO Insung⁹ (¹Physics and Astronomy, Seoul National University, ²Department of Physics, Chonnam National University, ³DEPARTMENT OF PHYSICS AND PHOTON SCIENCE, GIST, ⁴Department of Physics, Kyung Hee University, ⁵Department of Physics, Kyungpook National University, ⁶Physics and Astronomy, Sejong University, ⁷Division of Science Education, Jeonbuk National University, ⁸Dep. of Fire Safety, Seoyeong University, ⁹Laboratory for high energy physics, Dongshin University)

A2.09* [13:36 - 13:48]

Beam test of boron coated GEM neutron detector / PARK Inkyu^{*1}, KIM WooJong¹, KWON Minjae¹ (¹University of Seoul)

[A3-nu] Relativistic Heavy Ion Collision

2024. 04. 24 Wednesday 12:00~13:48

Room: 103

좌장: **김영진** 기초과학연구원

Chair: KIM Young Jin (IBS)

A3.01 [12:00 - 12:12]

Summary for Heavy Ion data taking in Run 3 with CMS / GWAK Piljun¹, BAK Gyeonghwan¹, MOON Dong Ho^{*1} (¹Physics Department, Chonnam National University)

A3.02* [12:12 - 12:24]

Investigation of bias on the centrality-dependent nuclear modification factor in p+A collisions with Monte-Carlo event generators / LIM SangHoon^{*1}, PARK Jinhyun¹ (¹Physics Department, Pusan National University)

A3.03* [12:24 - 12:36]

Multiplicity dependence of Ξ_c^+ baryon production in pp collisions at $\sqrt{s} = 13$ TeV with ALICE / CHO JaeYoon^{*1}, KWEON Min Jung¹ (¹Department of physics, Inha University)

A3.04* [12:36 - 12:48]

Charged-particle jet production in pp collisions at $\sqrt{s} = 13.6$ TeV at the LHC / BAE Joonsuk¹, KIM Beom Kyu^{*1}, KIM Minjung² (¹Physics Department, Sungkyunkwan University, ²Physics Department, Lawrence Berkeley National Lab)

A3.05 [12:48 - 13:00]

Coalescence production of charmed hadrons in heavy ion collisions at the LHC top energy / CHO Sung Tae^{*1} (¹Kangwon National University)

A3.06 [13:00 - 13:12]

Measurement of Ξ_c^0 via semileptonic decay in collisions of pp at 13 TeV with ALICE / KIM Chong^{*1,2}, LIM SangHoon², BOK Jeongsu² (¹Inha University, ²Department of Physics, Pusan National University)

A3.07* [13:12 - 13:24]

Kinematic Description of Ridge Behavior in High-Energy Heavy-Ion Collisions. / CHO Soyeon¹, YOON Jin-Hee^{*1} (¹Dept. of Physics, Inha University)

A3.08* [13:24 - 13:36]

Study for the K_1 measurement in pp collisions with ALICE / LIM SangHoon^{*1}, JI Su-Jeong¹ (¹Physics Department, Pusan National University)

A3.09 [13:36 - 13:48]

Model study on medium effects on quarkonia production from p+p to A+A collisions: SHINCHON / LIM SangHoon^{*1}, KIM Junlee², PARK Jae Beom³, SEO Jinjoo⁴ (¹Physics Department, Pusan National University, ²Industrial Science and Technology Research Institute, Inha University, ³Physics Department, University of Colorado at Boulder, ⁴Physics Department, Heidelberg University)

[A4-ap] Focus: Oxides for Future Device Applications

2024. 04. 24 Wednesday 12:00~13:36

Room: 104

좌장: **이형우** 아주대학교

Chair: Lee Hyungwoo (Ajou University)

A4.01 [12:00 - 12:24]

Heterostructuring freestanding membranes for functional oxide electronics / KIM Tae Heon^{*1} (¹Department of Physics, University of Ulsan)

A4.02 [12:24 - 12:48]

Point defect engineering for functional oxide heterostructures / LEE Jung-Woo^{*1} (¹Department of Materials Science and Engineering, Hongik University)

A4.03 [12:48 - 13:12]

Effect of the stoichiometry on the physical properties of antiperovskite $Sr_{3-x}SnO$ / OH Ju Hyun¹, NAM Kideuk¹, KIM Donghyeon², LEE Dongik¹, PARK Jihun³, PANT Rohit³, KANG Mijeong², TAKEUCHI Ichiro³, LEE Seunghun^{*1} (¹Department of Physics, Pukyong National University,

²Department of Optics and Mechatronics Engineering, Pusan National University, ³Department of Materials Science and Engineering, University of Maryland)

A4.04 [13:12 - 13:36]

Crystallization of Heavy Fermions via Epitaxial Strain in Spinel LiV_2O_4 Thin Film / KIM Minu^{*1}

(¹Department of Physics, Chung-Ang University)

[A5-ap] Focus: Development and Applications of Biosensor Technology

2024. 04. 24 Wednesday 12:00~13:36

Room: 105

좌장: **이원희** 한국과학기술원

Chair: Lee Wonhee (KAIST)

A5.01 [12:00 - 12:24]

Bioelectronic Nose and Air-Liquid Interface Systems for the Detection of Airborne Bio-Targets / HONG Seung Hun^{*1} (¹Physics, Seoul National University)

A5.02 [12:24 - 12:48]

Detection of self-assembled molecular layer using infrared localized surface plasmon resonance / KIM Kyoung-Ho^{*1} (¹Department of Physics, Chungbuk National University)

A5.03 [12:48 - 13:12]

Precision measurement tools for molecular diagnostics / SON Sungmin^{*1} (¹Bio and Brain Engineering, KAIST)

A5.04 [13:12 - 13:36]

Convergence Bionanotechnology for Disease Diagnosis / KANG Taejoon^{*1} (¹Bionanotechnology Research Center, Korea Research Institute of Bioscience and Biotechnology)

[A6-co] Strongly Correlated Systems

2024. 04. 24 Wednesday 12:00~13:36

Room: 106

좌장: **고아라** 전남대학교

Chair: Go Ara (Chonnam National University)

A6.01* [12:00 - 12:12]

Anomalous long-distance RKKY interaction originated from the quasiperiodicity / JEON

Junmo¹, LEE SungBin^{*1} (¹physics, KAIST)

A6.02 [12:12 - 12:24]

Mixed-State Quantum Spin Liquids and Dynamical Anyon Condensations in Kitaev

Lindbladians / HWANG Kyusung^{*1} (¹School of Physics, Korea Institute for Advanced Study)

A6.03* [12:24 - 12:36]

Proof of the nonintegrability of PXP model and general spin-1/2 systems / PARK Haru K¹, LEE

SungBin^{*1} (¹Physics, KAIST)

A6.04 [12:36 - 12:48]

Topology in strong correlation and temperature / SIN Sang Jin^{*1}, YUK Taewon¹ (¹physics

department, Hanyang University)

A6.05* [12:48 - 13:00]

Proximity-Induced Nonlinear Hall Effect in Graphene / CHO Yanni¹, FALSON Joseph², KIM

Youngwook^{*1} (¹Department of Physics and Chemistry, DGIST, ²Department of Applied Physics and

Materials Science, California Institute of Technology)

A6.06 [13:00 - 13:12]

Nonequilibrium dynamical mean field theory study in the dissipated Hubbard model / CHOI

Hongchul^{*1,2}, GOH Beomjoon³, SHIM Ji Hoon^{1,2} (¹Theory group, Max Planck POSTECH Korea

Research Initiative, ²Department of Chemistry, POSTECH, ³Physics, Seoul National University)

A6.07 [13:12 - 13:24]

Trapped Hard-Core Bosons in Flatband Cross-Stitch Lattice / LEE Sanghoon^{1,2}, ANDREANOV

Alexei^{*1,2}, SEDRAKYAN Tigran³, FLACH Sergej^{1,2} (¹Center for Theoretical Physics of Complex

Systems, IBS, ²Basic Science Program, University of Science and Technology, Korea, ³Department

of Physics, University of Massachusetts, Amherst, USA)

A6.08 [13:24 - 13:36]

Quantum Quench Dynamics of Constrained Dipolar Bosons

/ OH Yun Tak^{*1}, HAN Jung Hoon², LEE Hyun-Yong¹ (¹department of physics, Korea University,

Sejong, ²department of physics, Sungkyunkwan University)

[A7-co] Condensed-matter Computational Physics

2024. 04. 24 Wednesday 12:00~13:36

Room: 107

좌장: 박지상 성균관대학교

Chair: Park Ji-Sang (Sungkyunkwan University)

A7.01* [12:00 - 12:12]

First-principles study on the anisotropic Dirac dispersions of AZnBi₂ (A = Ca, Sr, Ba) / LEE Jae Seong^{1,2}, OH Sehoon^{1,2}, PARK Se Young^{*1,2} (1Department of physics, Soongsil University, 2Origin of Matter and Evolution of Galaxies (OMEG) Institute, Soongsil University)

A7.02 [12:12 - 12:24]

Thermal decoupling and superconductivity from domain wall in magic-angle twisted bilayer graphene / LEE Sungwoo^{1,2}, CHOI Woojin¹, KWON Young-Kyun³, SONG Dongjoon⁴, KIM Miyoung^{1,2}, LEE Gun-Do^{*1,2} (1Department of Materials Science and Engineering, Seoul National University, 2) Research Institute of Advanced Materials, Seoul National University, 3) Department of Physics, Department of Information Display, and Research Institute for Basic Sciences, Kyung Hee University, 4) Stewart Blusson Quantum Matter Institute, University of British Columbia)

A7.03 [12:24 - 12:36]

Multiple band inversions and their Floquet topological engineering in two-dimensional systems / LEE Sangmin^{2,1}, KIM Miyoung¹, KWON Young-Kyun^{*2} (1Department of Materials Science and Engineering, Seoul National University, 2Department of Physics, Kyung Hee University)

A7.04* [12:36 - 12:48]

First-principles study on defects in hBN/WSe₂ heterostructures / PARK Sunho¹, KWON Young-Kyun^{*1} (1Department of Physics, Kyung Hee University)

A7.05* [12:48 - 13:00]

Potential performance of two-dimensional topological insulator field-effect transistors / PARK Yungyeong¹, PARK Yosep¹, CHOI Hyeonseok¹, LEE Yeonghun^{*1} (1Department of Electronics Engineering, Incheon National University)

A7.06* [13:00 - 13:12]

Effect of circumferential deformation on the curvature energy of carbon nanotubes from first principles. / CHOI Hyoung Joon^{*1}, LEE Jeeyong¹ (1Department of Physics, Yonsei University)

A7.07* [13:12 - 13:24]

Unveiling the Mechanisms Behind Metal and Ceramic Plasticity: The Role of Electric Charges / YOO Seungwoo¹, PAENG Jeongin², KWON Young-Kyun^{*1} (1Department of Physics, Kyung Hee University, 2Dept. Materials Science and Engineering, Seoul National University)

A7.08 [13:24 - 13:36]

First-principles Study of the Atomistic Mechanism of Ferrocene-based Molecular Junction / KIM Jaeun¹, YEO Hyeonwoo¹, KIM Yong-Hoon^{*1} (1School of Electrical Engineering, KAIST)

[A8-co] Magnetism

2024. 04. 24 Wednesday 12:00~13:24

Room: 108

좌장: **이규준** 고려대학교

Chair: LEE Kyujoon (Korea University)

A8.01 [12:00 - 12:12]

Controllable Skyrmion Islands in Moire Magnet / PARK Jemin¹, PARK Haru K¹, LEE SungBin^{*1}
(¹physics, KAIST)

A8.02* [12:12 - 12:24]

Domain wall networks as skyrmion crystals / LEE Seungho¹, KIM Se Kwon^{*1}, NITTA Muneto², FUJIMORI Toshiaki³ (¹Physics, KAIST, ²Physics, Keio University, ³Fundamental Education, Dokkyo Medical University)

A8.03* [12:24 - 12:36]

Chaotic Computing with Skyrmions Based on Periodic Modulation of Perpendicular Magnetic Anisotropy / PARK Gyuyoung², KIM Sang-Koog^{*2} (¹Seoul National University, ²Department of Materials Science and Engineering, Seoul National University)

A8.04* [12:36 - 12:48]

Sensing magnetic samples through Nitrogen-Vacancy center using widefield Microscopy / CHUNG Jugyeong¹, JANG Hyunjun¹, YOON Jungbae¹, JUNG Jinsu¹, KIM Chulki², LEE Donghun^{*1}
(¹Physics, Korea University, ²Center for Quantum Information, KIST)

A8.05 [12:48 - 13:00]

Magnetic and Mössbauer spectroscopic study of Co-doped superconductor $\text{CaFe}_{0.9}\text{Co}_{0.1}\text{AsF}$ / LEE Kimoon², YOON Sunghyun^{*2} (¹Kunsan National University, ²Department of Physics, Kunsan National University)

A8.06* [13:00 - 13:12]

Comparison of Fe_3GaTe_2 and Fe_3GeTe_2 : magneto-crystalline anisotropy, exchange coefficients, and Curie temperature / KIM Gyeonghye¹, OCHIRKHUYAG Tumentsereg², LEE HyunJu¹, ODKHUU Dorj², RHIM Sonny^{*1} (¹Department of Physics, University of Ulsan, ²Department of Physics, Incheon National University)

A8.07 [13:12 - 13:24]

Pressure-Induced Modulations in the Electrical and Structural Properties of $\text{Co}_{1/3}\text{TaS}_2$ / KANG

Jeonghun¹, CUI Hengbo¹, PARK Pyeongjae^{1,2}, DONG Qing^{1,3}, LEE Yoonhan¹, PARK Je-Geun¹, KIM Jae Yong³, KIM Kee Hoon^{*1} (¹Department of physics and astronomy, Seoul National University, ²Materials Science and Technology Division, Oak Ridge National Laboratory, ³Department of physics, Hanyang University)

[A9-se] Focus: Recent Semiconductor Technologies and Devices in Industry

2024. 04. 24 Wednesday 12:00~13:36

Room: 201

좌장: **박연상** 충남대학교

Chair: PARK Yeonsang (Chungnam National University)

A9.01 [12:00 - 12:24]

Pixel Architecture for Scaling Down / CHO Minsu^{*1} (¹CIS 개발팀, SKhynix)

A9.02 [12:24 - 12:48]

Development of Wafer-Level Electrostatic Discharge Control under 5 Volt in Photolithography Process / LEE Taehoon¹, KONG Taekyung^{*1}, KIM Dongkyum^{*1}, PARK Sanghyun^{*1} (¹Photo Development Group, SEMES)

A9.03 [12:48 - 13:12]

Extremely low-pressure helicon plasma source and its applications to several plasma processes / SEO Sang-Hun^{*1}, SEO Seung-Hun², NA Sung-Min², KIM Hyun-Jun² (¹CEO, Wintelcorporation, ²Wintelcorporation)

A9.04 [13:12 - 13:36]

Material manufacturing trend change in display and semiconductor industry / PARK Kyung Ah^{*1} (¹Process Excellence, Merck Electronic Materials Ltd.)

[A10-se] Focus: Semiconductor Materials for Optical Devices

2024. 04. 24 Wednesday 12:00~13:36

Room: 202

좌장: **장재원** 동국대학교

Chair: JANG Jae-Won (Dongguk University)

A10.01 [12:00 - 12:24]

Nanophotonics using Organic-Based Hybrid structures based on Organic Semiconductors / KIM Jiyoun^{1,2}, PARK Dong Hyuk^{*1,2} (¹Department of Chemical Engineering, Inha University, ²Program in Biomedical Science & Engineering, Inha University)

A10.02 [12:24 - 12:48]

High-performance photodetectors based on metal-oxide semiconductors and nanomaterials /
KIM Jaehyun*¹ (¹Department of Semiconductor Science, Dongguk University)

A10.03 [12:48 - 13:12]

Rational design of light-emitting conjugated polymer to achieve various emission color of their nano-materials using a single type of polymer / KIM Jongho*¹ (¹Textile System Engineering, Kyungpook National University)

A10.04 [13:12 - 13:36]

Understanding and Controlling the Morphology of Organic Thin Films / KIM Jongchan*¹
(¹Dept. of Integrated Display Engineering, Yonsei University)

[A12-in] Institutional: Construction of 2nd HX beamline of PAL-XFEL and its science

2024. 04. 24 Wednesday 12:00~13:36

Room: 205

좌장: **구태영** 포항가속기연구소

Chair: KOO Tae-Yeong (Pohang Accelerator Laboratory)

A12.01 [12:00 - 12:24]

PAL-XFEL HX2 beamline construction plan / EOM Intae*¹ (¹XFEL Beamline division, Pohang Accelerator Laboratory)

A12.02 [12:24 - 12:48]

Results of lattice design and FEL simulation for HX2 / SHIM Chi Hyun*¹ (¹Accelerator Control Team, Pohang Accelerator Laboratory)

A12.03 [12:48 - 13:12]

Ultrafast dynamics in oxide heterostructures observed by PAL-XFEL / LEE Hyeon Jun*¹
(¹Department of Advanced Materials Engineering, Kwangwon National University)

A12.04 [13:12 - 13:36]

Time-resolved RIXS and quantum materials / CHANG Seo Hyung*¹ (¹Department of Physics, Chung-Ang University)

[A13-bp] Focus: Frontiers in Biophysics

2024. 04. 24 Wednesday 12:00~13:24

Room: 206

좌장: 김병철 인천대학교

Chair: KIM Byoung Choul (Incheon National University)

A13.01 [12:00 - 12:24]

Development of label-free vibrational microscopy to overcome limitations / LIM Jong Min^{*1}

(¹Department of Chemistry, Kyungpook National University)

A13.02 [12:24 - 12:48]

Colon cancer cells acquire immune regulatory molecules from tumor-infiltrating lymphocytes by trogocytosis / SHIN Jae Hun^{*1} (¹Integrated Science and Engineering, Yonsei University,

Underwood International College)

A13.03 [12:48 - 13:12]

Stochastic reaction networks for microscale liquid-liquid phase separation in 2D and 3D

spaces / KIM Jinsu^{*1}, KIM Jinyoung¹, LAWLEY Sean² (¹Department of Mathematics, POSTECH, ²The University of Utah, USA)

A13.04 [13:12 - 13:24]

Antibody-Conjugated Magnetic Nanoparticle Therapy for Inhibiting T-Cell Mediated

Inflammation / LEE Sang Suk^{*1}, HASAN Mahbub², CHOI Jong Gu¹ (¹Department of Digital

Healthcare Engineering, Sangji University, ²Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Science and Technology University)

[A14-op] Terahertz I

2024. 04. 24 Wednesday 12:00~13:48

Room: 209

좌장: 김튼튼 울산대학교

Chair: KIM Teun-Teun (University of Ulsan)

A14.01 [12:00 - 12:24]

Terahertz generation and control of charge-density-wave modes in (TaSe₄)₂I / KIM Soyeun^{*1}

(¹Department of Physics and Chemistry, DGIST)

A14.02 [12:24 - 12:48]

Spintronic THz emission in ferromagnetic and antiferromagnetic systems / LEE Kyusup^{*1}

(¹Department of Physics, Pukyong National University)

A14.03 [12:48 - 13:12]

Microscopic interactions and control using terahertz spectroscopy / KIM Heejae^{*1} (¹Department of Physics, Pohang University of Science and Technology)

A14.04 [13:12 - 13:36]

THz field-induced Stark spectroscopy of molecules in solution / KANG Bong Joo^{*1} (¹Division of Advanced Materials, Korea Research Institute of Chemical Technology (KRICT))

A14.05 [13:36 - 13:48]

테라헤르츠 주파수 대역에서 저차원 나노물질을 활용한 ENZ 물질의 개발 / JUN Seung Won¹, YIM Jong Hyuk¹, AHN Yeong Hwan^{*1} (¹Department of Physics and Department of Energy Systems Research, Ajou University)

[A15-qu] Pioneer: Coherent Quantum Control and Quantum Computing I

2024. 04. 24 Wednesday 12:00~13:48

Room: 301

좌장: **김도현** 서울대학교

Chair: KIM Dohun (Seoul National University)

A15.01 [12:00 - 12:36]

Benchmarking a racetrack trapped-ion quantum processor / MILLS Michael^{*1}, MOSES Steven¹, BALDWIN Charles¹, GAEBLER John¹, DREILING Joan¹, SIEGFRIED Peter¹, JOHANSEN Jacob¹, FOLTZ Cameron¹ (¹Quantinuum, USA)

A15.02 [12:36 - 13:12]

Measuring statistics-induced entanglement entropy with an electronic Hong-Ou-Mandel interferometer / HONG Changki^{*1}, ALKALAY Tomer¹, ZHANG Gu², UMANSKY Vladimir¹, HEIBLUM Moty¹, GORNYI Igor³, GEFEN Yuval¹ (¹Department of Condensed matter physics, Weizmann Institute of Science, ²Division of Quantum Computation, Beijing Academy of Quantum Information Sciences, ³Institute for Quantum Materials and Technologies, Karlsruhe Institute of Technology)

A15.03 [13:12 - 13:48]

Laser Cooled Molecules for Quantum Science and Fundamental Physics / ANDEREGG Loic^{*1} (¹Physics, Harvard University, USA)

Session B

[B1-pa] Accelerator II

2024. 04. 24 Wednesday 14:00~15:48

Room: 101

좌장: 유재혁 고려대학교

Chair: YOO Jae Hyeok (Korea University)

B1.01* [14:00 - 14:12]

Direct measurement of the CKM element $|V_{ts}|$ in dileptonic final state of top pair production at 13 TeV with the CMS detector / PARK Inkyu^{*1}, WATSON Ian James¹, JANG Woojin¹, LEE Jason Sang Hun¹, ROH Youn Jung¹ (¹University of Seoul)

B1.02* [14:12 - 14:24]

A study of V_{cb} measurement in semi-leptonic decay channel of top pair events at the LHC / YANG Un-ki^{*1}, CHOI Suyong², YOON Inseok¹, OH Byeong Hun¹, SHIN Jihoon¹, KIM Yeonjoon¹ (¹Department of physics and astronomy, Seoul National University, ²Department of Physics, Korea University)

B1.03 [14:24 - 14:36]

Development of the readout system for SUB-Millicharge ExperimentT (SUBMET) at J-PARC / YOO Jae Hyeok^{*1}, MOON Hyunki¹ (¹Physics, Korea University)

B1.04 [14:36 - 14:48]

Installation plan of SUB-Millicharge ExperimentT (SUBMET) at J-PARC / YOO Jae Hyeok^{*1}, HWANG Insung¹ (¹Physics, Korea University)

B1.05 [14:48 - 15:00]

Full System Test for the SUB-Millicharge ExperimentT (SUBMET) Detector at J-PARC / YOO Jae Hyeok^{*1}, JEONG Hoyong¹ (¹Physics, Korea University)

B1.06 [15:00 - 15:12]

Calibration of single photoelectron signals for SUBMET / YOO Jae Hyeok^{*1} (¹Physics, Korea University)

B1.07* [15:12 - 15:24]

Development and progress report on Analysis Description Language (ADL) for HEP analysis and its application / LEE Junghyun^{*1}, HUH Changgi¹, SEKMEN Sezen¹ (¹Department of physics, Kyungpook National University)

B1.08 [15:24 - 15:36]

Precise Measurement of the Weak Mixing Angle Through Forward-Backward Asymmetry in Drell-Yan Events at the CMS Experiment / YANG Un-ki¹, SEO Hyonsan¹, JUN Won¹

(¹Department of physics and astronomy, Seoul National University)

B1.09* [15:36 - 15:48]

Search for new physics in the hadronic Monotop in CMS experiment / MOON Chang-Seong^{*1}, HONG Jieun¹, DOGRA Sunil Manohar¹ (¹Department of Physics, Kyungpook National University)

[B2-pa] Non-accelerator II

2024. 04. 24 Wednesday 14:00~15:48

Room: 102

좌장: **김용함** 기초과학연구원

Chair: KIM Yong-Hamb (IBS)

B2.01 [14:00 - 14:12]

Status and prospects of CAPP-MAX / AHN Saebyeok^{*1} (¹Center for Axion and Precision Physics Research, IBS)

B2.02* [14:12 - 14:24]

Development of High-Temperature Superconducting Cavities for CAPP's Main Axion eXperiment (CAPP-MAX) / LEE Jiwon^{1,2}, AHN Danho², LEE Jooyoung^{1,2}, BYUN Heesu², KIM Jinsu², KWON Ohjoon^{*2}, PARK Seongtae², CHUNG Woohyun², YOUM Dojun², SEMERTZIDIS Yannis K.^{1,2} (¹Department of Physics, KAIST, ²Center for Axion and Precision Physics Research, Institute for Basic Science)

B2.03 [14:24 - 14:36]

High-Temperature Superconducting Cavity R&D for Axion Search at CAPP / AHN Danho¹, LEE Jiwon^{1,2}, LEE Jooyoung², BYUN Heesu¹, KIM Jinsu¹, KWON Ohjoon^{*1}, PARK Seongtae¹, CHUNG Woohyun¹, YOUM Dojun², SEMERTZIDIS Yannis Kyriakos^{1,2} (¹Center for Axion and Precision Physics Research, Institute for Basic Science, ²Department of Physics, KAIST)

B2.04 [14:36 - 14:48]

Experimental search of axion cosmology around 22 μeV with a multi-cell cavity and a Josephson parametric amplifier / KIM Younggeun¹, YOUN SungWoo^{*1}, JEONG Junu¹, BAE SungJae^{1,2}, SEMERTZIDIS Yannis Kyriakos^{1,2} (¹Center for Axion and Precision Physics Research, Institute for Basic Science, ²Department of Physics, KAIST)

B2.05* [14:48 - 15:00]

Characterization of Parallel-Connected Josephson Parametric Amplifiers for Axion Search Experiments / KO Minsu^{1,2}, UCHAIKIN Sergey V.*², KIM JinMyeong^{1,2}, IVANOV Boris I.², OH Seonjeong², SEMERTZIDIS Yannis K.^{1,2} (¹Department of Physics, KAIST, ²Center for Axion and Precision Physics Research (CAPP), Institute for Basic Science)

B2.06 [15:00 - 15:12]

Operational Experience of a Wideband Multi-JPA Amplifier at Test and Experimental Facilities / UCHAIKIN Sergey V.^{*1}, KIM Jinmyeong^{1,2}, IVANOV Boris¹, OH Seonjeong¹, SEMERTZIDIS Yannis K^{1,2} (¹Center for Axion and Precision Physics Research, IBS, ²Department of Physics, KAIST)

B2.07* [15:12 - 15:24]

Search for dark matter axion using a tunable TM020 mode / BAE SungJae^{1,2}, YOUN SungWoo^{*1}, JEONG Junu¹, KIM Younggeun¹ (¹Center for Axion and Precision Physics Research, Institute for Basic Science, ²Department of Physics, KAIST)

B2.08 [15:24 - 15:36]

The first dedicated axion quark nugget experiment using a haloscope / KIM Jinsu^{*1}, KWON Ohjoon¹, AHN Danho¹, SEMERTZIDIS Yannis Kyriakos¹, LEE Soohyung¹, CHUNG Woohyun¹, MATLASHOV Andrei¹, UCHAIKIN Sergey¹, VAN LOO Arjan Ferdinand^{2,3}, NAKAMURA Yasunobu^{2,3}, PARK Seongtae¹, BYUN HeeSu¹, OH Seonjeong¹ (¹Center for Axion and Precision Physics Research, IBS, ²Center for Quantum Computing, RIKEN, ³Department of Applied Physics, Graduate School of Engineering, The University of Tokyo)

B2.09 [15:36 - 15:48]

Towards new axion search readout based on variance method with zeptojoule bolometer / IVANOV Boris^{*1}, JEONG Junu¹, UCHAIKIN Sergey V.*¹, SEMERTZIDIS Yannis K.¹ (¹Center for Axion and Precision Physics Research, Institute for Basic Science)

[B3-nu] Nuclear Astrophysics, Relativistic Heavy Ion Collision

2024. 04. 24 Wednesday 14:00~15:36

Room: 103

좌장: 문동호 전남대학교

Chair: MOON Dong Ho (Chonnam National University)

B3.01* [14:00 - 14:12]

Plan for the direct measurement of the $^{34}\text{Ar}(\alpha, p)^{37}\text{K}$ reaction in Gamow window using ATOM-X at CRIB / KIM Aram^{*1}, DO Seungkyung¹, HONG Byungsik¹, HAHN Insik², MOON Chang-Bum², AHN Sunghoon(Tony)², KIM Dahee², CHA Soomi², PARK Chaeyeon², KIM Yongsun³ (¹Center for

Extreme Nuclear Matters, Korea University, ²CENS, IBS, ³Department of Physics and Astronomy, Sejong University)

B3.02 [14:12 - 14:24]

Measurement of the $^{27}\text{Al}(p, \gamma)^{28}\text{Si}$ Reaction near $E_p=2.05$ MeV / AHN Jung Keun^{*1}

(¹Department of Physics, Korea University)

B3.03 [14:24 - 14:36]

Extending upper limit of $^{12}\text{C}(p,p')^3\alpha$ cross section near Hoyle state using ATOM-X / LEE Jung Woo^{*1}, AHN Sunghoon(Tony)¹, CHA Soomi¹, BAE Sunghan¹, KIM Min Ju¹, PEREIRA-LOPEZ Xesus¹, PARK Chaeyeon^{1,2}, GU Gyoungmo^{1,3}, DO Seungkyung^{1,4} (¹Center for Exotic Study, IBS, ²Physics, Ewha Womans University, ³Physics, Sungkyunkwan University, ⁴Physics, Korea University)

B3.04* [14:36 - 14:48]

Heavy flavor charged-particle jet tagging in pp collisions in ALICE Run3 / LEE Hyungjun¹, KIM Beom Kyu^{*1} (¹department of physics, Sungkyunkwan University)

B3.05 [14:48 - 15:00]

Measurement of femtoscopic correlations at the CMS experiment / DOGRA Sunil Manohar^{*1}, MOON Chang-Seong^{*1} (¹Department of physics, Kyungpook National University)

B3.06* [15:00 - 15:12]

b-jet tagging in pp collisions using graph neural network for the ALICE experiment / LIM SangHoon^{*1}, CHOI Changhwan¹ (¹Physics Department, Pusan National University)

B3.07* [15:12 - 15:24]

Luminosity measurement in ALICE for the LHC Run 3 / LIM SangHoon^{*1}, KIM Minjae¹ (¹Physics Department, Pusan National University)

B3.08* [15:24 - 15:36]

Study of multiplicity-dependent resonance productions in pp collisions in the EPOS4 / LIM SangHoon^{*1}, LIM Hyunji¹ (¹Physics Department, Pusan National University)

[B4-ap] Bilateral: The 8th Korea-Japan Joint Symposium on Organic Electronics: Recent Advances on Organic Semiconductor Materials and Devices I

2024. 04. 24 Wednesday 14:00~15:36

Room: 104

좌장: **이택희** 서울대학교

Chair: LEE Takhee (Seoul National University)

B4.01 [14:00 - 14:24]

Optical operand measurements for studying the organic semiconductor devices / MANAKA Takaaki*¹ (¹Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan)

B4.02 [14:24 - 14:48]

Controlling the electronic structure of Quasi-two-dimensional halide perovskite / PARK Soohyung*¹ (¹Advanced Analysis Center, Korea Institute of Science and Technology (KIST))

B4.03 [14:48 - 15:12]

Metal-Free Complementary Circuits Composed of Carbon-Based Transistors / WATANABE Kazuyoshi*¹ (¹Graduate School of Frontier Sciences, The University of Tokyo, Japan)

B4.04 [15:12 - 15:36]

Selective doping strategies through inkjet printing in large-area monolayer MoS₂ / CHO Kyungjune², CHUNG Seungjun*¹ (¹School of Electrical Engineering, Korea University, ²Soft Hybrid Materials Research Center, KIST)

[B5-ap] Focus: Quantum Nanodevices and Quantum Applied Technologies I

2024. 04. 24 Wednesday 14:00~15:48

Room: 105

좌장: 정민경 대구경북과학기술원

Chair: JUNG Minkyung (DGIST)

B5.01 [14:00 - 14:36]

Charge-transfer polaritons in van der Waals heterostructures / KIM Brian Sae Yoon*¹ (¹Materials Science and Engineering, University of Arizona, U.S.A.)

B5.02 [14:36 - 15:12]

Quantum Key Distribution with Quantum emitters in Hexagonal Boron Nitride / NGUYEN Minh Anh Phan¹, ZENG Helen Zie Jie*¹, AL-JUBOORI Ali*¹ (¹University of Technology Sydney, Australia)

B5.03 [15:12 - 15:48]

Open Cavity Resonator for 2D Electron Waves / PARK Dongsung T.¹, JUNG Hwanchul², LEE Seokyeong¹, KIM Uhjin³, YANG Chanuk³, KIM Jehyun⁴, UMANSKY V.⁵, KIM Dohun⁴, SIM H.-S.¹, CHUNG Yunchul², CHOI Hyoungsoon*¹, CHOI Hyungkook³ (¹Department of Physics, KAIST, ²Department of Physics, Pusan National University, ³Department of Physics, Jeonbuk National

University, ⁴Department of Physics, Seoul National University, ⁵Department of Condensed Matter Physics, Weizmann Institute of Science)

[B6-co] Focus: Exploring Exotic Phases of Quantum Materials

2024. 04. 24 Wednesday 14:00~15:36

Room: 106

좌장: 송창용 포항공과대학교

Chair: SONG Changyong (POSTECH)

B6.01 [14:00 - 14:24]

Thermal Decoupling: Solver of Mysteries in Unconventional High- T_c Layered Superconductors
/ LEE Gun-Do^{*1} (¹Department of Materials Science and Engineering, Seoul National University)

B6.02 [14:24 - 14:48]

Quantum spin nematic phase in a square lattice iridate / KIM Hoon^{1,2,3}, KIM Jinkwang^{1,2}, KWON Junyoung¹, KIM Jimin^{1,2}, KIM Hyun-Woo J.^{1,2}, HA Seunghyeok^{1,2}, KIM Kwangrae^{1,2}, LEE Wonjun^{1,2}, KIM Jonghwan^{4,5}, CHO Gil Young^{1,2}, HEO Hyeokjun⁶, JANG Joonho⁶, SAHLE C. J.⁷, LONGO A.^{7,8}, STREMPFER J.⁹, FABBRI G.⁹, CHOI Y.⁹, HASKEL D.⁹, KIM Jungho⁹, KIM J.-W.⁹, KIM Bumjoon^{*1,2}
(¹Department of Physics, POSTECH, ²Center for Artificial Low Dimensional Electronic Systems, IBS, ³Department of Physics, California Institute of Technology, ⁴Center for Van der Waals Quantum Solids, IBS, ⁵Department of Materials Science and Engineering, POSTECH, ⁶Department of Physics and Astronomy, Seoul National University, ⁷The European Synchrotron, ESRF, ⁸Istituto per lo Studio dei Materiali Nanostrutturati (ISMN)-CNR, UOS Palermo, ⁹Advanced Photon Source, Argonne National Laboratory)

B6.03 [14:48 - 15:12]

Controlling strong-field optical response of massless Dirac fermions in graphene / KIM Jonghwan^{*1} (¹Department of Materials Science and Engineering, POSTECH)

B6.04 [15:12 - 15:36]

Capturing ultrafast phase-transition in metallic glass nanoparticle through time-resolved single-shot imaging / PARK Eunyoung¹, KIM Sinwoo¹, HWANG Junha¹, LEE Sung Yun¹, LEE Heemin¹, HEO Seung-Phil¹, NAM Daewoong², KIM Sangsoo², JANG Dogeun², KIM Min Seok², EOM In Tae², NOH Do Young³, SONG Changyong^{*1} (¹Department of Physics, POSTECH, ²Pohang Accelerator Laboratory, ³Department of Physics and Photon Science, GIST)

[B7-co] Focus: 2D Systems: Insights from Theory and Computation

2024. 04. 24 Wednesday 14:00~15:36

Room: 107

좌장: 정재일 서울시립대학교

Chair: JUNG Jeil (University of Seoul)

B7.01 [14:00 - 14:24]

Electronic structure and correlation effects in twisted and stacked multilayer graphene with an applied bias / MIN Hongki^{*1} (1Department of Physics and Astronomy, Seoul National University)

B7.02 [14:24 - 14:48]

Open-orbit induced low field extremely large magnetoresistance in graphene/h-BN superlattices / LECONTE Nicolas^{*1}, WANG Zihao², PEREZ-PISKUNOW Pablo³, ROCHE Stephan³, JUNG Jeil^{*1}, NOVOSELOV Konstantin^{*2} (1Department of Physics, University of Seoul, 2Department of Materials Science and Engineering, National University of Singapore, Singapore, 3Catalan Institute of Nanoscience and Nanotechnology, Spain)

B7.03 [14:48 - 15:12]

Magnetotransport calculation of two-dimensional materials / SHIM Ji Hoon^{*1}, LEE Inho¹ (1Department of Chemistry, POSTECH)

B7.04 [15:12 - 15:36]

Strain-induced graphene quantum dots for tunable qubits / MYOUNG Nojoon^{*1} (1Department of Physics Education, Chosun University)

[B8-co] Nano and Mesoscopic Physics

2024. 04. 24 Wednesday 14:00~15:12

Room: 108

좌장: 최형국 전북대학교

Chair: Choi Hyungkook (Jeonbuk National University)

B8.01* [14:00 - 14:12]

Kondo screening in a box / KIM Minsoo^{*1}, KIM Donghoon¹, SIM Heungsun¹ (1Department of Physics, KAIST)

B8.02* [14:12 - 14:24]

Itinerant orbital angular momentum of electrons: from the orbital Edelstein effect to the higher-order topology / PARK Min Ju¹, LEE Jongjun M.¹, LEE Hyun-Woo^{*1} (1Department of Physics, POSTECH)

B8.03 [14:24 - 14:36]

Effect of trivial bands on chiral anomaly-induced longitudinal magnetoconductivity in Weyl semimetals / SUH Jeonghyeon¹, MIN Hongki^{*1,2} (¹Department of Physics and Astronomy, Seoul National University, ²Center for Theoretical Physics, Seoul National University)

B8.04* [14:36 - 14:48]

Localization of Berry curvature in tight binding models / KIM Hanbyul¹, SIN Sang Jin^{*1} (¹physics department, Hanyang University)

B8.05 [14:48 - 15:00]

Pseudospins revealed through the giant dynamical Franz-Keldysh effect in massless Dirac materials / KIM Youngjae^{*1} (¹School of Physics, KIAS)

B8.06 [15:00 - 15:12]

Majorana coupling by the boundary of a planar topological Josephson junction / KIM Hyeongseop^{*1}, SIM Heung-Sun¹, PARK Sunghun² (¹Department of Physics, KAIST, ²Center for Theoretical Physics of Complex Systems, IBS)

[B9-se] Focus: Functionalization of 2D Nanomaterials and Their Sensor Device Application

2024. 04. 24 Wednesday 14:00~15:36

Room: 201

좌장: 김태욱 전북대학교

Chair: KIM Tae-Wook (Jeonbuk National University)

B9.01 [14:00 - 14:24]

Quantum Acoustics: conversion of single electrons to single photons / SON Seok-Kyun^{*1,2} (¹Department of Physics, Kyung Hee University, ²Department of Information Display, Kyung Hee University)

B9.02 [14:24 - 14:48]

Chemical modulation of graphitic nanostructures for their light-responsive applications / IM Min Ji^{1,2}, BAE Sukang^{*1,2}, MOON Byung Joon^{*1,2} (¹Functional Composite Materials Research Center, Korea Institute of Science and Technology, ²School of Materials Science and Engineering, Gwangju Institute of Science and Technology)

B9.03 [14:48 - 15:12]

MOCVD of 3D hierarchical MoS₂ and its gas sensing application / SONG Jeongin^{1,2}, CHO Jinill², KIM Taesung², KIM Muyoung³, KIM Ha Sul⁴, KANG Sang-Woo^{1,5}, MUN Jihun^{*1} (¹Strategic Technology Research Institute, Korea Research Institute of Standards and Science, ²School of

Mechanical Engineering, Sungkyunkwan University, ³Department of Plasma Engineering, Korea Institute of Machinery and Materials, ⁴Department of Physics, Chonnam National University, ⁵Precision Measurement, University of Science and Technology)

B9.04 [15:12 - 15:36]

High stable and conductive graphene films on flexible substrates / BAE Sukang^{*1,2} (¹Functional Composite Materials Research Center, Korea Institute of Science and Technology, ²Department of JBNU-KIST Industry-Academia Convergence Research, Jeonbuk National University)

[B10-se] Focus: MOCVD-based 2D Material Synthesis and Application

2024. 04. 24 Wednesday 14:00~15:36

Room: 202

좌장: 김수민 숙명여자대학교

Chair: KIM Soo Min (Sookmyung Women's University)

B10.01 [14:00 - 14:24]

Bridging 2D and 3D Material Growth through the van der Waals Interface / KANG Kibum^{*1}
(¹Materials Science and Engineering, KAIST)

B10.02 [14:24 - 14:48]

Innovative Strategies for the Synthesis and Application of Two-Dimensional Materials in Electronics / SONG Intek^{*1} (¹Department of Chemical and Biological Engineering, Andong National University)

B10.03 [14:48 - 15:12]

Epitaxial Growth of 2D MoS₂ and WS₂ using Inorganic Molecular Precursors / LIM Hyunseob^{*1}
(¹Department of Chemistry, GIST)

B10.04 [15:12 - 15:36]

Homo- and hetero-epitaxial growth of van der Waals layered materials / KIM Ki Kang^{*1}
(¹Department of Energy Science, Sungkyunkwan University)

[B12-or] Operating Status and Future Upgrades of Major Accelerator Facilities

2024. 04. 24 Wednesday 14:00~15:36

Room: 205

좌장: 남인혁 포항가속기연구소

Chair: NAM Inhyuk (Pohang Accelerator Laboratory)

B12.01 [14:00 - 14:24]

Status and Future Plans of RAON / CHUNG Yeonseⁱ*1 (¹IRIS, IBS)

B12.02 [14:24 - 14:48]

10-year Operation Results and Future Plan of Proton Accelerator for KOMAC / KIM Han Sung^{*}*1 (¹KOMAC, KAERI)

B12.03 [14:48 - 15:12]

Status and operation of PAL-XFEL and future plan with a second HX beamline / NAM Inhyuk^{*}*1 (¹PAL-XFEL, Pohang Accelerator Laboratory)

B12.04 [15:12 - 15:36]

Status and operational plan of Korea-4GSR / KIM Jaehyun^{*}*1 (¹Beam Operation Team, Pohang Accelerator Laboratory)

[B13-bp] Focus: Physics of Brain Structure and Function

2024. 04. 24 Wednesday 14:00~15:24

Room: 206

좌장: **최지현** 한국과학기술연구원

Chair: **CHOI Jee Hyun** (KIST)

B13.01 [14:00 - 14:24]

Memory Retrieval Processes in the Human Brain / LEE Sue-Hyun^{*}*1 (¹Department of Psychology, Seoul National University)

B13.02 [14:24 - 14:48]

Spiking neural network simulation of the fruit fly whole brain / KIM Jinseop S^{*}*1 (¹Department of Biological Sciences, Sungkyunkwan University)

B13.03 [14:48 - 15:00]

Inter-regional delays fluctuate in the human cerebral cortex / MOON Joon-Young^{*}*1, MüSCH Kathrin², SCHROEDER Charles E³, HONEY Christopher J² (¹Center for Neuroscience Imaging Research, Institute for Basic Science, ²Department of Psychological and Brain Sciences, Johns Hopkins University, ³Center for Biomedical Imaging and Neuromodulation, The Nathan S. Kline Institute for Psychiatric Research)

B13.04 [15:00 - 15:24]

Function follows dynamics: from patterns of brain collective behavior to patterns of information processing / BATTAGLIA Demian^{*}*1,2 (¹Theoretical Neuroscience Group in Institute for

Systems Neuroscience (INS), Aix-Marseille Université, France , ²Institute for Advanced Studies (USIAS), University of Strasbourg, France)

[B14-op] Nanophotonics

2024. 04. 24 Wednesday 14:00~15:48

Room: 209

좌장: 김명기 고려대학교

Chair: KIM Myung Ki (Korea University)

B14.01 [14:00 - 14:24]

Tailoring Light-Matter Interactions with Colloidal Nanostructures / HUH Ji-Hyeok^{*1,2}

(¹Department of Applied Physics, Hanyang University ERICA, ²Department of Photonics and Nanoelectronics, Hanyang University ERICA)

B14.02 [14:24 - 14:48]

Tunable Circular Photogalvanic Effect and Current-Induced Magnetic Moment Probed by Light in Chiral Te Nanowires / NAMGUNG Seon^{*1} (¹Physics, UNIST)

B14.03 [14:48 - 15:12]

Vortex Lasing Modes from Photonic Disclination Cavity / HWANG Minsoo^{*1}, KIVSHAR Yuri², PARK Hong-Gyu³ (¹Department of Physics, Hanyang University, ²Nonlinear Physics Center, Research School of Physics, AUSTRALIAN NATIONAL UNIVERSITY, ³Department of Physics and Astronomy, Seoul National University)

B14.04 [15:12 - 15:24]

Low-threshold colloidal-quantum-dot photonic crystal laser using a bound state in the continuum / LEE Hansol¹, LEE Tae-Yun¹, JEON Heonsu^{*1} (¹Department of Physics and Astronomy, Seoul National University)

B14.05* [15:24 - 15:36]

Super-resolution fluorescence microscopy using epsilon-near-zero organic films / PARK Dong Hee¹, CHOI Kyu Ri¹, JOO Bin Chan¹, LEE Yeon Ui^{*1} (¹Department of Physics, Chungbuk National University)

B14.06* [15:36 - 15:48]

Electrically tunable single polaritonic quantum dot at room temperature / LEE Hyeongwoo¹, WHETTEN Benjamin G.², KIM Byong Jae³, WOO Ju Young⁴, KOO Yeonjeong¹, BAE Jinhyuk¹, KANG Mingu¹, MOON Taeyoung¹, JOO Huitae¹, JEONG Sohee³, LIM Jaehoon³, EFROS Alexander L.⁵, RASCHKE Markus B.², PELTON Matthew⁶, PARK Kyoung-Duck^{*1} (¹Physics, POSTECH, ²Department

of Physics, University of Colorado at Boulder, ³Department of Energy Science, Sungkyunkwan University, ⁴Digital Transformation R&D Department, KITECH, ⁵Naval Research Laboratory, Naval Research Laboratory, ⁶Department of Physics, University of Maryland)

[B15-qu] Focus: Innovating Quantum Communications I

2024. 04. 24 Wednesday 14:00~15:36

Room: 301

좌장: 최창순 한국과학기술연구원

Chair: CHOI Changsoon (KIST)

B15.01 [14:00 - 14:36]

Photonic Integrated Chips and Module Technology in Quantum Key Distribution / YOUN

Chun Ju^{*1} (¹Quantum Communication, ETRI)

B15.02 [14:36 - 15:00]

Quantum Key Distribution with ultra-fast and photon number resolving SNSPD / YUM

Dahyun^{*1} (¹R&T, ID Quantique)

B15.03 [15:00 - 15:36]

Multiple parameter estimation and its application to distributed quantum sensing / LIM

Hyang-Tag^{*1,2} (¹Center for Quantum Information, KIST, ²Division of Nanoscience and Technology, UST)

Session C

[C1-pa] Accelerator III

2024. 04. 24 Wednesday 16:00~16:48

Room: 101

좌장: 유휘동 연세대학교

Chair: YOO Hwidong (Yonsei University)

C1.01* [16:00 - 16:12]

Search for a heavy resonance decaying into four-lepton final states for boosted and resolved regimes in proton-proton collisions at 13 TeV / KO Sanghyun¹, YANG Un-ki^{*1}, YOO Hwidong²

(¹Department of physics and astronomy, Seoul National University, ²Department of physics, Yonsei University)

C1.02* [16:12 - 16:24]

Search for new physics in dilepton events using asymmetry / YANG Un-ki^{*1}, SEO HyonSan¹, JUN Won¹, CHOI Junho¹ (¹Department of physics and astronomy, Seoul National University)

C1.03* [16:24 - 16:36]

Measurement of the charge asymmetry in top pair production using lepton+jets final state in CMS 13 TeV dataset / PARK Inkyu^{*1}, KANG Yechan¹, LEE Jason Sang Hun¹, WATSON Ian James¹, ROH Youn Jung¹, KIM HyunSoo² (¹University of Seoul, ²Department of Physics and Astronomy, Sejong University)

C1.04* [16:36 - 16:48]

Updates heavy Majorana neutrino search in dilepton + jets final states with CMS Run II data / YANG Un-ki^{*1}, KIM Jihun¹, ALMOND John¹, LEE Haneol¹, KIM Youngwan¹ (¹Department of physics and astronomy, Seoul National University)

[C2-pa] Focus: New Aspects of Symmetry

2024. 04. 24 Wednesday 16:00~17:36

Room: 102

좌장: **송재원** 한국과학기술원

Chair: SONG Jaewon (KAIST)

C2.01 [16:00 - 16:24]

Generalized Symmetry and Particle Physics / HONG Sungwoo^{*1}, BRENNAN T. Daniel^{*3}, CORDOVA Clay², KOREN Seth⁵, OHMORI Kantaro⁴, WANG Liantao² (¹Physics, KAIST, ²Physics, University of Chicago, Unites States, ³Physics, University of California San Diego , Unites States, ⁴Physics, University of Tokyo, Japan, ⁵Physics, University of Notre Dame, Unites States)

C2.02 [16:24 - 16:48]

3d TQFTs and Non-unitary Minimal Models / GANG Dongmin¹, KIM Heeyeon^{*2}, STUBBS Spencer³ (¹Physics and Astronomy, Seoul National University, ²Physics, Korea Advanced Institute of Science and Technology, ³Physics and Astronomy, Rutgers University, USA)

C2.03 [16:48 - 17:12]

Generalized Symmetry Constraints on 4d N=1 SCFTs / LEE Ki-Hong¹, LAWRIE Craig², KANG Monica Jinwoo³, SONG Jaewon¹ (¹Physics, Korea Advanced Institute of Science and Technology, ²Deutsches Elektronen-Synchrotron (DESY), Germany, ³Physics, University of Pennsylvania, USA)

C2.04 [17:12 - 17:36]

Symmetry Topological field theory for Subsystem symmetry / JIA Qiang^{*1}, CAO Weiguang^{*2}

(¹Physics, Korea Institute for Advanced Study, ²Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo, Japan)

[C3-nu] Nuclear Experimental Method and Instrumentation

2024. 04. 24 Wednesday 16:00~17:48

Room: 103

좌장: 김범규 성균관대학교

Chair: KIM Beom Kyu (Sungkyunkwan University)

C3.01 [16:00 - 16:12]

Construction of a chip test box (Korean ALICE TeleScope, KATS) with measuring particle trajectories and its operation test using PF-AR beam in KEK, Japan / CHOI Sungwoon¹, YOO In-Kwon^{*2} (¹Department of Physics, Inha University, ²Department of Physics, Pusan National University)

C3.02* [16:12 - 16:24]

Performance test of three-dimensional sampling electromagnetic calorimeter for the KOTO2 experiment / KIM YoungJun¹, LIM Geiyoub², YANG Seongbae¹, JI SuJeong³, KIM Yongjun³, KIM Chong³, LIM SangHoon³, PARK JeongWoo⁴, KIM Eun-Joo⁴, AHN Jung Keun^{*1} (¹Department of Physics, Korea University, ²IPNS, High Energy Accelerator Research Organization, KEK, ³Department of Physics, Pusan National University, ⁴Division of Science Education, Jeonbuk National University)

C3.03 [16:24 - 16:36]

Test of the prototype preshower for the KOTO II by using positron beam at ELPH / KIM Chong^{*1,2}, LIM Geiyoub³, LIM SangHoon², JI SuJeong², KIM Yongjun², KIM Eun Joo⁴, PARK Jeongwoo⁴, AHN Jung Keun⁵, YANG Seongbae⁵, KIM Young Jun⁵ (¹Inha University, ²Department of Physics, Pusan National University, ³IPNS, KEK, ⁴Division of Science Education, Jeonbuk National University, ⁵Department of Physics, Korea University)

C3.04* [16:36 - 16:48]

Measurement of the Alpha Cluster States using an Active Target Time Projection Chamber and the Ne-20 beam at RAON / KIM Yongsun^{*1}, CHEON Yechan¹, LEE Seunghwan¹, HWANG Seonggeun¹ (¹Sejong University)

C3.05* [16:48 - 17:00]

Study on the performance of the scintillator trigger modules for the KATS / LIM SangHoon^{*1}, HONG Yoonha¹ (¹Physics Department, Pusan National University)

C3.06* [17:00 - 17:12]

Development of Active-target TPC for the COREA Experiment / LEE Haein¹, AHN Jung Keun^{*1}
(¹Department of Physics, Korea University)

C3.07* [17:12 - 17:24]

Beam test for prototype AT-TPCs of low energy LAMPS experiment / KIM Yongsun^{*1}, LEE Seunghwan¹, CHEON Yechan¹, HWANG Seonggeun¹ (¹Sejong University)

C3.08* [17:24 - 17:36]

Setup and alignment of the silicon pixel layers with tiny test sensors in a chip test box(Korean ALICE Telescope, KATS) / WOO Kyungrim¹, YOO In-Kwon^{*1} (¹Dep. of Physics, Pusan National University)

C3.09* [17:36 - 17:48]

Online and offline data analysis of the test beam of the ALPIDE telescope at KEK / LIM SangHoon^{*1}, JANG Hangil¹ (¹Physics Department, Pusan National University)

[C4-ap] Bilateral: The 8th Korea-Japan Joint Symposium on Organic Electronics: Recent Advances on Organic Semiconductor Materials and Devices II

2024. 04. 24 Wednesday 16:00~17:36

Room: 104

좌장: **임은주** 단국대학교

Chair: LIM EunJu (Dankook University)

C4.01 [16:00 - 16:24]

Development of Beam Deflector using Liquid Crystals for Active Optical Systems / WON Kanghee^{*1} (¹Department of Information Display, Kyung Hee University)

C4.02 [16:24 - 16:48]

Fabrication of polycrystalline thin films with liquid crystalline organic semiconductor and their electronic devices / IINO Hiroaki^{*1} (¹Imaging Science and Engineering Research Center, Tokyo Institute of Technology, Japan)

C4.03 [16:48 - 17:12]

Empowering the efficiency of Top-Emission Organic Light-Emitting Devices using Ampicillin Microstructures / RYU Seung Yoon^{*1}, LEE Chang Min², P. JUSTIN JESURAJ P. Justin Jesuraj¹, KIM Yeong Beom², HA Insung¹ (¹Division of Physics and Semiconductor Science, Dongguk University, ²Department of Applied Physics, Korea University Sejong Campus)

C4.04 [17:12 - 17:36]

Tuning the energy levels at the interfaces for low-voltage operation of organic light-emitting diodes / FUKAGAWA Hirohiko*¹ (¹Center for Frontier Science, Chiba University, Japan)

[C5-ap] Focus: Quantum Nanodevices and Quantum Applied Technologies II

2024. 04. 24 Wednesday 16:00~17:48

Room: 105

좌장: **조명래** 경북대학교

Chair: JO Myunglae (Kyungpook National University)

C5.01 [16:00 - 16:36]

Energy Gap of the Even-Denominator Fractional Quantum Hall State in Bilayer Graphene / ASSOULINE Alexandre^{1,2}, WANG Taige³, ZHOU Haoxin², COHEN Liam², YANG Fangyuan², ZHANG Ruining², TANIGUCHI Takashi⁴, WATANABE Kenji⁴, MONG Roger⁵, ZALETEL Michael³, YOUNG Andrea^{*2} (¹QUEST, Néel Institute. France, ²Physics, University of California Santa Barbara, USA, ³Physics, University of California Berkeley, USA, ⁴Materials, National Institute for Materials Science, Japan, ⁵Physics and Astronomy, University of Pittsburgh, USA)

C5.02 [16:36 - 17:12]

Demonstration of quantized current steps due to the a.c. coherent quantum phase slip effect / KIM Kyung Ho*¹ (¹Department of Physics, Royal Holloway University of London, UK (current address: Atlantic Quantum, Sweden))

C5.03 [17:12 - 17:48]

Cryogenic Microwave Measurement for Quantum Computing applications / SHIN Sang-hee*¹ (¹Electromagnetic & Electrochemical Technologies, National Physical Laboratory, UK)

[C6-co] Focus: Exploring Exotic Phases of Quantum Materials

2024. 04. 24 Wednesday 16:00~17:12

Room: 106

좌장: **박재훈** 포항공과대학교

Chair: PARK Jae-Hoon (POSTECH)

C6.01 [16:00 - 16:24]

Study on Quantum Devices Based on Low-dimensional Materials / SONG Jong Hyun*¹, KWON Duhyuk¹, KWAK Yong su¹, DOH Yong-Joo³, BAE Myung-Ho², KIM Jinhee² (¹Chungnam National University, ²Standard Sciences, Korea Research Institute of Standards and Science, ³Department of Physics and Photon Science, Gwangju Institute of Science and Technology)

C6.02 [16:24 - 16:48]

Strain dynamic of polar vortices studied by x-ray free electron laser / KIM Kooktae^{*1}

(¹Department of physics, Pohang University of Science and Technology (POSTECH))

C6.03 [16:48 - 17:12]

Quantum materials research opportunities at the RSXS Endstaion of the PAL-XFEL / JANG

Hoyoung^{*1} (¹PAL-XFEL, Pohang Accelerator Laboratory)

[C7-co] Focus: 2D Systems: Insights from Theory and Computation

2024. 04. 24 Wednesday 16:00~17:36

Room: 107

좌장: **김봉재** 경북대학교

Chair: KIM Bongjae (Kyungpook National University)

C7.01 [16:00 - 16:24]

Interplay between stacking orders, interlayer interactions and nonlocal Coulomb interaction in twisted layered systems / SON Young-Woo^{*1} (¹KIAS)

C7.02 [16:24 - 16:48]

1T-TaS₂: Mott Insulator or Band Insulator? / LEE Sung-Hoon^{*1} (¹Department of Applied Physics, Kyung Hee University)

C7.03 [16:48 - 17:12]

Magic angle of moire magnetic materials / PARK Moon Jip^{*1}, BARK Chan Bin¹ (¹Department of Physics, Hanyang University)

C7.04 [17:12 - 17:36]

Multi-orbital character of kagome d orbital system / HAN Jae Ho^{*1}, KIM Kyoo² (¹Dept. of Physics, KAIST, ²Advanced Quantum Materials Lab, KAERI)

[C8-co] Nano and Mesoscopic Physics/Surface/Interface/Nanomaterials

2024. 04. 24 Wednesday 16:00~17:48

Room: 108

좌장: **양용수** 한국과학기술원

Chair: YANG Yongsoo (KAIST)

C8.01* [16:00 - 16:12]

Thermopower detection of the antibonding nodal lines at the surface

/ BAEK Seungil¹, SHIN Eui-cheol¹, KIM Yong-Hyun^{*1} (¹Department of Physics, KAIST)

C8.02* [16:12 - 16:24]

Exploring a Copper Nitride Structure Induced by Nitrogen Atom Implantation / CHA Yongtae¹, PARK Jiwon^{2,3}, KANG Hyunmin¹, YOON Taegeun¹, JIN Jeong Won⁴, SHIN Bong Gyu^{1,5}, SONG Young Jae^{1,3,5} (¹SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU), ²Department of Chemistry, Sungkyunkwan University (SKKU), ³Department of Nano Engineering, Sungkyunkwan University (SKKU), ⁴IBS Center for Integrated Nanostructure Physics (CINAP), Sungkyunkwan University, ⁵Department of Nano Science and Technology, Sungkyunkwan University (SKKU))

C8.03 [16:24 - 16:36]

Atomistic potential energies for phononic properties of two-dimensional transition-metal dichalcogenides / JEONG Huiseok¹, CHOI Hyoung Joon^{*1} (¹Department of Physics, Yonsei University)

C8.04 [16:36 - 16:48]

Layer-encoded frequency-domain photoemission experiment using time-resolved ARPES / LEE Woojoo^{*1} (¹KRISS)

C8.05* [16:48 - 17:00]

Stable nanoliter liquid bridges / WEON Byung Mook^{*1}, OH Gun¹, KANG Sung Hoon² (¹School of Advanced Materials Science and Engineering SKKU Advanced Institute of Nanotechnology (SAINT, Sungkyunkwan University, ²Department of Mechanical Engineering, Johns Hopkins University)

C8.06* [17:00 - 17:12]

3D structural determination of core-shell nanoparticles / JO Hyesung¹, WI Dae Han², LEE Taegu³, KWON Yongmin², JEONG Chaehwa¹, LEE Juhyeok¹, BAIK Hionsuck⁴, PATTISON Alexander⁶, THEIS Wolfgang⁵, OPHUS Colin⁶, ERCIUS Peter⁶, LEE Yea-Lee⁷, RYU Seunghwa³, HAN Sang Woo², YANG Yongsoo^{*1} (¹Department of Physics, KAIST, ²Department of Chemistry, KAIST, ³Department of Mechanical Engineering, KAIST, ⁴Seoul center, KBSI, ⁵School of Physics and Astronomy, University of Birmingham, ⁶Molecular Foundry, Lawrence Berkeley National Laboratory, ⁷Chemical Data-Driven Research Center, KRICT)

C8.07* [17:12 - 17:24]

Electronic properties of YPc2 qubit candidate interfaced with Cu(111) / DONATI Fabio^{*1,2}, OH Soyong^{1,2}, CHO Franklin H^{2,3}, SOE We-hyo^{2,3}, YU Jisoo^{1,2}, BUI Hong^{1,2}, SPREE Lukas^{2,3}, HOMMEL Caroline^{2,3}, PHARK Soo-hyon^{2,3}, COLAZZO Luciano^{2,3}, JANG Wonjun^{2,3} (¹Department of Physics, Ewha Womans University, ²Center for Quantum Nanoscience, Institute of Basic Science (IBS), ³-, Ewha Womans University)

C8.08* [17:24 - 17:36]

Comprehensive Optical Study of 1 μm and 4 μm Ti3C2 MXene Thin Films / HWANG

Jungseok^{*1}, PANDA Chandan Kumar¹ (¹Department of Physics, Sungkyunkwan University)

C8.09* [17:36 - 17:48]

Electronic dark states of PdSe₂ with two pairs of sublattices / KIM Keun Su^{*1}, KIM MINSU¹,

CHUNG Yoonah¹, KIM YERYN¹ (¹Department of Physics, Yonsei University)

[C9-se] Focus: Advanced Sensors: From Wearables to Robotics I

2024. 04. 24 Wednesday 16:00~18:00

Room: 201

좌장: **오홍석** 송실대학교

Chair: OH Hongseok (Soongsil University)

C9.01 [16:00 - 16:24]

Skin-compatible organic optoelectronic devices for wearable applications / PARK Sungjun^{*}

(¹Department of Intelligence Semiconductor Engineering, Ajou University, ²Department of Electrical and Computer Engineering, Ajou University)

C9.02 [16:24 - 16:48]

1D Bioelectronic Sensing Sutures for Personalized Treatment and Rehabilitation / LEE

Jaehong^{*1} (¹Department of Robotics and Mechatronics Engineering, DGIST)

C9.03 [16:48 - 17:12]

AI-Based Wearable Sensor Technology and Robotics Applications / KIM Min-gu^{*1} (¹Department of Medical Engineering, Yonsei University)

C9.04 [17:12 - 17:36]

Efficient doping strategies in metal-halide perovskites / KANG Keehoon^{*1} (¹Materials Science and Engineering, Seoul National University)

C9.05 [17:36 - 18:00]

Introducing quantum electrochemistry for ultrasensitive in-situ detection of small molecules to overcome existing limitations / KIM Jayoung^{*1} (¹Medical Engineering Department, Yonsei University)

[C10-se] Focus: AI Semiconductor Materials and Devices

2024. 04. 24 Wednesday 16:00~18:00

Room: 202

좌장: 박경덕 포항공과대학교

Chair: PARK Kyoung-Duck (POSTECH)

C10.01 [16:00 - 16:24]

Neuromorphic Electronic Devices using 2D materials / KWAK Joon Young^{*1} (¹Department of Convergence Electronic and Semiconductor Engineering, Ewha Womans University)

C10.02 [16:24 - 16:48]

Self-Rectifying Alkali Ion Memristor through Bottom Electrode Design / LEE Hong-Sub^{*1} (¹Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University)

C10.03 [16:48 - 17:12]

Heterosynaptic artificial synapses emulated by gate-tunable 2D memristors for energy-efficient neuromorphic electronics / LEE Chul-Ho^{*1} (¹Department of Electrical and Computer Engineering, Seoul National University)

C10.04 [17:12 - 17:36]

Electronic Devices and Array for Low-power Artificial Intelligence / WANG Gunuk^{*1,2} (¹Department of Integrative Energy Engineering, Korea University, ²KU-KIST Graduate School of Converging Science and Technology, Korea University)

C10.05 [17:36 - 18:00]

Artificial Intelligent Sensors and In-Sensor Optoelectronic Computing / YOON Hoon Hahn^{*1} (¹Department of Semiconductor Engineering, School of Electrical Engineering and Computer Science, Gwangju Institute of Science and Technology)

[C11-or] Women's Session: Chat-GPT for Physics: Booming or Dooming

2024. 04. 24 Wednesday 16:00~16:48

Room: 204

좌장: 조연정 경북대학교

Chair: JO Youn Jung (Kyungpook National University)

C11.01 [16:00 - 16:48]

Chat-GPT for Physics: Booming or Dooming / 정재승^{*1} (¹ 바이오시스템학과, KAIST)

[C12-pl] Focus: Toward next-generation accelerator V-Trends of R&Ds in Accelerators and Issues toward Scientific leap

2024. 04. 24 Wednesday 16:00~17:36

Room: 205

좌장: 박성희 고려대학교

Chair: PARK Seong Hee (Korea University)

C12.01 [16:00 - 16:24]

4GSR Hard X-ray NanoProbe (HXNP) Beamline / KIM Ki Jeong^{*1}, LIM Jun¹, SHIN Jaeyong¹
(¹POSTECH)

C12.02 [16:24 - 16:48]

BioPharma-BioSAXS Beamline / KIM Yeongsik¹, JIN Kyeong Sik², KIM Jehan¹, KIM Ki-jeong^{*1}
(¹Beamline Science Team/4GSR Project Headquarters, Pohang Accelerator Laboratory, ²Life Science Chemical Structure Research Team, Pohang Accelerator Laboratory)

C12.03 [16:48 - 17:12]

Coherent X-ray Diffraction Beamline / HAM Daseul¹, LIM Jae-Hong¹, KIM Ki-Jeong¹, LEE Su Yong^{*2} (¹4GSR Project Headquarters, Beamline Science Team, Pohang Accelerator Laboratory, POSTECH, ²PLS-II Beamline, Pohang Accelerator Laboratory, POSTECH)

C12.04 [17:12 - 17:36]

Photon source of In-Vacuum undulators for Korea-4GSR 10 beamlines in Phase I / HA Changwan¹, KWON Ik Seon¹, KIM Dong Eon¹, KIM Ki-Jeong¹, KIM Jehan^{*1}, LIM Jae-Hong^{*1} (¹4GSR Project Headquarters, Pohang Accelerator Laboratory, POSTECH)

[C13-bp] Young Biophysicist Award and Cellular Biological Physics

2024. 04. 24 Wednesday 16:00~17:12

Room: 206

좌장: 류제경 서울대학교

Chair: RYU Je Kyung (Seoul National University)

C13.01 [16:00 - 16:12]

Evaluating the performance of fluorescent proteins for single-molecule and specific gene loci imaging in live and fixed Escherichia coli / SON Jung Bae¹, KIM Seunghyeon¹, YANG Sora¹, AHN Youmin¹, LEE Nam Ki^{*1} (¹Seoul National University)

C13.02 [16:12 - 16:24]

Characterization of nano-sized objects with label-free imaging / LEE Il-Buem², HONG Seok-Cheol^{*2}, PARK Jin-Sung^{1,2}, CHO Minheang^{2,3} (¹Physics, Korea University, ²IBS, Seoul, Center for molecule spectroscopy and dynamics, ³Chemistry, Korea University)

C13.03 [16:24 - 16:48]

Holotomography and artificial intelligence:

label-free 3D imaging, lipid droplet quantification, cell type classification, and virtual staining of live cells, tissues, and organoids / PARK YongKeun^{*1} (¹Physics, KAIST)

C13.04 [16:48 - 17:12]

Compatibility of termination mechanisms in bacterial transcription with inference on

eukaryotic models / SONG Eunho^{*1,2} (¹Department of Physics and Astronomy, Seoul National University, ²Laboratory of Chemical Physics, National Institute of Diabetes and Digestive and Kidney Diseases, USA)

[C14-op] Ultrafast and Relativistic Optics

2024. 04. 24 Wednesday 16:00~18:00

Room: 209

좌장: **성재희** 광주과학기술원

Chair: SUNG Jae Hee (GIST)

C14.01 [16:00 - 16:12]

Coherent Perfect Loss with Single and Broadband Resonators at Photonic Crystal Nanobeam

/ CHOI Jihoon^{1,3}, KIM Na Young², HONG Young Ki^{2,3}, NOH Heeso^{*1} (¹Kookmin University, ²Department of Physics, Gyeongsang National University, ³Research Institute of Natural Science, Gyeongsang National University)

C14.02* [16:12 - 16:24]

Room-temperature robust localized excitons in atomically thin semiconductors on metallic

nanohole / PARK Kyoung-Duck^{*1}, MOON Taeyoung¹, OH Dong Kyo², LEE Jihae², CHOI Soo Ho³, CHO Hyunje⁴, LEE Hyeongwoo¹, KOO Yeonjeong¹, JO Moon-Ho⁴, KIM Ki Kang³, RHO Junsuk² (¹Physics, POSTECH, ²Mechanical Engineering, POSTECH, ³Energy Science, Sungkyunkwan University, ⁴Materials Science and Engineering, POSTECH)

C14.03 [16:24 - 16:36]

완전 무기 페로브스카이트 CsPbI₃의 THz 흡수 특성: 새로운 THz 센서의 가능성 / MAENG INHEE^{*1},

JUNG Min-Cherl², KWON Young-Kyun³, WANG Shenghao⁴, OH Seung Jae¹ (¹YUHS-KRIBB, Medical Convergence Research Institute, Yonsei University Health System, ²Institute of Pure and Applied Sciences, University of Tsukuba, ³Department of Physics, Kyung Hee University, ⁴Materials Genome Institute, Shanghai University)

C14.04 [16:36 - 16:48]

단일 셀 미생물을 이용한 전이금속 칼코겐화합물에서의 2 차 고조파 변조 연구 / KIM Young Chul¹, JUN Seung Won¹, AHN Yeong Hwan^{*1} (¹Department of Physics and Department of Energy Systems Research, Ajou University)

C14.05 [16:48 - 17:12]

High power THz generation at APRI / KANG Chul^{*1} (¹Advanced Photonics Research Institute, GIST)

C14.06 [17:12 - 17:36]

Emergence of Nonlinear Quantum Electrodynamics at Ultra-High Laser Intensities / KIM Chul Min^{*1,2} (¹Advanced Photonics Research Institute, Gwangju Institute of Science and Technology, ²Department of Physics and Photon Science, Gwangju Institute of Science and Technology)

C14.07 [17:36 - 18:00]

Plasma-based Methods for Compression of Ultraintense Laser Pulses / HUR Min Sup^{*1} (¹Physics, UNIST)

Session D

[D1-pa] Pioneer : Forward Physics at LHC I

2024. 04. 25 Thursday 08:30~09:42

Room: 101

좌장: **이강영** 경상국립대학교

Chair: LEE Kang Young (Gyeongsang National University)

D1.01 [08:30 - 08:54]

The new era of collider neutrinos: the Scattering and Neutrino Detector at the LHC / DE LELLIS Giovanni^{*1} (¹Physics, University of Naples "Federico II", Italy)

D1.02 [08:54 - 09:18]

Activities of Nagoya Emulsion Group / KOMATSU Masahiro^{*1} (¹Physics, Nagoya University, Japan)

D1.03 [09:18 - 09:42]

Contributions from the Korean Emulsion Group / YOON Chun Sil^{*1} (¹The Research Institute of Natural Science, Gyeongsang National University)

[D2-pa] Field and String Theory I

2024. 04. 25 Thursday 08:30~10:18

Room: 102

좌장: 김희연 KAIST

Chair: KIM Hee Yeon (KAIST)

D2.01* [08:30 - 08:42]

Inhomogeneous Vacuum of Zero Energy in Chern-Simons Gauge Theory / KIM Chanju², KIM Yoonbai^{*1}, KWON O-Kab¹, SONG Hanwool¹ (¹Department of Physics, Sungkyunkwan University, ²Department of Physics, Ewha Womans University)

D2.02* [08:42 - 08:54]

Existence of Inhomogeneous Vacuum of Zero Energy in (1+2)-dimensional Abelian Higgs Theory / JEON SeungJun¹, KIM Chanju², KIM Yoonbai^{*1}, KWON O-Kab¹, SONG Hanwool¹ (¹Department of Physics, Sungkyunkwan University, ²Department of Physics, Ewha Womans University)

D2.03 [08:54 - 09:06]

Mott gap from holographic fermion: DoS analysis / GHORAI DEBABRATA^{*1}, YUK Taewon¹, HAN Young Kwon¹, SIN Sang Jin¹ (¹Department of Physics, Hanyang University)

D2.04 [09:06 - 09:18]

Mean-field and holographic studies of the Kondo condensation in the Kondo lattice / HAN Young-Kwon¹, GHORAI DEBABRATA¹, YUK Taewon¹, SIN Sang Jin^{*1} (¹physics department, Hanyang University)

D2.05 [09:18 - 09:30]

Thermodynamics of quantum critical region in holography / SEO Yunseok^{*1} (¹College of General Education, Kookmin University)

D2.06 [09:30 - 09:42]

Searching holographic superconductor / KIM Se Jin^{*1} (¹Physics, Kookmin University)

D2.07 [09:42 - 09:54]

Topology of Interacting Holographic Fermions Systems / SUKRAKARN Supalert¹, SIN Sang Jin^{*1}, YUK Taewon¹ (¹physics department, Hanyang University)

D2.08* [09:54 - 10:06]

Topology in Holographic lattice / YUK Taewon¹, SIN Sang Jin^{*1} (¹physics department, Hanyang University)

D2.09* [10:06 - 10:18]

Types of Scalar-Gauge coupling of holography / SIN Sang Jin^{*1}, SEO JeongWon¹ (¹physics department, Hanyang University)

[D3-nu] Nuclear Experimental Method and Instrumentation

2024. 04. 25 Thursday 08:30~10:18

Room: 103

좌장: 안득순 기초과학연구원

Chair: AHN DEUK SOON (IBS)

D3.01 [08:30 - 08:42]

Effective charge state of ions in Gas in 2 - 9 MeV / CHOI Sungwook¹, AHN Jung Keun^{*1}
(¹Department of Physics, Korea University)

D3.02 [08:42 - 08:54]

R&D of mass chip test of AstroPix sensors for the Barrel Imaging Calorimeter in the EPIC experiment

/ BOK Jeongsu^{*1}, LIM SangHoon¹, RYU Jaehyeok¹, YOO Hwidong², KIM Beomkyu³, LEE Hyungjun³, BAE Joonsuk³, PARK Sangwoo³, BAE Yunseul³, JO Hyon-Suk⁴, LEE Changhui⁴, KIM Minsuk⁵ (¹Pusan National University, ²Department of Physics, Yonsei University, ³Department of Physics, Sungkyunkwan University, ⁴Department of Physics, Kyungpook National University, ⁵Department of Mathematics and Physics, Gangneung Wonju National University)

D3.03 [08:54 - 09:06]

Status of R&D for electronics and Si detector in Korea for FAZIA upgrade / KIM Giyeong^{*1}, HONG Byungsik², LEE Jongwon², KWEON Min Jung¹, KIM Jiyoung^{1,2}, PARK Jeonghyeok² (¹Physics, Inha University, ²Physics, Korea University)

D3.04 [09:06 - 09:18]

R&D of Pb/SciFi layer production for the Barrel Imaging Calorimeter in the EPIC experiment / YOO Hwidong², KIM Beom Kyu^{*1}, LEE Hyungjun¹, BAE Joonsuk¹, PARK Sangwoo¹, BAE Yunseul¹, JO Hyon-Suk³, LEE Changhui³, LIM Sanghoon⁴, BOK Jeongsu⁴, RYU Jaehyeok⁴, KIM Minsuk⁵ (¹Physics Department, Sungkyunkwan University, ²Physics Department, Yonsei University, ³Physics Department, Kyungpook National University, ⁴Physics Department, Pusan National University, ⁵Physics Department, Gangneung Wonju National University)

D3.05* [09:18 - 09:30]

Analogue silicon pixel sensor test for studying MAPS structure / YOO In-Kwon^{*1}, CHOI Yongjun¹, YANG Seunghwan² (¹Dep. of Physics, Pusan National University, ²Dep. of Physics, Inha University)

D3.06 [09:30 - 09:42]

Research and Development of the ALICE Inner Tracking System 3 in Korea / KIM Jiyoung^{*1} (¹Department of Physics, Korea University)

D3.07 [09:42 - 09:54]

R&D of module assembly for the ALICE 3 Outer Tracker / LIM SangHoon^{*1} (¹Physics Department, Pusan National University)

D3.08* [09:54 - 10:06]

Performance test of CsI(Tl) crystals for the Subthreshold Pion Production Experiment at RAON (SUPER) / AHN Jung Keun^{*1}, KIM YoungJun¹ (¹Department of Physics, Korea University)

D3.09 [10:06 - 10:18]

Current Status and Plans of Neutron Beamline at RAON / OH Geonhee^{*1}, CHARLES Akers¹, HAM Cheolmin¹, KIM Dong Geon¹, KWAK Donghyun¹, KIM Jae Cheon¹, KIM Jaesung¹, KIM Mi Jung¹, KWAK Min Sik¹, LEE CheongSoo¹, LEE Kwangbok¹, LEE Sangjin¹, LEE Young-Ouk², PYUN Seong Jae¹, SHIN Taeksu¹, SON Chanwook¹, TSHOO KyoungHo¹ (¹Experimental system, Institute for Rare Isotope Science, Institute for Basic Science, ²Nuclear Physics and Application Research Division, Korea Atomic Energy Research Institute)

[D4-ap] Focus: Recent Advances in Magnetic Imaging

2024. 04. 25 Thursday 08:30~10:06

Room: 104

좌장: **제송근** 전남대학교

Chair: JE Soong-Geun (Chonnam National University)

D4.01 [08:30 - 08:54]

Optical detection of orbital Hall effect in Ti, Mn, and Cu / CHOI Gyungmin^{*1} (¹Department of Energy Science, Sungkyunkwan University)

D4.02 [08:54 - 09:18]

수직자성박막의 자화상태 이미징 및 자성특성 연구 / MOON Kyoung-Woong^{*1} (¹Quantum Research Institute, KRISS)

D4.03 [09:18 - 09:42]

Visualizing the dynamics of magnetic order and its excitations using magneto-optic microscopy / LEE Changmin^{*1} (¹Department of Physics, Hanyang University)

D4.04 [09:42 - 10:06]

Local probing of eddy current correlated with magnetic properties / KANG Jinho¹, SUN Changhyo¹, KIM Jungi¹, YOU Jinyoung¹, JANG Min-Sun², JEONG Jae Won^{*2}, HEO Yooun^{*3}, KIM Yunseok^{*1,4} (¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, ²Metal Powder Department, Korea Institute of Materials Science (KIMS), ³Department of Physics, Inha University, ⁴Research Center for Advanced Materials Technology, Core Research Institute)

[D5-ap] 2D Materials

2024. 04. 25 Thursday 08:30~10:06

Room: 105

좌장: 김지희 부산대학교

Chair: KIM Ji-Hee (Pusan National University)

D5.01* [08:30 - 08:42]

Interface effects of proton beam irradiation on WSe₂/hBN heterostructure FETs / KO Seongmin¹, SHIN Jiwon¹, JANG Juntae¹, WOO Jaeyong¹, PARK Jaehyoung¹, YOO Jongeun¹, LEE Takhee^{*1} (¹Department of Physics and Astronomy, Seoul National University)

D5.02* [08:42 - 08:54]

Thermally-Induced Irreversible Interlayer Stacking Shift Disorder in γ -GeSe / KIM Joonho¹, LEE Giyeok², LEE Sol^{1,3}, PARK Jinsub¹, LEE Kihyun^{1,3}, JUNG Joong-Eon¹, JANG Jeongsu¹, BAE Heesun¹, IM Seong Il¹, SOON Aloysius², KIM Kwanpyo^{*1,3} (¹Physics, Yonsei University, ²Materials Science & Engineering, Yonsei University, ³Center for Nanomedicine, Institute for Basic Science)

D5.03* [08:54 - 09:06]

Deep learning analysis of interlayer stacking shift and dynamics in bilayer phosphorene / LEE Kihyun¹, LEE Sol², LEE Yangjin¹, KIM Kwanpyo^{*1} (¹Physics, Yonsei University, ²Center for Nanomedicine, Institute for Basic Science)

D5.04* [09:06 - 09:18]

Fabrication of 2D Material-based Nanostructure Through the Transfer Method / JEONG Hyeonhui¹, JEONG HYUNJEONG¹, JE YUGYEONG¹, LEE Sang-Wook^{*1} (¹Department of Physics, Ewha Womans University)

D5.05* [09:18 - 09:30]

Exploring a new graphene-based moiré system: helical trilayer graphene / OH Junhyeok¹, PARK Hangeol¹, JANG Joonho^{*1} (¹Department of Physics, Seoul National University)

D5.06* [09:30 - 09:42]

Manifesting Physical Properties of Single Crystalline Layered Metal-Rich Chalcogenide, Ta₂Se / LEE Kimoon^{*1}, LEE Jeongmin¹ (¹Department of Physics, Kunsan National University)

D5.07* [09:42 - 09:54]

In-Situ Study of Twist Angle Manipulation in 2D Materials / JEONG HYUNJEONG¹, JE YUGYEONG¹, LEE Sang-Wook^{*1} (¹Department of Physics, Ewha Womans University)

D5.08* [09:54 - 10:06]

Exciton Generation and Dissociation in WS₂ Monolayers on Periodic Ag Nanoholes / MOON Seawoo¹, NGUYEN Anh Thi¹, CHO Jungyoon¹, SONG Jungeun¹, CHO Eunseo¹, LIM Seoyoung¹, KIM Dong-Wook^{*1} (¹Department of Physics, Ewha Womans University)

[D6-co] Strongly Correlated Systems

2024. 04. 25 Thursday 08:30~10:06

Room: 106

좌장: 박창원 고등과학원

Chair: PARK Changwon (KIAS)

D6.01* [08:30 - 08:42]

Transient electronic anisotropy of FeTe / HWANG Jihyeon¹, GAO Hongchen¹, RULI Fardiman¹, KIM Younsik², KIM Changyoung², JEEN Hyoung Jeen³, KIM Kyungwan^{*1} (¹Chungbuk National University, ²Department of Physics and Astronomy, Seoul National University, ³Department of Physics, Pusan National University)

D6.02 [08:42 - 08:54]

Field-tuning axial Higgs modes in a charge-density wave phase with broken time-reversal symmetry / WULFERDING Dirk^{*1}, PARK Jongho¹, TOHYAMA Takami², PARK Seung Ryong³, KIM Changyoung¹ (¹IBS Center for Correlated Electron Systems, Seoul National University, ²Department of Applied Physics, Tokyo University of Science, ³Department of Physics, Incheon National University)

D6.03 [08:54 - 09:06]

Phonon-mediated spin transport in quantum paraelectric metals / KIM Kyoung-Min^{*1}, CHUNG

Suk Bum^{*2} (¹Center for Theoretical Physics of Complex Systems, IBS, ²Department of Physics and Natural Science Research Institute, University of Seoul)

D6.04 [09:06 - 09:18]

Two-dimensional van der Waals heavy-fermion material CeSiI / JANG Bo Gyu^{*1}, LEE Changhoon², ZHU Jian-Xin³, SHIM Ji Hoon² (¹Department of Advanced Materials Engineering For Information & Electronics, Kyung Hee University, ²Department of Chemistry, POSTECH, ³Theoretical Division, Los Alamos National Laboratory)

D6.05* [09:18 - 09:30]

Doping evolution of the electronic response of kagome metal Cs(V_{1-x}Ti_x)₃Sb₅ / KIM Dong Wook¹, NAM Hyungwon¹, SUR Yeahan², KIM Kwang-Tak², KIM Kee Hoon², MOON Soonjae^{*1} (¹Department of Physics, Hanyang University, ²Center for Novel States of Complex Materials Research, Department of Physics and Astronomy, Seoul National University)

D6.06 [09:30 - 09:42]

Flat bands by geometric frustration and electron correlations in a Mn kagome compound Sc₃Mn₃Al₇Si₅ / KIM Heung-Sik^{*1}, SAMANTA Subhasis¹ (¹Department of Physics, Kangwon National University)

D6.07 [09:42 - 09:54]

Structural dynamics of molecular trimers within a triangular lattice of LiVO₂ / YUN Seokhwan^{*1} (¹Advanced Quantum Materials Research Section, KAERI)

D6.08 [09:54 - 10:06]

Spin and valley-polarized multiple Fermi surfaces of a-RuCl₃/bilayer graphene heterostructure / KIM Youngwook^{*1}, KIM Soyun¹, HONG Jeonghoon^{2,3}, WATANABE Kenji⁴, TANIGUCHI Takashi⁵, FALSON Joseph⁶, KIM Jeongwoo² (¹Department of Physics and Chemistry, DGIST, ²Department of Physics, Incheon National University, ³Department of Physics, Indiana University, ⁴Research Center for Electronic and Optical Materials, National Institute for Materials Science, ⁵International Center for Materials Nanoarchitectonics, National Institute for Materials Science, ⁶Department of Applied Physics and Materials Science, California Institute of Technology)

[D7-co] Pioneer: Recent advancement in XFEL and Synchrotron Radiation Science

2024. 04. 25 Thursday 08:30~10:06

Room: 107

좌장: 문봉진 광주과학기술원

Chair: MUN Bongjin Simon (GIST)

D7.01 [08:30 - 08:54]

Energy Science Research using In Situ and Operando Soft X-ray Spectroscopy at the National Synchrotron Light Source II / WALUYO Iradwikanari^{*1} (¹National Synchrotron Light Source II, Brookhaven National Laboratory, USA)

D7.02 [08:54 - 09:18]

Energy dissipation in the dynamics of atoms and molecules at metal surfaces / ALDUCIN Maite^{1,2}, JUARISTI Joseba Iñaki^{1,2,3}, DÍEZ MUIÑO Ricardo^{*1,2} (¹Donostia International Physics Center DIPC, San Sebastian (Spain), ²Centro de Física de Materiales CSIC-UPV/EHU, San Sebastian (Spain), ³Universidad del País Vasco / Euskal Herriko Unibertsitatea UPV/EHU, San Sebastian (Spain))

D7.03 [09:18 - 09:42]

Recent advances in X-ray phase imaging / LEE KyeoReh^{*1}, LIM Jun², LEE Su Yong², PARK YongKeun¹ (¹Department of Physics, KAIST, ²Pohang Accelerator Laboratory, Pohang University of Science and Technology)

D7.04 [09:42 - 10:06]

In situ AP-XPS studies on bimetallic alloy surfaces at the Pohang Light Source II / KIM Jeongjin^{*1} (¹Pohang Light Source II, Pohang Accelerator Laboratory/POSTECH)

[D8-co] Magnetism

2024. 04. 25 Thursday 08:30~10:06

Room: 108

좌장: **임성현** 울산대학교

Chair: RHIM Sonny (University of Ulsan)

D8.01 [08:30 - 08:42]

Magnetically "Seasoned" Janus WSSe; Transition Metal Adsorption and Doping Effect on Magnetic and Electronics properties of Janus WSSe-X (X=V, Cr, Mn, Fe, Co) / GEBREDINGLE YISEHAK¹, KIM HEESANG¹, KIM Namme^{*1} (¹Department of Physics, Soongsil University)

D8.02 [08:42 - 08:54]

Generalized anisotropic spin Hamiltonian for NiPS₃: spin-flop transition and dipole interaction / KIEM Do Hoon¹, NAUMAN Muhammad³, CHOI Joonyoung², KIM Junghyun Kim⁴, PARK Je-Geun⁴, JO Youn Jung², HAN Myung Joon^{*1} (¹Department of Physics, KAIST, ²Department of Physics, Kyungpook National University, ³Division of Mathematical and Physical Sciences, Institute of Science and Technology Austria, ⁴Department of Physics and Astronomy, Seoul National University)

D8.03 [08:54 - 09:06]

Order and Disorder in Ferromagnets with Interfacial Dzyaloshinskii-Moriya Interaction / UTESOV Oleg^{*1}, SYROMYATNIKOV Arseny² (¹Center for Theoretical Physics of Complex Systems, Institute for Basic Science, ²Theoretical Physics Division, Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre "Kurchatov Institute")

D8.04 [09:06 - 09:18]

Observation of magnetic ordering using scanning tunneling microscope / OLLIER Alexina^{1,2}, FARAH SHANDIZ Pegah^{1,2}, FANG Lei^{1,2}, PARK Je-Geun³, CHO Woonghee³, PARK Pyeongjae⁴, HEINRICH Andreas J.^{1,2}, JANG Won Jun^{*1,2} (¹Center for quantum nanoscience, Center for Quantum Nanoscience, ²Physics Department, Ewha Womans University, ³Department of Physics and Astronomy, Seoul National University, ⁴Materials Science and Technology Division, Oak Ridge National Laboratory)

D8.05 [09:18 - 09:30]

Reversible control between Kondo effect and spin-flip excitation on FePc on Au(111) / JANG Won Jun^{*1,2}, COLAZZO Luciano^{1,2}, URDANIZ Corina^{1,2}, WOLF Christoph^{1,2}, FANG Lei^{1,2}, PHARK Soohyun^{1,2}, HEINRICH Andreas^{1,2} (¹Center for quantum nanoscience, Center for Quantum Nanoscience, ²Department of Physics, Ewha Womans University)

D8.06 [09:30 - 09:42]

Construction of the Cryogenic Scanning Probe Microscopy / JANG Joonho^{*1}, NAMKYUNG Lee¹ (¹Department of Physics, Seoul National University)

D8.07 [09:42 - 09:54]

Scanning magnetometry based on a diamond Nitrogen-Vacancy center using various quantum sensing protocols / LEE Yuhan¹, LEE Dongkwon¹, LEE Seokmin¹, JANG Sungjin¹, HAAM Chanjong¹, LEE Donghun^{*1} (¹Physics, Korea University)

D8.08 [09:54 - 10:06]

Spin wave imaging using scanning NV magnetometry / LEE Seokmin^{1,2}, LEE Dongkwon¹, LEE Yuhan^{1,2}, JANG Sungjin^{1,2}, HAAM Chanjong^{1,2}, SON Seokkyun³, KIM Kabjin⁴, HEINRICH Andreas², LEE Donghun^{*1} (¹Physics, Korea University, ²Physics, Center for Quantum Nanoscience, ³Physics, Kyung Hee University, ⁴Physics, KAIST)

[D9-at] AMP I - Ultracold Atoms, Molecules, and Matter Wave

2024. 04. 25 Thursday 08:30~09:54

Room: 201

좌장: 박지우 포항공과대학교

Chair: PARK Jee Woo (POSTECH)

D9.01* [08:30 - 08:42]

Experimental demonstration of super short neutral atom array / AHN Jaewook^{*1}, HWANG Hansub¹ (¹Physics, KAIST)

D9.02* [08:42 - 08:54]

Experimental demonstration of fast stomic transport without final excitation / HWANG Sunhwa¹, BYUN Andrew¹, HWANG Han Sub¹, JEONG Seok Ho¹, AHN Jaewook^{*1} (¹Physics, KAIST)

D9.03* [08:54 - 09:06]

Microscopic observation of long-range tunneling in tilted optical lattices / KWON Kiryang¹, HUR Junhyeok¹, LEE Byungjin¹, CHOI Jae Yoon^{*1} (¹Physics Department, KAIST)

D9.04 [09:06 - 09:18]

Topological Floquet three-band model in a one-dimensional optical lattice via dual-mode resonant driving / BAE Dalmin¹, KIM Myeonghyeon¹, PARK Junyoung¹, KWON Junhwan¹, KWAK Haneul¹, SHIN Yong-il^{*1} (¹Department of Physics and Astronomy, Seoul National University)

D9.05* [09:18 - 09:30]

Dynamic similarity in vortex shedding past a Gaussian potential in atomic BEC / KWON Jun Hwan¹, KWAK Haneul¹, KIM Myeonghyeon¹, SHIN Yong-il^{*1} (¹Department of Physics and Astronomy, Seoul National University)

D9.06* [09:30 - 09:42]

Chaos-assisted turbulence in spinor Bose-Einstein condensates / KIM Jongmin¹, JUNG Jongheum¹, LEE Junghoon¹, HONG Deokhwa¹, SHIN Yong-il^{*1} (¹Department of Physics and Astronomy, Seoul National University)

D9.07* [09:42 - 09:54]

Towards the creation of degenerate Na⁴⁰K molecular gases with long-range dipolar interactions. / JANG Seokmin¹, CHANG Jaeryeong¹, KIM Yoonsoo¹, LEE Sungjun¹, LIM Younghoon¹, KIM Sooshin¹, PARK Jee Woo^{*1} (¹Department of Physics, POSTECH)

[D10-se] Pioneer: Physics of Si-compatible Ferroelectric Memory I

2024. 04. 25 Thursday 08:30~10:06

Room: 202

좌장: 이준희 울산과학기술원

Chair: LEE Jun Hee (UNIST)

D10.01 [08:30 - 08:54]

Multi-order parameter coupling and phase identification in hafnia / RAPPE Andrew Marshall^{*1}, ZHOU Songsong¹ (¹Chemistry, University of Pennsylvania, USA)

D10.02 [08:54 - 09:18]

Structural phase purification of bulk HfO₂:Y through pressure cycling / MUSFELDT Jan^{*1}, SINGH Sobhit², FAN Shiyu¹, GU Yanhong¹, XU Xianghan³, CHEONG Sang-Wook³, LIU Zhenxian⁴, VANDERBILT David³, RABE Karin^{*3} (¹Chemistry, University of Tennessee, USA, ²Physics, University of Rochester, USA, ³Physics, Rutgers University, USA, ⁴Physics, University of Illinois Chicago, USA)

D10.03 [09:18 - 09:42]

Interface design for high-performance ferroelectric memories / KHAN Asif^{*1} (¹School of Electrical and Computer Engineering, Georgia Institute of Technology, United States)

D10.04 [09:42 - 10:06]

Understand Ferroelectric Hafnia with Deep Potential Molecular Dynamics / LIU Shi^{*1} (¹Department of Physics, Westlake University, China)

[D13-bp] Molecular Biological Physics

2024. 04. 25 Thursday 08:30~10:18

Room: 206

좌장: 김하진 울산과학기술원

Chair: KIM Hajin (UNIST)

D13.01 [08:30 - 08:42]

deepFLUOR: Deep Learning based Single-Molecule Images Classification / LEE Jinseob¹, KIM Byungju², PARK Yeongkyoung^{3,4}, KIM Yoonki^{3,4}, LEE Jong-Bong^{*1,2} (¹School of Interdisciplinary Bioscience and Bioengineering, POSTECH, ²Physics, POSTECH, ³Creative Research Initiatives Center for Molecular biology of Translation, Korea University, ⁴School of Life Sciences, Korea University)

D13.02* [08:42 - 08:54]

Development of a novel nanofluidic time-resolved cryo-EM technique with micro-second temporal resolutions / YOO Jeonghun¹, KANG Hyewon¹, JUNG Bumjoon², LEE Wonhee^{*1,2} (¹Department of Physics, KAIST, ²Graduate School of Nanoscience and Technology, KAIST)

D13.03* [08:54 - 09:06]

Binding enhancement of UV-DDB by XPC-RAD23B facilitates the lesion search / AN Soyeong¹, LEE Ja Yil*¹ (¹Department of Biological Sciences, UNIST)

D13.04* [09:06 - 09:18]

Voronoi Tessellation Analysis of Tau-Induced Microtubule Cluster Formation / LEE-EOM Chaelin¹, JUNG Jaehun¹, PARK Celine¹, SHON Min Ju*^{1,2} (¹Department of Physics, POSTECH, ²School of Interdisciplinary Bioscience and Bioengineering, POSTECH)

D13.05* [09:18 - 09:30]

Intrinsic termination mechanism by bacteriophage RNA polymerases disclosing an adaptation of bacterial polymerases / SONG Eunho^{1,2,4}, HAN Sun^{1,2}, UHM Heesoo^{1,2,5}, KANG Changwon³, HOHNG Sungchul*^{1,2} (¹Department of Physics and Astronomy, Seoul National University, ²Institute of Applied Physics, Seoul National University, ³Department of Biological Sciences, and KAIST Stem Cell Center, KAIST, ⁴Laboratory of Chemical Physics, National Institute of Diabetes and Digestive and Kidney Diseases, ⁵Department of Biochemistry and Molecular Biology, and Medical Research Center of Genomic Medicine Institute, Seoul National University College of Medicine)

D13.06 [09:30 - 09:42]

Exploring the biophysics of Tau–DNA interactions at the single-molecule level / PARK Celine¹, JUNG Jaehun¹, RAH Sang-Hyun¹, LEE-EOM Chaelin¹, SHON Min Ju*¹ (¹Department of Physics, POSTECH)

D13.07* [09:42 - 09:54]

Periodic Oscillation of Dinucleotide Stiffness as a Dominant Factor in DNA looping / KIM Chanwoo¹, YOO Jejoong², KIM Hajin*^{1,3} (¹UNIST, ²Center for Genomic Integrity, Institute for Basic Science, ³Department of Physics, Sungkyunkwan University)

D13.08* [09:54 - 10:06]

Regulation of Microtubule Lattice Structure and Flexural Rigidity by Tau and Anti-Cancer Drugs / PARK Qudan Agnes¹, LEE Juncheol¹, TANAKA Junichi², CHOI Myung Chul*¹ (¹Department of Bio and Brain Engineering, KAIST, ²Department of Chemical, Biology and Marine Science, University of the Ryukyus)

D13.09* [10:06 - 10:18]

Novel Surface Passivation Enables High-Throughput Single-Molecule Analysis in Microfluidics / KIM Byoung Choul*¹, TRAN Tham Truong Phuong¹, VELLAMPATTI KRISHNAMOORTHY Srivithya¹, NGUYEN Linh Thanh¹ (¹Major of Nano-Bioengineering, Incheon National University)

[D14-op] Focus: Inverse Design in Nanophotonics

2024. 04. 25 Thursday 08:30~10:18

Room: 209

좌장: **박형렬** 울산과학기술원

Chair: PARK Hyeong-Ryeol (UNIST)

D14.01 [08:30 - 08:54]

Inverse design of silicon photonic devices / KURT Hamza^{*1}, YOON Jinhyeong¹, KIM Juhyeong¹, KIM Jae-Yong¹, HONG Seokjin¹, NESELI Berkay¹, PARK Hyo-Hoon¹ (¹Electrical Engineering, KAIST)

D14.02 [08:54 - 09:18]

AI-assisted inverse design in nanophotonics / SO Sunae^{*1} (¹Department of Electro-Mechanical Systems Engineering, Korea University, Sejong)

D14.03 [09:18 - 09:42]

Enhanced Data Augmentation with Adjoint Sensitivity Analysis / KANG Chanik¹, SEO Dongjin², CHUNG Haejun^{*2} (¹Department of Artificial Intelligence, Hanyang University, ²Department of Electronic Engineering, Hanyang University)

D14.04 [09:42 - 10:06]

Toward accurate neural Maxwell solvers for inverse design of metasurfaces / KIM Myungjoon¹, PARK Junhyung¹, SHIN Jonghwa^{*1} (¹Department of materials science and engineering, KAIST)

D14.05* [10:06 - 10:18]

단일 건식식각 공정을 이용한 광자결정 표면방출 레이저 / KIM Myeongeun^{1,2}, SONG Yeseong^{1,2}, LEE Myungjae^{2,3,4}, JEON Heonsu^{*1,3,4} (¹Department of Physics and Astronomy, Seoul National University, ²Inter-university Semiconductor Research Center, Seoul National University, ³Department of Materials Science and Engineering, Seoul National University, ⁴Institute of Applied Physics, Seoul National University)

[D15-qu] Focus: Application of Quantum Algorithm for Physics

2024. 04. 25 Thursday 08:30~10:18

Room: 301

좌장: **김경일** 기초과학연구원

Chair: KIM Kyungil (IBS)

D15.01 [08:30 - 09:06]

Quantum Error mitigation as a continuous path toward utility of quantum computer / KIM Youngseok^{*1} (IBM Quantum , IBM T. J. Watson Research Center, USA)

D15.02 [09:06 - 09:42]

Quantum-inspired classical algorithms from linear optics / LIM Youngrong*¹ (¹School of computational sciences, KIAS)

D15.03 [09:42 - 10:18]

Quantum Annealing-Aided Design of Nanophotonic Structure / JUNG Serang¹, KIM Seongmin^{2,3}, LUO Tengfei², LEE Eungkyu*¹ (¹Electronic Engineering, Kyung Hee University, ²Aerospace and Mechanical Engineering, University of Notre Dame, ³National Center for Computational Sciences, Oak Ridge National Laboratory)

Session Y

[Y15-qu] Plenary Lecture

2024. 04. 25 Thursday 10:30~11:18

Room: 301

좌장: 김재완 고등과학원

Chair: KIM Jaewan (KIAS, Korea Institute for Advanced Study)

Y15.01 [10:30 - 11:18]

Practical Quantum Computing with Trapped Ions / KIM Jungsang*¹ (¹Department of Electrical and Computer Engineering, Duke University)

Session E

[E1-pa] Accelerator-Pheno Joint

2024. 04. 25 Thursday 13:00~14:12

Room: 101

좌장: 신서동 전북대학교

Chair: SHIN Seodong (Jeonbuk National University)

E1.01 [13:00 - 13:12]

A systematic uncertainty-aware machine learning model for high energy physics / CHO Won

Sang^{*1}, HAN Subin¹, KIM Hyung-do¹ (¹Department of Physics and Astronomy, Seoul National University)

E1.02* [13:12 - 13:24]

Exploring novel decay channels of the light charged Higgs boson in type-I 2HDM / LEE SooJin^{*1}, SONG Jeonghyeon¹, KIM JINHEUNG¹, WANG Daohan¹, SANYAL Prasenjit¹ (¹Physics, Konkuk University)

E1.03 [13:24 - 13:36]

Panoramic study on the K-factors at the 14 TeV LHC / KIM JINHEUNG^{*1}, KIM Dongjoo¹, LEE Soojin¹, JUNG Hanseok¹, KIM Dongchan¹, SONG Jeonghyeon¹ (¹Department of physics, Konkuk University)

E1.04 [13:36 - 13:48]

Identification of tqg FCNC process using machine learning techniques / PARK Inkyu^{*1}, KO Byeonghak¹, LEE Jason Sang Hun¹, ROH Youn Jung¹, WATSON Ian James¹, YANG Seungjin², JANG Woojin¹, HEO Jeewon¹ (¹University of Seoul, ²Department of Physics, Kyung Hee University)

E1.05* [13:48 - 14:00]

기계학습 기반 전자-양전자 충돌실험에서 암흑광자 연구 / PARK Kihong¹, KIM Kyungho², CHO Kihyeon^{*1} (¹UST, KISTI, ²Computational Science Team, KISTI)

E1.06 [14:00 - 14:12]

The importance of a gauge symmetry in the search for dark matter at high energy colliders / PARK Myeonghun^{*1,2}, KO Pyungwon² (¹School of Natural Sciences, Seoul National University of Science and Technology, ²School of Physics, KIAS)

[E2-pa] Field and String Theory II

2024. 04. 25 Thursday 13:00~13:48

Room: 102

좌장: **이상민** 서울대학교

Chair: LEE Sangmin (Seoul National University)

E2.01 [13:00 - 13:12]

Massive twistor particles in electromagnetic fields / LEE Sangmin^{*1} (¹College of Liberal Studies, Seoul National University)

E2.02 [13:12 - 13:24]

Operator algebra in matrix model / YOON Junggi^{*1}, JEVICKI Antal², MUKHERJEE Debangshu¹

(¹Junior Research Group, Asia-Pacific Center for Theoretical Physics(APCTP), ²Department of Physics, Brown University)

E2.03 [13:24 - 13:36]

Digital Quantum Simulation for the Spectroscopy of Schwinger Model on Lattice / GHIM Dongwook^{*1,2}, HONDA Masazumi^{1,2} (¹Interdisciplinary Theoretical and Mathematical Sciences Program (iTHEMS), RIKEN, ²Yukawa Institute for Theoretical Physics (YITP), Kyoto University)

E2.04 [13:36 - 13:48]

Unsupervised Machine Learning Techniques for Exploring Tropical Coamoeba, Brane Tilings and Seiberg Duality / SEONG Rak-Kyeong^{*1} (¹Department of Mathematical Sciences, UNIST)

[E3-nu] Focus: Early-Stage Research at RAON I

2024. 04. 25 Thursday 13:00~14:12

Room: 103

좌장: **채경욱** 성균관대학교

Chair: CHAE Kyung Yuk (Sungkyunkwan University)

E3.01 [13:00 - 13:24]

Beam commissioning status of the RAON ISOL facility / LEE Jinho¹, YIM Heejoong^{*1}, HASHIMOTO Takashi^{*1}, HWANG Wonjoo^{*1}, JEONG Jaewon^{*1}, HEO Seongjin^{*1}, YOO Kyounghun^{*1}, YEON Yeongheum^{*1}, PARK Dongjoon^{*1}, NAM Shinwoo^{*1}, PARK Sungjong^{*1}, SHIN Taeksu^{*1} (¹Experimental System Division, Institute for Basic Science)

E3.02 [13:24 - 13:48]

Potential Research and Applications with NDPS at RAON / HAM Cheolmin^{*1}, AKERS Charles¹, KIM Dong Geon¹, KIM Jae Cheon¹, KIM Jaesung¹, KIM Mi Jung¹, KWAG Min Sik¹, KWAK Donghyun¹, LEE CheongSoo¹, LEE Kwangbok¹, LEE Sangjin¹, LEE Young-Ouk², OH Geonhee¹, PYEUN Seong Jae¹, SHIN Taeksu¹, TSHOO Kyoungho¹ (¹Institute for Rare Isotope Science, Institute for Basic Science, ²Nuclear Physics Application Research Division, Korea Atomic Energy Research Institute)

E3.03 [13:48 - 14:12]

Mass-measurement activities at CENS / KORKULU Zeren^{*1}, For the FRIB23078 Collaboration, For MRTOF-MS at RAON Collaboration (¹Center for Exotic Nuclear Studies (CENS), IBS)

[E4-ap] Focus: Light-Matter Interaction in Emerging 2D Materials I

2024. 04. 25 Thursday 13:00~14:12

Room: 104

좌장: 이현석 충북대학교

Chair: LEE Hyun Seok (Chungbuk National University)

E4.01 [13:00 - 13:24]

Anomalous behavior in dark-bright splitting impacts the biexciton binding energy in $(\text{BA})_2(\text{MA})_{n-1}\text{Pb}_n\text{Br}_{3n+1}$ ($n = 1-3$) / JANG Joon Ik^{*1} (¹Physics, Sogang University)

E4.02 [13:24 - 13:48]

Modulation of interlayer coupling and optical properties of van der Waals layered semiconductors / KIM Jeongyong^{*1} (¹Department of Energy Science, Sungkyunkwan University)

E4.03 [13:48 - 14:12]

Room-temperature exciton transport in monolayer semiconductors / KIM Hyungjin^{*1} (¹Department of Materials Science and Engineering, Yonsei University)

[E5-ap] Surface and Interface

2024. 04. 25 Thursday 13:00~13:48

Room: 105

좌장: 조두희 연세대학교

Chair: CHO Doohee (Yonsei University)

E5.01 [13:00 - 13:12]

Improving Electron Transport in Halide Perovskites via Alkali Cation Interfacial Passivation / LEE Ahreum¹, KIM JIHYUN¹, JO William^{*1} (¹Department of Physics, Ewha Womans University)

E5.02* [13:12 - 13:24]

Superior Electromagnetic Interference Shielding via Micro-Nano Hierarchical Structures Inspired by Rose Petal Surfaces / CHAE Heejoon¹, PARK Hyunje², KANG Dae Joon^{*1} (¹Department of Physics, Sungkyunkwan University, ²Research Institute of Basic Sciences, Sungkyunkwan University, ³Sungkyunkwan University)

E5.03* [13:24 - 13:36]

Study on Scanning Probe Microscopy based nanoelectronics of Graphene/2D semiconductor interface / CHOI INCHUL¹, PARK Do Hyun¹, YU Jaeho¹, CHUNG Hyun-Jong^{*1} (¹Department of Physics, Konkuk University)

E5.04 [13:36 - 13:48]

Mirroring Nature: A Novel Method for Replicating Cicada Wing Nanostructures / 박현제²,

CHOI Ha Young³, CHAE Heejuon⁴, KANG Dae Joon^{*4} (¹Sungkyunkwan University, ²Research Institute of Basic Sciences, Sungkyunkwan University, ³Interdisciplinary Course of Physics and Chemistry, Sungkyunkwan University, ⁴Department of Physics, Sungkyunkwan University)

[E6-st] Phase Transitions & Critical Phenomena

2024. 04. 25 Thursday 13:00~14:12

Room: 106

좌장: 김동희 광주과학기술원

Chair: KIM Dong-Hee (GIST)

E6.01 [13:00 - 13:24]

Treating non-equilibrium steady state and revealing quantum phase transition in quantum point contacts / HONG Jongbae^{*1} (¹Seoul National University)

E6.02 [13:24 - 13:36]

A comprehensive understanding for the second-order Kuramoto Model / KIM Cook¹, KAHNG Byungnam^{*1} (¹Department of energy engineering, KENTECH)

E6.03 [13:36 - 13:48]

Hybrid synchronization transitions of mixed-order Kuramoto oscillators / PARK Jinha¹, KAHNG Byungnam^{*1} (¹Department of energy engineering, KENTECH)

E6.04* [13:48 - 14:00]

Phase transition in active Ising model / WOO Chul-Ung¹, NOH Jae Dong^{*1} (¹Department of Physics, University of Seoul)

E6.05* [14:00 - 14:12]

Generalization error and variance peak in the spherical perceptron / KIM Gilhan¹, SOH Hyunghoon², BAEK Yongjoo^{*1} (¹Department of Physics and Astronomy, Seoul National University, ²Department of Physics education, Seoul National University)

[E7-co] Condensed-matter Computational Physics

2024. 04. 25 Thursday 13:00~14:12

Room: 107

좌장: 최상국 고등과학원

Chair: CHOI Sangkook (KIAS)

E7.01 [13:00 - 13:12]

Application of the Pseudo Jahn Teller Effect in crystal: Insights into Ferroelectric Phase

Transition of group IV chalcogenide / JANG Jesun^{*1}, JHI Seung Hoon¹ (¹Department of Physics, POSTECH)

E7.02* [13:12 - 13:24]

First-Principles Study of the Magnetic Properties of Co/Pt Multilayers / KWON Young-Kyun^{*1}, PARK Sohee¹ (¹Department of Physics, Kyung Hee University)

E7.03* [13:24 - 13:36]

Spin Hall Conductivity Enhancement of Bi₂Se₃ by Bi Layer Incorporation: A First-Principles Study / JEONG Dameul¹, KWON Young-Kyun^{*1} (¹Department of Physics, Kyung Hee University)

E7.04* [13:36 - 13:48]

First-principles study of dielectric properties of ferroelectric perovskite oxides with on-site and inter-site Hubbard interactions / CHOI Min Chul^{1,2,3}, YANG Wooil⁴, SON Young-Woo⁴, PARK Se Young^{*1,2,3} (¹Department of physics, Soongsil University, ²Origin of Matter and Evolution of Galaxies (OMEG) Institute, Soongsil University, ³Integrative Institute of Basic Sciences, Soongsil University, Soongsil University, ⁴School of Computational Sciences, Korea Institute for Advanced Study)

E7.05* [13:48 - 14:00]

Unveiling the Anomalous Hall Effect in Fe₃GaTe₂: The Role of a Flat Nodal Line / KANG Yoon-Gu¹, CHO Woohyun¹, CHA Jaehun¹, LEE Dong Hyun David¹, KIEM Do Hoon¹, OH Jaewhan¹, PARK Jongho^{2,3}, KIM Changyoung^{2,3}, YANG Yongsoo¹, KIM Yeong kwan¹, YANG Heejun¹, HAN Myung Joon^{*1} (¹Department of Physics, KAIST, ²Center for Correlated Electron Systems, Institute for Basic Science, ³Department of Physics and Astronomy, Seoul National University)

E7.06 [14:00 - 14:12]

Magnetic interactions associated with spin-defect states in quasi-one-dimensional MoBr₃ / KUMARI PILLALA K², PARK Se Young^{*1,2} (¹Department of physics, Soongsil University, ²Department of Physics and Origin of Matter and Evolution of Galaxies (OMEG) Institute, Soongsil University)

[E8-co] Instrumentation and Big Facilities/Instrumentation and Big Facilities

2024. 04. 25 Thursday 13:00~14:00

Room: 108

좌장: 이수용 포항가속기연구소

Chair: LEE Su Yong (Pohang Accelerator Laboratory)

E8.01* [13:00 - 13:12]

Pressure-Induced Phase Transition in Quasi 2D Organic-Inorganic Hybrid Perovskites / KIM

Min Jae¹, KANG Myeongjun¹, PARK Soomin², RYU Young Jay³, CHARITON Stella³, ZHANG Dongzhou³, PRAKAPENKA Vitali³, WANG Yanbin³, LEE Hyunkyung¹, KWON Se Yeong¹, PARK Sungkyun¹, KIM Jaeyong², OK Jong Mok^{*1} (¹Department of Physics, Pusan National University, ²Department of Physics, Hanyang University, ³Center for Advanced Radiation Sources, The University of Chicago)

E8.02 [13:12 - 13:24]

Memory effect in ferroelectric polyvinylidene fluoride films via spin crossover probes / KOO Yong Sung^{*1} (¹Institute of Conceptual Science, Institute of Conceptual Science)

E8.03 [13:24 - 13:36]

Synthesis, X-ray and thermoluminescence properties of TiHfF₅ / D Joseph Daniel¹, CHO Jaeyoung¹, KIM Hong Joo^{*1} (¹Department of Physics, Kyungpook National University)

E8.04 [13:36 - 13:48]

Method for reducing the laser spot-size on the cantilevers for fast tip-scanned high-speed atomic force microscopes / JUMA Oyoo Michael¹, OTIENO Luke Oduor¹, NGUYEN Thi Thu¹, NGUYEN Thi Ngoc¹, LEE Yong Joong^{*1} (¹School of Mechanical Engineering, Kyungpook National University)

E8.05 [13:48 - 14:00]

Linear-T resistivity from random vector- boson-fermion couplings / WANG Yili^{*1} (¹Physics, Hanyang University)

[E9-at] AMP II - Spectroscopy and Collisions

2024. 04. 25 Thursday 13:00~14:12

Room: 201

좌장: **채은미** 고려대학교

Chair: CHAE Eunmi (Korea University)

E9.01 [13:00 - 13:36]

고주파수 VLBI 를 이용한 대륙간 광시계 정밀 주파수 측정 / HEO Myoung Sun^{*1}, JUNG Taehyun², CHO Buseung³, KIM Jungwon⁴ (¹KRISS, ²KVN group, KASI, ³KREONET Center, KISTI, ⁴Department of Mechanical Engineering, KAIST)

E9.02* [13:36 - 13:48]

Development status of CLaSsy for the laser spectroscopy on radioactive isotopes / LIM Chaeyoung^{1,2}, PARK Sung Jong^{*1}, TSHOO KyoungHo¹, KIM Dong Geon¹, PYEUN SEONGJAE¹, KWAK Donghyun^{1,4}, HAM Cheolmin¹, SHIN Taeksu¹, LASSEN Jens⁵, KIM Jung Bog³, KIM Eun San²

(¹Institute for Rare Isotope Science, IBS, ²Department of Accelerator Science, Korea University, Sejong, ³Department of Physics Education, Korea National University of Education, ⁴Department of Physics, UNIST, ⁵Laser Application, TIRUMF)

E9.03* [13:48 - 14:00]

Vacuum Rabi spectrum and lamb shift with one trapped atom in an optical cavity / KIM Donggeon^{*1}, LEE Dowon¹, HA Taegyul¹, PARK Byung-tak¹, MOON Youngil¹, WON Jongcheol¹, LEE Moonjoo¹ (¹Electrical Engineering, POSTECH)

E9.04 [14:00 - 14:12]

Detection of ion pairs generated from collisions between hydrocarbon ions and various atoms / KIM Hyun^{*1} (¹Department of Physics, Chungnam National University)

[E10-se] Energy Materials and Devices - Harvesting, Storage, Conversion

2024. 04. 25 Thursday 13:00~14:12

Room: 202

좌장: 황도경 한국과학기술연구원

Chair: HWANG Do Kyung (Korea Institute of Science and Technology (KIST))

E10.01* [13:00 - 13:12]

Novel In Situ Synthesis Method for High-Purity β -Polymorphs in Polyvinylidene Fluoride / LEE Dongseong¹, KANG Dae Joon^{*1,2} (¹Sungkyunkwan University, ²Interdisciplinary Course of Physics and Chemistry, Sungkyunkwan University)

E10.02* [13:12 - 13:24]

에너지 수확응용을 위한 형광필름기반 마찰전기 나노발전소자 / MANDAR Vasant Paranjape², LEE Jun Kyu², MANCHI Punnarao², SONTYANA Adonijah Graham², ANAND Kurakula², VENKATA Siva Kavarthapu², YU Jae Su^{*1,2} (¹Department of Electronic Engineering, Kyung Hee University, ²경희대학교 전자정보융합공학과)

E10.03* [13:24 - 13:36]

하이브리드 슈퍼커패시터를 위한 수열합성법을 통한 $ZnMoO_4/MoO_3$ 전극물질 제작 및 특성분석 / OBULA Reddy Ankinapalli², B. N. Vamsi Krishna², RAMAKRISHNA Reddy Ayyaluri², YU Jae Su^{*1,2} (¹Department of Electronic Engineering, Kyung Hee University, ²경희대학교 전자정보융합공학과)

E10.04* [13:36 - 13:48]

하이브리드 슈퍼커패시터응용을 위한 중공 코어를 갖춘 니켈/코발트 탄화물 나노입자의 제작 및 특성 / SHAIK Junied Arbaz², BHIMANABOINA Ramulu², EDUGULLA Girija Shankar², MANCHI

Nagaraju², AMPASLA Surya Kiran², YU Jae Su^{*1,2} (¹Department of Electronic Engineering, Kyung Hee University, ²경희대학교 전자정보융합공학과)

E10.05* [13:48 - 14:00]

수성아연이온 배터리 응용을 위한 바나딘산나트륨 전극 제작 및 특성 분석 / HARI Bandi², ASHOK Kumar Kakarla², D. Narsimulu², R. Shanthappa², WASIM Akram Syed², YU Jae Su^{*1,2} (¹Department of Electronic Engineering, Kyung Hee University, ²경희대학교 전자정보융합공학과)

E10.06* [14:00 - 14:12]

Optical Characterization of TMD/Perovskite heterostructures Using Raman and PL spectroscopy / KO Seoyeon¹, KIM Yejin¹, KWON Chan², JO Ji Eun², LEE Eunseo¹, JEONG Hyeon Jun², JEONG Mun Seok², YOON Seokhyun^{*1} (¹Department of Physics, Ewha Womans University, ²Department of Physics, Hanyang University)

[E11-te] Focus: SPACE LAB 스태브릿지 센터 사업과 물리교육의 확장

2024. 04. 25 Thursday 13:00~14:12

Room: 204

좌장: 윤혜경 춘천교육대학교

Chair: YOON Hye-Gyoung (Chuncheon National University of Education)

E11.01 [13:00 - 13:24]

Challenges and Limitations of Chosun University STAR(Science Teacher and Research Institute) Bridge Center (조선대학교 스태브릿지센터의 도전과 한계)
/ PARK Hyun Ju^{*1} (¹Chemistry Education, Chosun University)

E11.02 [13:24 - 13:48]

Suggestions for Advancing Science Education in the New Space Era (뉴스페이스 시대의 과학교육 발전을 위한 제언) / PARK SEUL-HYUN^{*1} (¹Dept. of Mechanical Engineering, Chosun University)

E11.03 [13:48 - 14:12]

Programs of Chosun University STAR Bridge Center (조선대학교 스태브릿지센터 프로그램의 특징점 및 효과)
/ SHIN Ju Ran¹, PARK Hyun Ju^{*1} (¹Chemistry Education, Chosun University)

[E12-as] Other Astrophysics

2024. 04. 25 Thursday 13:00~14:00

Room: 205

좌장: 김영민 한국천문연구원

Chair: KIM Young-Min (KASI)

E12.01* [13:00 - 13:12]

Production and Performance Test of the IceCube Upgrade Camera System / CHOI Seowon*¹

(¹Department of Physics, Sungkyunkwan University)

E12.02* [13:12 - 13:24]

Geometry Measurement using camera system for the IceCube Upgrade / SEO Minyeong*¹,

ROTT Carsten^{1,2}, CHOI Seowon¹, LEE Jiwoong¹, RODAN Steven Thomas¹, KIM Yoonyoung¹, OH Youbin¹, PARK Minje¹ (¹Department of Physics, Sungkyunkwan University, ²Department of Physics and Astronomy, University of Utah)

E12.03 [13:24 - 13:36]

First Detection and Modeling of Spatially Resolved Hydrogen Ly α Emission in TW Hya /

CHANG Seok-Jun*¹ (¹Multiphase Gas Group, Max Planck Institute for Astrophysics)

E12.04 [13:36 - 13:48]

Finding high eccentric stellar-mass black hole binaries from binary microlensing light curves /

KIM Kyungmin*¹, BAE Yeong-Bok² (¹Technology Center for Astronomy and Space Science, KASI, ²Department of Physics, Chung-Ang University)

E12.05 [13:48 - 14:00]

ENIGMA: East-Asian Network Initiative for Gravity Measurement Alliance for Dark Matter

Search / OH John J.*¹, KIM Jeong Woo², SON Edwin J.¹, KIM Whansun¹, KIM Jeong Cho¹, LEE Young Min³, KIM Byeol³, KIM Keun Young³, LEE Hyung Won¹¹, HWANG Cheinway⁴, CHENG Ching-Chung⁴, ITO Yoshihiro⁶, TANAKA Yoshiyuki⁵, SHEN Wenbin⁷, LUAN Wei⁷, HU Minzhang⁸, LIU Ziwei⁸, SUN Heping⁹, CHEN Xiaodong⁹, BAE Sangwook¹⁰, YOON Heejun¹⁰ (¹Gravity Research and Application Team, NIMS, ²Department of Geomatic Engineering, University of Calgary, ³Department of Physics and Photon Science, GIST, ⁴Department of Civil Engineering, National Yang Ming Chiao Tung University, ⁵Department of Earth and Planetary Science, University of Tokyo, ⁶Disaster Prevention Research Institute, Kyoto University, ⁷Department of Geophysics, University of Wuhan, ⁸Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Science, ⁹Institute of Seismology, China Earthquake Administration, ¹⁰Global Science Data-hub Center, KISTI, ¹¹College of AI, Inje University)

[E13-bp] Theoretical Biological Physics

2024. 04. 25 Thursday 13:00~14:12

Room: 206

좌장: 송태근 공주대학교

Chair: SONG Taegeun (Kongju National University)

E13.01 [13:00 - 13:24]

Causal Interaction Networks of Gut Microbiota Constructed Using Transfer Entropy / LEE

Julian^{*1}, KIM Junil¹, PARK Chanho¹ (¹Dept. of Bioinformatics and Life Science, Soongsil University)

E13.02* [13:24 - 13:36]

Intrinsically disordered protein (IDP) structure prediction using angle-based sampling method

/ PARK Suhyun¹, JANG Seung Hoon², MUDEDLA Satish Kumar², WU Sangwook^{*1,2} (¹Department of Physics, Pukyong National University, ²Drug Design, Pharmcadd)

E13.03* [13:36 - 13:48]

Operator Model for Evolutionary Dynamics / PARK Kangbien^{*1} (¹Physics, Yonsei University)

E13.04* [13:48 - 14:00]

Pre- and Post-Processing Techniques in Deep Learning for Natural Language Processing to

Enhance Prediction and Reduce Viral Escape Candidates / KIM Chansoo^{*1}, CHANG HYO SUK¹,

YANG David Shihyung², JEONG Cherlhyun² (¹Center for Computational Science / AI-R Dep't, KIST / UST, ²chemical & biological integrative research center, KIST)

E13.05* [14:00 - 14:12]

Improving the blind spot of the Michaelis–Menten rate law / CHAE Junghun¹, GHIM Cheol-

Min^{*1} (¹Department of Physics, UNIST)

[E14-op] Focus: New Frontiers of Light-matter Interaction in Non-Hermitian and Non-equilibrium Photonics

2024. 04. 25 Thursday 13:00~14:12

Room: 209

좌장: 신종화 한국과학기술원

Chair: SHIN Jonghwa (KAIST)

E14.01 [13:00 - 13:24]

Non-hermitian dynamics from isolated quantum systems / KIM Kun Woo^{*1} (¹Physics, Chung-

Ang University)

E14.02 [13:24 - 13:48]

Exceptional points in photonic band structure of van der Waals grating layers / GONG Su-Hyun^{*1} (¹Department of Physics, Korea University)

E14.03 [13:48 - 14:12]

Classical and quantum electrodynamics of photonic temporal crystals / PARK Jagang^{*1}
(¹Department of Electrical Engineering and Computer Sciences, University of California Berkeley, USA)

[E15-qu] Pioneer: Coherent Quantum Control and Quantum Computing II

2024. 04. 25 Thursday 13:00~14:12

Room: 301

좌장: **홍창기** 와이즈만연구소

Chair: HONG Changki (Weizmann Institute)

E15.01 [13:00 - 13:24]

Development of a Scalable Quantum Computing System Based on Trapped Ions / KIM Taehyun^{*1,2,3,4,5} (¹Computer Science and Engineering, Seoul National University, ²Automation and System Research Institute, Seoul National University, ³Inter-university Semiconductor Research Center, Seoul National University, ⁴Institute of Computer Technology, Seoul National University, ⁵Institute of Applied Physics, Seoul National University)

E15.02 [13:24 - 13:48]

Trapped-ion based Quantum Computer toward scalable Quantum entanglement / CHOI Taeyoung^{*1} (¹Department of Physics, Ewha Womans University)

E15.03 [13:48 - 14:12]

Toward robust multi-qubit operations of spin qubits in silicon / KIM Dohun^{*1} (¹Department of Physics and Astronomy, Seoul National University)

Session F

[F1-pa] Pioneer : Forward Physics at LHC II

2024. 04. 25 Thursday 14:24~15:36

Room: 101

좌장: 김영균 광주교육대학교

Chair: KIM Yeong Gyun (Gwangju National University of Education)

F1.01 [14:24 - 14:48]

Upgrade Plan of the SND@LHC experiment at CERN / DE LELLIS Giovanni^{*1} (¹Physics, University of Naples "Federico II", Italy)

F1.02 [14:48 - 15:12]

FASER experiment and performances of neutrino detectors with nuclear emulsion detector / SATO Osamu^{*1} (¹Physics, Nagoya University, Japan)

F1.03 [15:12 - 15:36]

Physics with forward neutrinos at the LHC / JEONG Yu Seon^{*1} (¹High Energy Physics Center, Chung-Ang University)

[F2-or] 정책위원회 세션(The Lecture of the Policy Committee in KPS)

2024. 04. 25 Thursday 14:24~16:12

Room: 102

좌장: 정문석 한양대학교

Chair: JEONG Mun Seok (Hanyang University)

F2.01 [14:24 - 16:12]

정책위원회 강연-연구자의 창업: Startups for Freedom of Innovation and Impactful Research / 차상균^{*1} (¹ 서울 데이터사이언스대학원)

[F3-nu] Focus: Early-Stage Research at RAON II

2024. 04. 25 Thursday 14:24~16:00

Room: 103

좌장: 안성훈 기초과학연구원

Chair: AHN Sunghoon(Tony) (IBS)

F3.01 [14:24 - 14:48]

Study on nuclear charge radii of neutron-deficient nuclei / MUN Myeong-Hwan^{*1} (¹Department of Physics and Origin of Matter and Evolution of Galaxies (OMEG) Institute, Soongsil University)

F3.02 [14:48 - 15:12]

Advancements in Nuclear Reaction Rates for Nuclear Astrophysics: Reinvestigation of Gamow Factor and Electron Screening Effects. / HWANG Eunseok^{*1}, CHEOUN Myung-Ki¹, JANG Dukjae²

(¹physics, Soongsil University, ²School of Physics, and International Research Center for Big-Bang Cosmology and Element Genesis, Beihang University)

F3.03 [15:12 - 15:36]

Study on the suppression of elastic scattering of exotic nuclei using an extended optical model. / HEO Kyoungsu^{*1} (¹Physics, Soongsil University)

F3.04 [15:36 - 16:00]

Sensitivity study of r-process nucleosynthesis to the nuclear reaction / CHOI Yong-Beom¹, LEE Chang-Hwan², KIM Kyungil³, KIM Youngman⁴ (¹Center for Innovative Physicist Educational and Research, Pusan National University, ²Department of Physics, Pusan National University, ³Institute for Rare Isotope Science, IBS, ⁴Center for Exotic Nuclear Studies, IBS)

[F4-ap] Focus: Light-Matter Interaction in Emerging 2D Materials II

2024. 04. 25 Thursday 14:24~16:00

Room: 104

좌장: **김지완** 군산대학교

Chair: KIM Jiwan (Kunsan National University)

F4.01 [14:24 - 14:48]

Exciton physics in 2D semiconductors: Insights from high magnetic fields / CHOI Junho^{*1} (¹Department of Physics, Kyung Hee University)

F4.02 [14:48 - 15:12]

Manipulations of exciton-plasmon interactions in 2D semiconductor-based plasmonic hybrids and their applications / LEE Hyun Seok^{*1} (¹Department of Physics, Chungbuk National University)

F4.03 [15:12 - 15:36]

Waveguide modes in two-dimensional materials / LEE Myungjae^{*1} (¹Department of Materials Science and Engineering, Seoul National University)

F4.04 [15:36 - 16:00]

Defect Removal of 2D Semiconductors by Fixating Chemisorbed Oxygen Molecules via h-BN Encapsulations / CHO Chang-Hee^{*1} (¹Department of Physics and Chemistry, DGIST)

[F5-ap] Oxide and Energy

2024. 04. 25 Thursday 14:24~15:48

Room: 105

좌장: 옥종목 부산대학교

Chair: OK Jong Mok (Pusan National University)

F5.01* [14:24 - 14:36]

Study of optoelectronic properties in food dye heterojunction amorphous In-Ga-Zn-Oxide phototransistors / YOUNGCHUN Jo¹, KANG Haeyong^{*1}, LEE Hyunkyung¹, LEE Hyeonseop¹, JEON Jinho¹, KIM Kanghyun² (¹Department of Physics, Pusan National University, ²Display, Samsung)

F5.02* [14:36 - 14:48]

Nanoscale Investigation of the Effect of Annealing Temperature on the Polarization Switching Dynamics of Hf_{0.5}Zr_{0.5}O₂ Thin Films / AN Sang Won¹, BAE Seong Bin¹, KIM Beomjun¹, KIM Yoon Ki¹, KIM Jaeseung¹, JUNG Taehyun¹, LEE Jaeheon¹, LEE Sang Woo¹, PARK Yu Bin¹, KIM Hyunjung¹, YOO Hyobin¹, YANG Sang Mo^{*1} (¹Department of Physics, Sogang University)

F5.03* [14:48 - 15:00]

Metal-Insulator Transition Characteristics Controllable by Designing Nanoscale Doping Profiles in Vanadium Dioxide Thin Films / CHOI Eunji¹, AHN Sehyeon¹, SHIN Eunbi¹, LEE Jaemin¹, KO Changhyun^{*1,2,3} (¹Department of Applied Physics, Sookmyung Women's University, ²Department of Materials Physics, Sookmyung Women's University, ³Institute of Advanced Materials and Systems, Sookmyung Women's University)

F5.04* [15:00 - 15:12]

Two-Dimensional Correlation Spectroscopic Analysis of CoNb₂O₆ / PARK Joohee¹, KO Sojeong¹, JIN Qiu¹, CHO Hanseul¹, LEE Songhee², BAE Soungmin³, KIM Myunghwa², YOON Seokhyun^{*1} (¹Department of Physics, Ewha Womans University, ²Department of Chemistry and Nanoscience, Ewha Womans University, ³Institute for Materials Research, Tohoku University)

F5.05* [15:12 - 15:24]

Enhancing Kesterite Solar Cell Efficiency via Dual Treatment Approach / OTGONTAMIR Namuundari¹, ENKHBAT Temujin¹, ENKHBAYAR Enkhjargal¹, SONG Soomin², KIM SeongYeon³, HONG Tae Ei¹, KIM JunHo^{*1,4,5} (¹Incheon National University, ²Photovoltaic Laboratory, Korea Institute of Energy Research, ³Division of Energy Technology, Daegu Gyeongbuk Institute of Science and Technology, ⁴Global Energy Research Center for Carbon Neutrality, Incheon National University, ⁵Department of Intelligent Semiconductor Engineering, Incheon National University)

F5.06 [15:24 - 15:36]

Structural and Piezoelectric Properties of Hydrothermally Growth Bi_{0.5}(Na,K)_{0.5}TiO₃ Films / BU Sang Don^{*1}, KIM Eun-Young¹ (¹Department of Physics, Jeonbuk National University)

F5.07 [15:36 - 15:48]

Augmented Triboelectric Output via Combining Photoinduced Carriers and Ferroelectric Dipole of Photoactive $g\text{-C}_3\text{N}_4\text{@P(VDF-TrFE)}$ Composite / KUMAR Dheeraj¹, JIN Dawoon¹, JUNG Jong Hoon^{*1} (¹Department of Physics, Inha University)

[F6-st] Nonequilibrium Systems

2024. 04. 25 Thursday 14:24~15:48

Room: 106

좌장: **이주연** 부산대학교

Chair: Yi Ju Yeon (Pusan National University)

F6.01 [14:24 - 14:36]

Thermodynamic constraints on kinetic perturbations of potential-free driven diffusions / CHUN Hyun-Myung^{*1}, GAO Qi², HOROWITZ Jordan^{2,3,4} (¹School of Physics, KIAS, ²Department of Physics, University of Michigan, Ann Arbor, ³Department of Biophysics, University of Michigan, Ann Arbor, ⁴Center for the Study of Complex Systems, University of Michigan, Ann Arbor)

F6.02* [14:36 - 14:48]

Constructing a unified hierarchical relationship among thermodynamic inequalities / KWON Euijoon¹, PARK Jong-Min^{2,4}, LEE Jae Sung³, BAEK Yongjoo^{*1} (¹Department of Physics and Astronomy, Seoul National University, ², Asia Pacific Center for Theoretical Physics, ³Department of Physics, Postech, ⁴School of Physics, Korea Institute for Advanced Study)

F6.03* [14:48 - 15:00]

Investigating Measurement-Feedback Errors in Quantum Carnot Information Engines / CHO Doohyeong¹, JEONG Hawoong^{*1} (¹Physics Department, KAIST)

F6.04 [15:00 - 15:12]

First Passage Time of a diffusive particle in compartmentalized media / XAVIER DURANG^{*1}, JEON Jae-Hyung¹ (¹Department of Physics, POSTECH)

F6.05* [15:12 - 15:24]

Stochastic thermodynamics of a fractional Langevin equation / LIM Chan¹, DURANG Xavier¹, JEON Jae-Hyung^{*1,2} (¹Department of Physics, POSTECH, ², Asia-Pacific Center for Theoretical Physics(APCTP))

F6.06* [15:24 - 15:36]

Kovacs-like relaxation of Brownian particle in active bath / BANG Sehoon^{*1}, GHIM Cheol-Min¹
(¹Department of Physics, UNIST)

F6.07* [15:36 - 15:48]

Deep Learning as a Tool for Decoding Anomalous Diffusion: Insights from Grad-CAM Applications / BAE Jaeyong¹, BAEK Yongjoo^{*3}, JEONG Hawoong^{*1,2} (¹Physics Department, KAIST, ²Center for Complex Systems, KAIST, ³Department of Physics and Astronomy, Seoul National University)

[F7-co] Pioneer: Recent advancement in XFEL and Synchrotron Radiation Science

2024. 04. 25 Thursday 14:24~16:00

Room: 107

좌장: **김현정** 서강대학교

Chair: KIM Hyunjung (Sogang University)

F7.01 [14:24 - 14:48]

Multiscale Imaging using Ultrafast Dark-Field X-ray Microscopy / DRESSELHAUS-MARAIS Leora^{*1} (¹Materials Science and Engineering, Stanford University, USA)

F7.02 [14:48 - 15:12]

Ultrafast lattice control of SrRuO₃/SrTiO₃ superlattices / RULI Fardiman¹, RAZAQ Dhawud Sabilur¹, HOANG Thu-Thuy¹, CHUN Sae Hwan², JAIN Megha¹, GAO Hongchen¹, HWANG Jihyeon¹, JEONG Seunggyo³, CHOI Woo Seok³, BANG JunHyeok¹, KIM Kyungwan^{*1} (¹Department of Physics, Chungbuk National University, ²PAL-XFEL Beamline Division, Pohang Accelerator Laboratory, ³Department of Physics, Sungkyunkwan University)

F7.03 [15:12 - 15:36]

Direct observation of nanoparticle melting at femtosecond and nanometer scale with the XFEL / SONG Changyong^{*1,2}, HWANG Junha^{1,2}, SHIN Jaeyong³, LEE Sung Yun^{1,2}, PARK Eunyong^{1,2}, NAM Daewoong³, KIM Sangsoo³ (¹Physics, POSTECH, ²Center for Ultrafast Science on Quantum Matter, Max Planck POSTECH Korea Research Initiative, ³Pohang Accelerator Laboratory)

F7.04 [15:36 - 16:00]

Ultrafast distorted domain dynamics in SrTiO₃ Nanocrystals by Time-resolved Bragg Coherent X-ray Diffraction Imaging / HA Sung Soo¹, CHOI Sungwook¹, KIM Jaeseung¹, NAWAZ Muhammad Mahmood¹, OH Jiseong¹, YONG Isaac¹, KIM Jooheun¹, DEVI Uma¹, CHA Wonsuk², SONG Sanghoon³, KIM Sunam⁴, EOM Intae⁴, PARK Jaeku⁴, NAM Daewoong⁴, CHUN Sae Hwan⁴, KANG Jinback⁴, KIM Hyunjung^{*1} (¹Department of Physics, Sogang University, ²APS, Argonne

National Laboratory, USA, ³SLAC national accelerator Laboratory, Linac Coherent Light Source, USA, ⁴PAL-XFEL, PAL)

[F8-co] Focus: Unconventional Physical Phenomena in Symmetry-engineered Functional Oxides

2024. 04. 25 Thursday 14:24~16:00

Room: 108

좌장: **오윤석** 울산과학기술원

Chair: OH Yoon Seok (UNIST)

F8.01 [14:24 - 14:48]

Flexoelectric polarizing and control of a ferroelectric metal phase of SrRuO₃ thin films / PENG

Wei^{1,2}, PARK Se Young^{*3,4,5}, ROH Chang Jae^{1,2,6}, MUN Junsik^{2,7}, JU Hwiin⁶, KIM Jinkwon^{1,2}, KO Eun Kyo^{1,2}, LIANG Zhengguo⁸, HAHN Sungsoo^{1,2}, ZHANG Jinfeng⁸, SANCHEZ Ana M.⁹, WALKER David⁹, HINDMARSH Steven⁹, SI Liang¹⁰, JO Yongjin¹¹, JO Yongjoo¹², KIM Tae Heon¹¹, KIM Changyoung^{1,2}, WANG Lingfei⁸, KIM Miyoung^{2,7}, LEE Jong Seok⁶, NOH Tae Won^{1,2}, LEE Daesu^{12,13} (¹Department of Physics and Astronomy, Seoul National University, ²Center for Correlated Electron Systems, Institute for Basic Science, ³Department of physics, Soongsil University, ⁴ Origin of Matter and Evolution of Galaxies (OMEG) Institute, Soongsil University, ⁵Integrative Institute of Basic Sciences, Soongsil University, ⁶Department of Physics and Photon Science, GIST, ⁷Department of Materials Science and Engineering and Research Institute of Advanced Materials, Seoul National University, ⁸Hefei National Research Center for Physical Sciences at Microscale, university of science and technology of china, ⁹Department of Physics, University of Warwick, ¹⁰Institut für Festkörperphysik, TU Wien, ¹¹Department of Physics and Energy Harvest-Storage Research Center (EHSRC), University of Ulsan, ¹²Department of Physics, Pohang University of Science and Technology (POSTECH), ¹³APCTP, Asia-Pacific Center for Theoretical Physics(APCTP))

F8.02 [14:48 - 15:12]

Synthesis, morphological control, and properties of free standing ferroelectric PZT nanotubes

/ BU Sang Don^{*1} (¹Department of Physics, Jeonbuk National University)

F8.03 [15:12 - 15:36]

Atomic Layer Deposition of Epitaxial Ferroelectric Hf_{0.5}Zr_{0.5}O₂ Thin Film / CHAE Seung Chul^{*1}

(¹Dept. of Physics Education, Seoul National University)

F8.04 [15:36 - 16:00]

Engineering Magnetic Anisotropy in Freestanding Multiferroic Oxide Membranes / KANG

Kyeong Tae^{*1} (¹Department of Physics, Kyungpook National University)

[F9-at] AMP III - Quantum Information: Simulations and Computations I

2024. 04. 25 Thursday 14:24~16:12

Room: 201

좌장: 권혁준 고등과학원

Chair: KWON HYUKJOON (KIAS)

F9.01 [14:24 - 15:00]

Development of a scalable superconducting quantum processor in SKKU : a progress report part III / CHONG Yonuk^{*1} (¹Nano Engineering, Sungkyunkwan University)

F9.02* [15:00 - 15:12]

Analytical approach for ultrafast control of superconducting qubits with weak anharmonicity / AHN Seongjin^{*1}, MOSKALENKO Andrey S.¹ (¹Department of Physics, KAIST)

F9.03 [15:12 - 15:48]

Information-driven quantum engine with a single trapped ion / KIM Kihwan^{*1} (¹Physics, Tsinghua University)

F9.04* [15:48 - 16:00]

Single-shot Joint Parity Measurement and Quantum State Tomography of Entangled Coherent State in a Trapped Ion System / JEON Honggi^{1,2}, KANG Jiyong^{1,2}, KIM Jaeun^{1,2}, CHOI WonHyeong^{1,2}, KIM Kyunghye^{1,2}, YOU Jaehun^{1,2}, KIM Taehyun^{*1,2,3,4,5} (¹Computer Science and Engineering, Seoul National University, ²Automation and System Research Institute, Seoul National University, ³Inter-university Semiconductor Research Center, Seoul National University, ⁴Institute of Computer Technology, Seoul National University, ⁵Institute of Applied Physics, Seoul National University)

F9.05* [16:00 - 16:12]

Quantum random number generation with trapped ions / KIM Keumhyun^{*1}, LEE Hyegoo¹, KIM Myunghun¹, CHO Junhee¹, LEE Moonjoo¹ (¹Electrical engineering, POSTECH)

[F10-se] Pioneer: Physics of Si-compatible Ferroelectric Memory II

2024. 04. 25 Thursday 14:24~16:00

Room: 202

좌장: LIU Shi Westlake University

F10.01 [14:24 - 14:48]

Hafnia-based Ferroelectric Transistors for Memory and Neuromorphic Device Applications / LEE Jang-Sik^{*1} (¹Department of Materials Science and Engineering, POSTECH)

F10.02 [14:48 - 15:12]

Device Physics Strongly Correlated with Materials Chemistry in HfO₂-Based Ferroelectric Memories / PARK Min Hyuk^{*1} (1Department of Materials Science and Engineering, College of Engineering, Seoul National University)

F10.03 [15:12 - 15:36]

Hafnia-based ferroelectric materials for logic and memory: An industrial point of view / CHOE Duk-Hyun^{*1}, JO Sanghyun¹, LEE Hyangsook¹, YOO Sijung¹, LEE Hyun Jae¹, NAM Seung-Gul¹, LEE Yunseong¹, PARK Yoonsang¹, KIM Kihong¹, KIM Donghun¹, HEO Jinseong¹ (1Samsung Advanced Institute of Technology, Samsung Electronics)

F10.04 [15:36 - 16:00]

Parallel synaptic design of ferroelectric tunnel junctions for neuromorphic computing / MOON Taehwan^{*1,2,3}, LEE Hyun Jae², NAM Seunggeol², BAE Hagyoul^{2,4}, CHOE Duk-Hyun², JO Sanghyun², LEE Yun Seong², PARK Yoonsang², YANG J. Joshua³, HEO Jinseong² (1Department of Intelligence Semiconductor Engineering, Ajou University, 2Beyond Silicon Lab, Samsung Advanced Institute of Technology, 3Department of Electrical and Computer Engineering, University of Southern California, USA, 4Department of Electronic Engineering, Jeonbuk National University)

[F11-te] Physics Teaching I

2024. 04. 25 Thursday 14:24~15:36

Room: 204

좌장: **강남화** 한국교원대학교

Chair: KANG Nam-Hwa (Korea National University of Education)

F11.01 [14:24 - 14:36]

거대 언어 모델을 활용한 물리교육의 가능성과 한계 / JHO Hunkoog^{*1} (1Graduate school of education, Dankook University)

F11.02 [14:36 - 14:48]

블록기반 프로그래밍 언어를 활용한 물리 시뮬레이션 개발 / CHEONG Yong Wook^{*1} (1physics education, Gyeongsang National University)

F11.03* [14:48 - 15:00]

Automatic scoring of Free-Body Diagrams Using Object Detection / YUN Seokmin^{*1}, KWAK Hyejung², CHOI Hyukjoon³ (1Department of Physics, Daejeon Science High School, 2Division of Educational Evaluation, Korea Institute for Curriculum and Evaluation, 3Department of Physics Education, Korea National University of Education)

F11.04 [15:00 - 15:12]

물리 학습 주제의 시각화와 탐구력 향상을 위한 새로운 물리 실험 프로그램 / YOON JUN SANG^{*1}
(¹management, misodle software)

F11.05* [15:12 - 15:24]

Introduction to EinsteinPy and black hole examples for learning general relativity / HWANG In¹, PARK Inkyu^{*1} (¹University of Seoul)

F11.06 [15:24 - 15:36]

제 20 회 국제 중등과학올림피아드 문항 및 대한민국 대표단의 답안 분석 / JHUN Youngseok^{*1}, KIM Doyeong² (¹Dep. of Science Education, Seoul National University Of Education, ²Dep. of Science Education, Bangok high school)

[F12-pl] Role of Public and Private Sectors for Nuclear Fusion

2024. 04. 25 Thursday 14:24~15:12

Room: 205

좌장: 정모세 포항공과대학교

F12.01 [14:24 - 15:12]

기후위기 시대의 핵융합에너지 가속상용화 / LEE Gyung-Su¹, CHUNG Moses^{*2} (¹ 주식회사 인에이블퓨전, EnableFusion Inc., ²Department of Physics, UNIST)

[F13-as] Focus: New Perspectives of Quantum Cosmology I

2024. 04. 25 Thursday 14:24~15:36

Room: 206

좌장: **염동한** 부산대학교

Chair: YEOM Dong-han (Pusan National University)

F13.01 [14:24 - 15:00]

Emergent Spacetime and Cosmic Inflation / YANG Hyun Seok^{*1} (¹Department of Physics and Photon Science, GIST)

F13.02 [15:00 - 15:36]

Imaging a semi-classical horizonless compact object with strong redshift / CHEN Che-Yu^{*1}
(¹iTHEMS, RIKEN, Japan)

[F14-op] Focus: Multidimensional Oxide Photonics

2024. 04. 25 Thursday 14:24~16:12

Room: 209

좌장: 안영환 아주대학교

Chair: AHN Yeong Hwan (Ajou University)

F14.01 [14:24 - 14:48]

Intersubband polaritonic metasurfaces / LEE Jongwon^{*1} (¹Department of Electrical Engineering, UNIST)

F14.02 [14:48 - 15:12]

Ultrastrong photon-phonon coupling in nano-slots and metasurfaces / JEONG Jeeyoon^{*1} (¹Department of Physics, Kangwon National University)

F14.03 [15:12 - 15:36]

Oxide heterostructures for photonics / SOHN Changhee^{*1} (¹Department of Physics, UNIST)

F14.04 [15:36 - 16:00]

Ultrafast polarization switching of the ferroelectric polarization in hafnium–zirconium oxide thin film combined with nano-cavity / PARK Hyeong-Ryeol^{*1} (¹Department of Physics, UNIST)

F14.05* [16:00 - 16:12]

Polarization-optimized tip-enhanced strong coupling of single quantum dots / BAE Jinhyuk¹, LEE Hyeongwoo¹, KIM Byoung Jae², JOO Huitae¹, WOO Ju Young³, KIM Sujeong¹, JEONG Sohee², LIM Jaehoon², PARK Kyoung-Duck^{*1} (¹Physics, POSTECH, ²Energy Science, Sungkyunkwan University, ³Digital Transformation R&D Department, KITECH)

[F15-qu] Pioneer: Trends in Quantum Sensing Technologies I

2024. 04. 25 Thursday 14:24~16:12

Room: 301

좌장: 이동훈 고려대학교

Chair: LEE Donghun (Korea University)

F15.01 [14:24 - 15:00]

Sensing Modalities with Mid-infrared Undetected Photons / PEARCE Emma^{*1}, VANSELOW Aron², KAUFMANN Paul¹, ZORIN Ivan³, HEISE Bettina³, KVIATKOVSKY Inna¹, GEWERS Felipe¹, CHRZANOWSKI Helen M⁴, RAMELOW Sven¹ (¹Institut für Physik, Humboldt-Universität zu Berlin, Germany, ²Département de Physique, Ecole Normale Supérieure de Paris, France, ³Research Center for Non-Destructive Testing GmbH, Austria, ⁴Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany)

F15.02 [15:00 - 15:36]

Enhancing magnetic field sensitivity in a solid-state quantum sensor / OH Sangwon^{*1}

(¹Department of Physics, Ajou University)

F15.03 [15:36 - 16:12]

Using NV center to study material properties / YANG Sen^{*1} (¹Department of Physics, The Hong

Kong University of Science and Technology, China)

Session G

[G1-pa] Phenomenology I

2024. 04. 25 Thursday 16:24~18:12

Room: 101

좌장: **신서동** 전북대학교

Chair: SHIN Seodong (Jeonbuk National University)

G1.01 [16:24 - 16:36]

The Beam-Dump Ceiling, Its Implication, and a Portable Experiment / KIM Doojin¹, KIM

Hyunyoung¹, PARK Jong-Chul^{*2}, YU Jaehoon³ (¹Department of Physics and Astronomy, Texas A&M University, ²Department of Physics, Chungnam National University, ³Department of Physics, University of Texas at Arlington)

G1.02* [16:36 - 16:48]

Neutrino potal Affleck-Dine bayogenesis / LEE Chang Hyeon^{*1}, CHANG Jae Hyeok^{2,4}, JEONG

Kwang Sik³, SHIN Chang Sub¹ (¹department of physics, Chungnam National University, ²Theory Division, Fermilab, ³Department of Physics, Pusan National University, ⁴Department of Physics, University of Illinois at Chicago)

G1.03* [16:48 - 17:00]

Detection of narrow resonance decay of axion dark matter / CHO Wonsub¹, CHOI Ki-Young¹,

JOH Junghoon^{*1} (¹Department of Physics, Sungkyunkwan University)

G1.04* [17:00 - 17:12]

Muon g-2 in SUSY SU(5) GUTs with gauge-mediated SUSY breaking / LEE Hyun Min^{*1}, SIM

SungBo¹ (¹Department of Physics, Chung-Ang University)

G1.05* [17:12 - 17:24]

Muon g-2 and Proton Lifetime in SUSY with Split Superpartners / LEE Hyun Min^{*1}, SIM Sungbo¹, KIM Seongsik¹ (¹Department of Physics, Chung-Ang University)

G1.06* [17:24 - 17:36]

PQ inflation at the pole / LEE Hyun Min^{*1}, MENKARA Adriana¹, SEONG Myeong-Jung¹, SONG Jun-Ho¹ (¹Department of Physics, Chung-Ang University)

G1.07* [17:36 - 17:48]

Supersymmetry with an additional U(1) gauge symmetry / LEE Hye-Sung^{*1}, BATELL Brian², LEE Jiheon¹, KIM Yechan¹ (¹Department of Physics, KAIST, ²Department of physics, University of Pittsburgh)

G1.08* [17:48 - 18:00]

Gravitational Wave Production with Primordial Black Hole / LKHAGVADORJ Erdenebulgan^{*1}, CHOI Ki-Young¹, MAHAPATRA Satyabrata¹ (¹Department of Physics, Sungkyunkwan University)

G1.09* [18:00 - 18:12]

Non-gravitational signals of dark energy under a gauge symmetry / KANETA Kunio², LEE Hye-Sung^{*1}, LEE Jiheon¹, YI Jaeok¹ (¹Department of Physics, KAIST, ²Department of Physics, Osaka University)

[G2-or] 전국물리학 분야 학과(부)장 토론회(Open forum of the deans in Physics field)

2024. 04. 25 Thursday 16:24~18:12

Room: 102

좌장: **이재웅** 아주대학교

Chair: LEE Jae-Ung (Ajou University)

G2.01 [16:24 - 18:12]

전국 물리학 분야 학과(부)장 토론회 / 이재웅^{*1} (¹ 아주대학교 물리학과)

[G3-nu] Focus: Early-Stage Research at RAON III

2024. 04. 25 Thursday 16:24~18:24

Room: 103

좌장: **안정근** 고려대학교

Chair: AHN Jung Keun (Korea University)

G3.01 [16:24 - 16:48]

Laser spectroscopy applications at RAON / PARK Sung Jong^{*1}, LIM Chaeyoung^{1,2}, TSHOO

Kyoungho¹, HAM Cheolmin¹, KIM Dong Geon^{1,3}, KWAK Donghyun^{1,4}, PYEUN Seong Jae¹, SHIN Taeksu¹ (¹Institute for Rare Isotope Science, IBS, ²Department of Accelerator Science, Korea University, Sejong, ³Department of Nuclear Engineering, Hanyang University, ⁴Department of Physics, UNIST)

G3.02 [16:48 - 17:12]

CENS research plan at KoBRA beamline for first RAON user experiments. / KIM Yung Hee^{*1}
(¹Center for Exotic Nuclear Studies, IBS)

G3.03 [17:12 - 17:36]

Electron Beam Ion Source and Its Usage on Highly Charged Ion Study / PARK SungNam¹, SHIN Bokkyun², HAN JeHwan³, CHUNG Moses^{*4} (¹KRISS, ²Pohang Accelerator Laboratory, ³Department of Physics, UNIST, ⁴POSTECH)

G3.04 [17:36 - 18:00]

Hunting for Exotic Hadrons at J-PARC / KIM Shin Hyung^{*1} (¹Department of Physics, Korea University)

G3.05 [18:00 - 18:12]

ANCs of the bound states of oxygen-16 deduced from elastic alpha-carbon-12 scattering data / ANDO Shung-Ichi^{*1} (¹Department of Information Display, Sun Moon University)

G3.06 [18:12 - 18:24]

Development of multi-channels silicon strip sensors for nuclear physics studies / LEE Hye Young^{*1} (¹IBS)

[G4-ap] Focus: Computational Physics – Application of Machine Learning and Quantum Computing

2024. 04. 25 Thursday 16:24~18:00

Room: 104

좌장: **임성현** 울산대학교

Chair: RHIM Sonny (University of Ulsan)

G4.01 [16:24 - 16:48]

Machine-Learning-Guided Empirical Formula and Materials Design / KIM Sooran^{*1}
(¹Department of Physics Education, Kyungpook National University)

G4.02 [16:48 - 17:12]

Identifying Noncollinear Magnetic Orderings with Machine Learning: Utilizing Spin-Insensitive Spectral Properties / GO Ara^{*1} (¹Department of Physics, Chonnam National University)

G4.03 [17:12 - 17:36]

Development of multiscale computational system for materials design / TRAN Viet Dung¹, PARK Seongboo¹, PARK Jung Gun¹, SHIN Young-Han^{*1} (¹Department of Physics, University of Ulsan)

G4.04 [17:36 - 18:00]

The quantum state over time function is unique / LIE Seok Hyung^{*1,2}, NG Nelly H. Y.² (¹Department of Physics, UNIST, ²SPMS, Nanyang Technological University)

[G5-ap] Focus: Recent Research on Physical Properties of Halide Perovskites and Their Applications

2024. 04. 25 Thursday 16:24~18:00

Room: 105

좌장: 김지영 한국과학기술연구원

Chair: KIM Gee Yeong (Korea Institute of Science and Technology)

G5.01 [16:24 - 16:48]

Two-photon resonant Raman scattering via the biexciton level in two-dimensional halide perovskite (C₆H₅C₂H₄NH₃)₂PbI₄ / JANG Joon Ik^{*1} (¹Physics, Sogang University)

G5.02 [16:48 - 17:12]

Thin Film Control in Anti-Solvent-Free Process for Metal-Halide Perovskite Solar Cells / KIM Hyo Jung^{*1} (¹School of Chemical Engineering, Pusan National University)

G5.03 [17:12 - 17:36]

Surface and interface engineering for reduced non-radiative recombination in halide perovskite / LEE Hyun Bok^{*1} (¹Department of Physics, Kangwon National University)

G5.04 [17:36 - 18:00]

Vacuum Processable Perovskite Solar Cells / PARK HYESUNG^{*1} (¹KU-KIST Graduate School of Converging Science and Technology, Korea University)

[G6-st] Complex Systems I

2024. 04. 25 Thursday 16:24~18:24

Room: 106

좌장: 이덕선 고등과학원

Chair: LEE Deok-Sun (KIAS)

G6.01* [16:24 - 16:36]

Role of Talent Configuration Properties in Wealth Dynamics / HUR Jaeseok¹, HA Meesoon^{*2}, JEONG Hawoong¹ (¹Physics, KAIST, ²Physics Education, Chosun University)

G6.02 [16:36 - 16:48]

Teleconnection Phenomena in Climate Network via Sea Surface Temperature Datasets / LEE Eun^{*1}, KIM Heetae², LEE Daekyung¹ (¹Scientific Computing, Pukyong National University, ²Department of Energy Engineering, KENTECH)

G6.03 [16:48 - 17:00]

Understanding the Evolution of Western Painting Art Using the Components of the Stable Diffusion Model / KIM Jin¹, LEE Byunghwee², YOU Taekho^{2,3}, YUN Jinhyuk^{*4} (¹Department of Intelligent Semiconductors, Soongsil University, ²Luddy School of Informatics, Indiana University, ³Institution for Social Data Science, Pohang University of Science and Technology (POSTECH), ⁴School of AI Convergence, Soongsil University)

G6.04 [17:00 - 17:12]

Exact solutions of the simplified March model for organizational learning / JO Hang-Hyun^{*1} (¹Department of Physics, The Catholic University of Korea)

G6.05 [17:12 - 17:24]

Evolution of cooperation with time-varying tags and heterogeneous immigration dynamics / JEONG Wonhee^{*1}, HADZIBEGANOVIC Tarik², YU Unjong³ (¹Department of Physics, Gyeongsang National University, ²Department of Psychology, University of Graz, ³Department of Physics and Photon Science, GIST)

G6.06* [17:24 - 17:36]

Exact Cluster Dynamics of Indirect Reciprocity in Complete Graphs / BAEK Seung Ki^{*1}, BAE Minwoo² (¹Department of Scientific Computing, Pukyong National University, ²Department of Physics, Pukyong National University)

G6.07* [17:36 - 17:48]

Predator Hunting Behaviors Through Simple Neural Network Models / LEE Nahyeon¹, JEONG Hyeong-Chai^{*1} (¹Department of Physics and Astronomy, Sejong University)

G6.08* [17:48 - 18:00]

Nash Equilibria in the Semifinalists' Dilemma Game with Asymmetric Stamina / GWON Eunseo¹, JEONG Hyeong-Chai^{*1} (¹Department of Physics and Astronomy, Sejong University)

G6.09 [18:00 - 18:12]

Spatially explicit population modeling with habitat preferential movement of Glis glis (Edible dormouse) / CHOI Jeehye², LEE KyoungEun³, LEE Do-Hun³, MIN Byungjoon^{*1,2}, CHON Tae Soo⁴ (¹Department of Physics, Chungbuk National University, ²Research Institute for Nanoscale Science and Technology, Chungbuk National University, ³ Bureau of Conservation and Assessment Research, National Institute of Ecology, ⁴Research Institute of Computer, Information and Communication, Busan National University)

G6.10 [18:12 - 18:24]

The Role of Structural Heterogeneity in Large Ecosystems / PARK Jong Il¹, LEE Deok-Sun², LEE Sang Hoon³, PARK Hye Jin^{*1} (¹Department of Physics, Inha University, ²School of Computational Sciences, KIAS, ³Department of Physics and Research Institute of Natural Science, Gyeongsang National University)

[G7-co] Focus: Hybrid Quantum Systems

2024. 04. 25 Thursday 16:24~17:36

Room: 107

좌장: 손석균 경희대학교

Chair: SON Seok-Kyun (Kyung Hee University)

G7.01 [16:24 - 16:48]

Integrating Quantum Devices for Quantum Transduction / CHA Jinwoong^{*1} (¹Quantum Technology Institute, KRISS)

G7.02 [16:48 - 17:12]

Nanophotonic platforms for quantum applications / JUNG Hojoong^{*1} (¹Center for quantum information, KIST)

G7.03 [17:12 - 17:36]

Robust One-Dimensional Transport in Topologically Non-Trivial States in Marginally Twisted Graphene / KIM Minsoo^{*1} (¹Department of Applied Physics, Kyung Hee University)

[G8-co] Focus: Unconventional Physical Phenomena in Symmetry-engineered Functional Oxides

2024. 04. 25 Thursday 16:24~18:00

Room: 108

좌장: **진형진** 부산대학교

Chair: JEEN Hyoung Jeen (Pusan National University)

G8.01 [16:24 - 16:48]

High-Resolution Crystallographic Mapping for Polycrystalline Oxide Thin Films with Deep Learning Techniques / KIM Young-Min^{*1} (¹Department of Energy Science, Sungkyunkwan University)

G8.02 [16:48 - 17:12]

Exploring hidden order and orbitals using resonant x-ray scattering / CHANG Seo Hyoung^{*1} (¹Department of Physics, Chung-Ang University)

G8.03 [17:12 - 17:36]

Solid-state catalytic hydrogen sponge effects in BaInO_{2.5} epitaxial films / LEE Shinbuhm^{*1} (¹Physics and Chemistry, DGIST)

G8.04 [17:36 - 18:00]

Engineering quantum phenomena and electronic structures on oxide interfaces / SOHN Byungmin^{*1} (¹Department of Physics, Sungkyunkwan University)

[G9-at] AMP IV - Quantum Information: Simulations and Computations II

2024. 04. 25 Thursday 16:24~18:00

Room: 201

좌장: **문한섭** 부산대학교

Chair: MOON Han Seb (Pusan National University)

G9.01 [16:24 - 17:00]

Ground state amplitude amplification / BAEK Kyunghyun^{*1} (¹Quantum Computing team, ETRI)

G9.02 [17:00 - 17:36]

Catalysis always degrades external quantum correlations / LIE Seok Hyung^{*1,2}, NG Nelly H. Y.² (¹Department of Physics, UNIST, ²SPMS, Nanyang Technological University)

G9.03* [17:36 - 17:48]

Disentanglement provides a unified estimation for quantum entropies and distances / LEE Seungwoo², SHIN Myeongjon², JEONG Kabgyun^{*1} (¹Department of Mathematical Sciences, Seoul National University, ²School of Computing, KAIST)

G9.04 [17:48 - 18:00]

Self-purification and entanglement revival in lambda matter / CHOI Mahn-Soo^{*1}, CHEN Dongni¹ (¹Department of Physics, Korea University)

[G10-se] Focus: Advanced Sensors: From Wearables to Robotics II

2024. 04. 25 Thursday 16:24~18:00

Room: 202

좌장: **오홍석** 송실대학교

Chair: OH Hongseok (Soongsil University)

G10.01 [16:24 - 16:48]

Martensitic Molecular Semiconductors for Flexible Electronics and Thin-Film Robotics /

HWANG Kyoungtae¹, JANG Jin Hyeok¹, JAGDALE Sourabh¹, RA Suyeon¹, PARK Sang Kyu^{*1}

(¹Functional Composite Materials Research Center, Institute of Advanced Composite Materials, Korea Institute of Science and Technology)

G10.02 [16:48 - 17:12]

고 내구도 스트레처블 나노섬유 기반 전자피부형 소자 / LEE Sungwon^{*1} (¹Physics & Chemistry, DGIST)

G10.03 [17:12 - 17:36]

Sensors and Actuators for Soft Robotic Applications / HA Minjeong^{*1} (¹School of Materials Science and Engineering, Gwangju Institute of Science and Technology)

G10.04 [17:36 - 18:00]

On-skin Bimodal Tactile Sensors and Intelligent Robot Hand Applications / KIM Hye Jin^{*1} (¹Intelligent Components and Sensors Research Section, ETRI)

[G11-te] Physics Teaching II

2024. 04. 25 Thursday 16:24~17:36

Room: 204

좌장: **최재혁** 전남대학교

Chair: CHOI Jaehyeok (Chonnam National University)

G11.01* [16:24 - 16:36]

고등학교 양자물리학 수업에서 교사들이 겪는 어려움

Physics teachers` challenges in teaching quantum physics / LEE Taegyong¹, KANG Nam-Hwa^{*1}

(¹Physics Education Department, Korea National University of Education)

G11.02* [16:36 - 16:48]

Developing a Conceptual framework for Narrative Physics Identity / KIM Junhee¹, IM Sungmin^{*1} (¹Department of Physics Education, Daegu University)

G11.03 [16:48 - 17:00]

물 흐름 모형과 전기 회로의 대응에 대한 중학생의 이해 / OH Won Kun^{*1}, SHIN Juhyung² (¹Dept. Physics Education, Chungbuk National University, ²Dept. Science, SeKwang Middle School)

G11.04 [17:00 - 17:12]

발뒤꿈치를 들 때 지레종류에 관한 고찰 / HEO Nam Young^{*1}, HONG Eun Jeong² (¹Exhibition & Education Bureau, Busan National Science Museum, ²Physics Education Department, Gyeongsang National University)

G11.05 [17:12 - 17:24]

전도성 테이프를 활용한 전기회로 제작 활동이 초등학생의 전기회로 이해에 미치는 영향 / KANG Eunju^{*1}, PARK Jong Ho² (¹Chinju National University of Education, ²Department of Science Education, Chinju National University of Education)

G11.06 [17:24 - 17:36]

지역기반 과학 교사교육 프로그램에 참여한 예비물리교사의 반성적 포트폴리오 분석 / CHOI Jaehyeok^{*1}, KIM Heekyong², JOUNG Yong Jae³, JO Kwang Hee⁴ (¹Department of Physics Education, Chonnam National University, ²Division of Science Education, Kangwon National University, ³Department of Science Education, Gongju National University of Education, ⁴Department of Physics Education, Chosun University)

[G12-pl] Nuclear Fusion & Accelerators and Beams

2024. 04. 25 Thursday 16:24~18:00

Room: 205

좌장: **김영철** 한국과학기술원

Chair: GHIM Young Chul (KAIST)

G12.01 [16:24 - 16:48]

Tailoring tokamak error fields to control plasma instability and transport / YANG S.M.^{*1}, PARK J.K.^{1,2}, JEON Y.M.³, LOGAN N.C.⁴, LEE J.³, HU Q.¹, LEE J.H.³, KIM S.K.¹, KIM J.W.³, LEE H.H.³, NA Y.-S.², HAHM T.S.², CHOI G.J.², SNIPES J.¹, PARK G.Y.³, KO W.H.³ (¹Princeton Plasma Physics Lab., USA, ²Department of Nuclear engineering, Seoul National University, ³Korea institute of Fusion Energy, ⁴Columbia University, USA)

G12.02 [16:48 - 17:00]

Controlling and stabilizing fusion plasmas with deep reinforcement learning / SEO Jaemin^{*1}

(¹Department of Physics, Chung-Ang University)

G12.03 [17:00 - 17:12]

Brief introduction on the history of Field-reversed configurations (FRCs) / LEE Kiyong^{*1}

(¹Fundamental Technology Research Division, KOREA INSTITUTE OF FUSION ENERGY)

G12.04 [17:12 - 17:24]

Development and diagnostics of a segmented discharged capillary gas-cell with a longitudinal down-gradient plasma / CHUNG Moses^{*1}, JEONG Junyeong¹, NAM Inhyuk²

(¹Department of Physics, UNIST, ²포항가속기연구소 4 세대 가속기 PAL-XFEL, Pohang Accelerator Laboratory)

G12.05 [17:24 - 17:36]

Korea-4GSR 부스터 싱크로트론의 에너지 램핑 스킴에 따른 빔 역학 변화 연구 / LEE Yumi^{1,2},

HWANG Ji-Gwang^{*2}, KIM Eun San¹, LEE Jaeyu³, KIM Jaehyun³ (¹Department of Accelerator Science, Korea University, Sejong, ²Gangneung Wonju National University, ³Pohang Accelerator Laboratory, Pohang Accelerator Laboratory)

G12.06 [17:36 - 17:48]

Start-to-End Particle Tracking Simulations of Hard X-ray2 beamline at the PAL-XFEL and

Future R&D Plans / KIM Seongyeol^{*1}, NAM Inhyuk¹, CHO Myung Hoon¹, HEO Hoon¹, MOON

Kook-Jin¹, SHIM Chi Hyun¹, SUNG Chang-Kyu¹, YANG HAERYONG¹ (¹PAL-XFEL, Pohang Accelerator Laboratory)

G12.07* [17:48 - 18:00]

Capacitive pick-up monitors for ion beam bunch length measurement in low energy

experimental systems at RAON. / KWAK Donghyun^{1,2}, HAM Cheolmin², KIM Gidong², KWON

Jangwon², TSHOO Kyoungho², LEE Cheongsoo², LEE Kwangbok², KIM Jaesung², LEE Jongchul³, PARK Jeonghoon³, JU Jinsik³, SHIN Taeksu², CHUNG Moses^{*1} (¹Department of Physics, UNIST, ²RISP, IBS, ³Advanced radiation technology institute, Korea atomic energy research institute)

[G13-as] Focus: New Perspectives of Quantum Cosmology II

2024. 04. 25 Thursday 16:24~17:36

Room: 206

좌장: 김형찬 한국교통대학교

Chair: KIM Hyeong-Chan (Korea National University of Transportation)

G13.01 [16:24 - 17:00]

Euclidean Wormholes and the Origin of Alpha Vacua / LIN Wei-Chen^{*1} (1Department of Physics, Pusan National University)

G13.02 [17:00 - 17:36]

Effective Theory Approach for Axion Wormholes / SHIN Chang Sub^{*1} (1Department of Physics, Chungnam National University)

[G14-op] Biophotonics + Terahertz II

2024. 04. 25 Thursday 16:24~18:24

Room: 209

좌장: **박형렬** 울산과학기술원

Chair: PARK Hyeong-Ryeol (UNIST)

G14.01 [16:24 - 16:48]

Accurate estimation of bacterial growth inhibiting zone using laser speckle imaging / KIM Donghyeok¹, LEE Jongseo², YOON Jonghee^{*2} (1Department of Energy Systems Research, Ajou University, ²Department of Physics, Ajou University)

G14.02 [16:48 - 17:12]

Non-invasive delivery of gold nanoparticles to retinal ganglion cells and its potential applications to retinal prosthesis / 박영훈, 엄경식^{*1} (1 부산대학교 전자공학과)

G14.03 [17:12 - 17:36]

Terahertz time domain spectroscopy and quantum materials / JUNG TaekSun^{*1}, KIM Jae Hoon¹ (1Department of Physics, Yonsei University)

G14.04 [17:36 - 18:00]

Driving magnetic fields by nonlinear circular plasmons in graphene disks / HAN Jeongwoo^{*1,2} (1Research Institute For Next Generation Energy Science, Ajou University, ²Department of Physics, University of Duisburg-Essen)

G14.05* [18:00 - 18:12]

Creation of single photon emitters and their ensembles in hexagonal Boron Nitride / KARANKOVA Sofiya^{1,2}, LEE Yeunjeong^{1,3}, LEE Young Gie^{4,5}, JANG Chaun⁴, KIM Young Duck^{5,6}, SONG Yong-Won^{1,2}, MOON Hyowon^{*1,2} (1Center for Optoelectronic Devices and Materials, KIST, ²Division of Nanomaterials Science and Engineering, UST, ³Department of Physics, Korea University, ⁴Center for Spintronics, KIST, ⁵Department of Physics, Kyung Hee University, ⁶Department of Information Display, Kyung Hee University)

G14.06 [18:12 - 18:24]

생체조직계면에서의 테라헤르츠 임피던스 매칭 개선 연구 / OH Seung Jae^{*1}, MAENG Inhee¹, BARK Hyeon Sang², JI Young Bin², RYU Han-Cheol³ (¹YUHS-MCRI, Yonsei University Health System, ²APRI, GIST, ³Division of Artificial Intelligence Convergence, Sahmyook University)

[G15-qu] Pioneer: Coherent Quantum Control and Quantum Computing III

2024. 04. 25 Thursday 16:24~18:12

Room: 301

좌장: **최태영** 이화여자대학교

Chair: CHOI Taeyoung (Ewha Womans University)

G15.01 [16:24 - 17:00]

Approaches to scaling trapped ion quantum processors / HOME Jonathan Paul^{*1} (¹Department of Physics, ETH Zürich, Switzerland)

G15.02 [17:00 - 17:36]

Coherent hole-photon interface in planar Ge for strong charge-photon coupling and resolving Wigner molecule states / JANG Wonjin^{*1} (¹Institute of Physics, EPFL)

G15.03 [17:36 - 18:12]

Demonstration of fault-tolerant Steane quantum error correction / POSTLER Lukas¹, BUTT Friederike^{2,3}, POGORELOV Ivan¹, MARCINIAK Christian D.¹, HEUBEN Sascha^{2,3}, BLATT Rainer^{1,4,5}, SCHINDLER Philipp¹, RISPLER Manuel^{*2,3}, MÜLLER Markus^{2,3}, MONZ Thomas^{1,4} (¹Institut für Experimentalphysik, Universität Innsbruck, Austria, ²Institute for Quantum Information, RWTH Aachen University, Germany, ³Institute for Theoretical Nanoelectronics (PGI-2), Forschungszentrum Jülich, Germany, ⁴Alpine Quantum Technologies, Alpine Quantum Technologies, Austria, ⁵Institut für Quantenoptik und Quanteninformation, Österreichische Akademie der Wissenschaften, Austria)

Session H

[H1-pa] Accelerator IV

2024. 04. 26 Friday 08:30~10:18

Room: 101

좌장: **문동호** 전남대학교

Chair: MOON Dong Ho (Chonnam National University)

H1.01* [08:30 - 08:42]

System Test for the Endcap Timing Layer of the CMS MIP Timing Detector / MOON Chang-Seong^{*1}, KIM Taiwoo¹ (¹Department of Physics, Kyungpook National University)

H1.02* [08:42 - 08:54]

Development of a system for IV and CV measurements of large-array LGADs of CMS MIP Timing Detector (MTD) / YANG Un-ki^{*1}, YOO JaeHyeok², LEE KyungMin², HONG ByungJin², KIM Junho¹, MOON Chang-Seong³ (¹Department of physics and astronomy, Seoul National University, ²Department of physics and astronomy, Korea University, ³Department of physics and astronomy, Kyungpook National University)

H1.03* [08:54 - 09:06]

Local Position Estimation in BTL / YOO Jae Hyeok^{*1}, HWANG Haeyun¹ (¹Physics, Korea University)

H1.04 [09:06 - 09:18]

Completion of CMS iRPC Upgrade and New R&Ds for Fast Timing Gaseous Detectors / LEE Kyong Sei^{*1}, JO Youngmin¹, KANG Minho¹ (¹Center for Extreme Nuclear Matters, Korea University)

H1.05 [09:18 - 09:30]

Roles and activities of Korea-CMS to build new ME0 station at LHC-CMS / PARK Inkyu^{*1,2}, KIM TAE JEONG³, YANG Un-ki⁴, LEE Jason Sang Hun^{1,2}, KIM Dong Hyun^{*2,3}, JEONG Yongho^{2,3} (¹University of Seoul, ² Natural Science Research Institute, University of Seoul, ³Korea-CMS Center, Hanyang University, ⁴Department of Physics & Astronomy, Seoul National University)

H1.06* [09:30 - 09:42]

ME0 Track Segment reconstruction performance study / PARK Inkyu^{*1}, HEO WooHyeon¹, LEE Jason Sang Hun¹, WATSON Ian James¹, KANG YeChan¹, KIM Yeonju¹ (¹University of Seoul)

H1.07 [09:42 - 09:54]

Aging study on the Triple-GEM GE2/1 M2 detector / JEONG Yongho^{1,2}, KIM Dong Hyun^{1,2}, KIM TAE JEONG², YANG Un-ki³, LEE Jason Sang Hun¹, KANG DaYoung¹, PARK Inkyu^{*1} (¹University of Seoul, ²Department of Physics, Hanyang University, ³Department of Physics, Seoul National University)

H1.08 [09:54 - 10:06]

Evaluating the Efficiency of the GEM Detector in the CMS Experiment: A Tag and Probe Method / CHO Baeksun¹, WATSON Ian James¹, LEE Jason¹, PARK Inkyu^{*1} (¹University of Seoul)

H1.09* [10:06 - 10:18]

Measurement of Random Cones Noise in JER and Comparison to Another Method Using the CMS Detector in Run 2 / YOO Hwidong^{*1}, CHO Guk¹, HA Seungkyu¹, KIM Minsuk² (¹Department of Physics, Yonsei University, ² Department of Physics, Gangneung Wonju National University)

[H2-pa] Non-accelerator III

2024. 04. 26 Friday 08:30~10:18

Room: 102

좌장: **김경원** 기초과학연구원

Chair: KIM Kyungwon (IBS)

H2.01 [08:30 - 08:42]

Cosmic-neutrino boosted dark matter (ν BDM) in COSINE-100 experiment / JU Han wool^{*1}, KIM Sun Kee¹, LEE Hyun Su², LEE In soo² (¹Physics & astronomy, Seoul National University, ²Center for underground physics, Institute for Basic Science)

H2.02* [08:42 - 08:54]

WIMP search analysis result in COSINE-100 3 years data / YU Gyunho^{*1} (¹Physics, Sungkyunkwan University)

H2.03* [08:54 - 09:06]

Low-mass dark matter search through WIMP-electron scattering from the COSINE-100 experiment / KIM Won Kyung^{*1,2}, KO Young Ju¹, LEE Hyun Su^{1,2} (¹Center for Underground Physics, IBS, ²Department of Basic Science, University of Science and Technology)

H2.04* [09:06 - 09:18]

Status of Dark Matter Annual Modulation Search with COSINE-100 Full Dataset / LEE Seung Mok^{*1}, KO Young Ju², LEE Hyun Su², JEON Eun Ju², KIM Kyungwon², KIM Sun Kee¹, CHOI Jaejin¹, JU Han wool¹ (¹Department of Physics & Astronomy, Seoul National University, ²Center for Underground Physics, IBS)

H2.05 [09:18 - 09:30]

Progress on COSINE-100U experiment / LEE In soo^{*1} (¹Center for underground physics, IBS)

H2.06* [09:30 - 09:42]

Status of Neutrino Elastic-scattering Observation with NaI(Tl) experiment / KOH Byoung-cheol^{*1} (¹Department of Physics, Chung-Ang University)

H2.07* [09:42 - 09:54]

Searching for Dark Sector Particles in the NEON Experiment / CHOI Jaejin^{*1} (¹Department of Physics and Astronomy, Seoul National University)

H2.08 [09:54 - 10:06]

CENNS-1ton: Precision measurement for Coherent Elastic Neutrino Nucleus Scattering / LEE Youngjae^{*1}, JEONG Haemin¹, YOO Jonghee¹ (¹Physics, Seoul National University)

H2.09 [10:06 - 10:18]

Search for dark matter-nucleon scattering with neutron tagging in water cherenkov detector / CHOI Koun^{*1}, PARK Jong-Chul² (¹Center for Underground Physics, IBS, ²Department of Physics, Chungnam National University)

[H3-nu] Hadron Physics and Nuclear Power

2024. 04. 26 Friday 08:30~10:18

Room: 103

좌장: **김신형** 경북대학교

Chair: KIM Shin Hyung (Kyungpook National University)

H3.01 [08:30 - 08:42]

Exploring baryon structure from instanton vacuum / KIM Hyun-Chul^{*1}, CHOI Yongwoo^{1,2} (¹Inha University, ²Center for Extreme Nuclear Matters (CENuM), Korea University)

H3.02* [08:42 - 08:54]

Go to the Real Ground States of hadrons / PARK Daeho¹, LEE Su Houg^{*1} (¹Yonsei University)

H3.03 [08:54 - 09:06]

Effective interaction between heavy and light quarks within the Instanton Liquid Model of QCD vacuum / RAKHIMOV Nurmukhammad², KIM Hyun-Chul^{*1} (¹Inha University, ²Center for Extreme Nuclear Matters, Korea University)

H3.04 [09:06 - 09:18]

Effect of nucleon structure variation on nuclear matter / MIYATSU Tsuyoshi^{*1} (¹Department of Physics and OMEG Institute, Soongsil University)

H3.05 [09:18 - 09:30]

Heavy-meson properties from instanton vacuum / HONG Ki-Hoon¹, KIM Hyun-Chul^{*1}, RAKHIMOV Nurmukhammad² (¹Inha University, ²Center for extreme nuclear matter, Korea University)

H3.06* [09:30 - 09:42]

Detailed Simulation Study of Barrel Imaging Calorimeter for ePIC at Electron-Ion Collider /

LIM SangHoon^{*1}, BOK Jeongsu¹, RYU Jaehyeok¹, YOO Hwidong², KIM Beom Kyu³, LEE Hyungjun³, BAE Joonsuk³, PARK Sangwoo³, BAE Yunseul³, JO Hyon-Suk⁴, LEE Changhui⁴, KIM Minsuk⁵ (¹Physics Department, Pusan National University, ²Department of Physics, Yonsei University, ³Department of Physics, Sungkyunkwan University, ⁴Department of Physics, Kyungpook National University, ⁵Department of Mathematics and Physics, Gangneung Wonju National University)

H3.07 [09:42 - 09:54]

Spin-orbit correlations in the nucleon based on the effective quark-gluon dynamics / KIM

Hyun-Chul^{*1}, WON Ho-Yeon², KIM June-Young³, WEISS Christian³ (¹Inha University, ²Institut Polytechnique de Paris, École Polytechnique, ³Theory Center, Thomas Jefferson Lab)

H3.08* [09:54 - 10:06]

Double-Strangeness Production in (K-, K+) Reaction / JUNG Wooseung¹, AHN Jung Keun^{*1}, FOR

The E42 collaboration^{1,3,2} (¹Department of Physics, Korea University, ²Department of Physics, Tohoku University, ³ASRC, JAEA)

H3.09* [10:06 - 10:18]

Solidification-induced inclusion nonuniformity in U-Zr-RE metallic nuclear fuel rods / MUN

Seung Uk^{1,2}, AHN Jung-Su², PARK Sang-Gyu², KIM Jun Hwan², WEON Byung Mook^{*1} (¹School of Advanced Materials Science and Engineering SKKU Advanced Institute of Nanotechnology (SAINT, Sungkyunkwan University, ²Advanced nuclear fuel technology development division, Korea Atomic Energy Research Institute)

[H4-ap] Quantum Information and Biophysics

2024. 04. 26 Friday 08:30~09:42

Room: 104

좌장: **오상원** 아주대학교

Chair: OH Sangwon (Ajou University)

H4.01* [08:30 - 08:42]

Rapid cooling of liquid samples in nanofluidic TEM chips for analysis of bio-chemical dynamics / KANG Hyewon¹, LEE Wonhee^{*1} (¹Department of Physics, KAIST)

H4.02* [08:42 - 08:54]

Microwave Transmission in Superconducting TiN CPW Resonator with High and Nonlinear

Kinetic Inductance / JO Jaehyeong¹, KIM Jiwan¹, PARK Hyunjae¹, HYUN Eunseok¹, PARK Jungjae¹,

CHOI Gahyun², LEE Yong-Ho², PARK Kibog^{*1,3} (¹Department of Physics, Ulsan National Institute of Science and Technology (UNIST), ²Center for Superconducting Quantum Computing System, KRISS, ³Department of Electrical Engineering, Ulsan National Institute of Science and Technology (UNIST))

H4.03* [08:54 - 09:06]

Cryo-TEM sample preparation using microfluidic cryofixation and cryo-FIB for time-resolved studies / TIRFE Mekidelawit Girma¹, LEE Wonhee^{*1,2} (¹Bio and Brain Engineering, KAIST, ²Department of Physics, KAIST)

H4.04* [09:06 - 09:18]

Mitigating detuning error of single qubit gate via pulse-shaped microwave / CHOI Taeyoung^{*1}, LEE Hyein¹, KIM Hyunsoo¹, KIM Hyerin¹, YOO Jieun¹ (¹Department of Physics, Ewha Womans University)

H4.05* [09:18 - 09:30]

Progress in two-photon Raman transition experiment on multiple Yb171+ ion qubits / CHOI Taeyoung^{*1}, KIM Hyunsoo¹, LEE HYE IN¹, YOO Jieun¹, KIM Hyerin¹ (¹Department of Physics, Ewha Womans University)

H4.06* [09:30 - 09:42]

Design Strategy for Optimal Cross-Resonance Gate / WOO Seungwook¹, KIM Youngdu¹, CHOI Beomgyu¹, PARK Jongwon¹, KIM Jeongwon¹, CHONG Yonuk^{*1} (¹Nano Engineering, Sungkyunkwan University)

[H5-ap] Focus: 2-dimensional Van der Waals Ferroelectrics I

2024. 04. 26 Friday 08:30~10:06

Room: 105

좌장: **유효빈** 서강대학교

Chair: YOO Hyobin (Sogang University)

H5.01 [08:30 - 08:54]

Atomic and Electronic Manipulation of Robust Ferroelectric Polymorphs / YANG Heejun^{*1} (¹Department of Physics, KAIST)

H5.02 [08:54 - 09:18]

Investigation of interlayer stacking configurations and ferroelectricity in gamma-GeSe / KIM Kwanpyo^{*1} (¹Physics, Yonsei University)

H5.03 [09:18 - 09:42]

Nanoscale investigation of ferroelectric domains in two-dimensional van der Waals ferroelectrics / YANG Sang Mo^{*1} (¹Department of Physics, Sogang University)

H5.04 [09:42 - 10:06]

Structural phase diagrams of twisted trilayer 2D materials and emergent ferroelectricity / PARK Changwon¹, SON Young-Woo^{*1} (¹KIAS)

[H6-st] Complex Systems II

2024. 04. 26 Friday 08:30~10:18

Room: 106

좌장: **조영설** 전북대학교

Chair: CHO Young Sul (Jeonbuk National University)

H6.01 [08:30 - 08:42]

Renormalization of complex networks with partition functions / JUNG Sungwon¹, LEE Sang Hoon^{*1}, CHO Jaeyoon¹ (¹Department of Physics, Gyeongsang National University)

H6.02* [08:42 - 08:54]

Higher-order components in generalized higher-order-connected hypergraph / KIM Jung-Ho¹, GOH KWANG-IL^{*1,2} (¹Korea University, ²Department of Mathematics, University of California Los Angeles)

H6.03 [08:54 - 09:06]

Effective dimensions of correlated hypergraphs / YI Sudo^{*1}, YANG Seong-Gyu¹, GOH KWANG-IL², LEE Deok-Sun^{1,3} (¹School of Computational Sciences, KIAS, ²Department of Physics, Korea University, ³Center for AI and Natural Sciences, KIAS)

H6.04 [09:06 - 09:18]

No-exclaves percolation on random networks / MIN Byungjoon^{*1}, PARK Eun-Kyu², GWAK Sang-Hwan², GOH Kwang-IL² (¹Department of Physics, Chungbuk National University, ²Department of Physics, Korea University)

H6.05* [09:18 - 09:30]

Anonymized node position inference of a power-grid network / LEE Jaiyong², LEE Daekyung¹, KIM Heetae^{*2} (¹Institute of Sustainable Earth and Environmental Dynamics (SEED), Pukyong National University, ²Department of Energy Technology, KENTECH)

H6.06 [09:30 - 09:42]

Effective Link Additions for Optimal Synchronization in Kuramoto Oscillator Networks / LEE Daekyung³, PARK Jong-Min², KIM Heetae^{*1} (¹Department of Energy Engineering, KENTECH, ²Junior Research Group, Asia-Pacific Center for Theoretical Physics(APCTP), ³Institute of Sustainable Earth and Environmental Dynamics (SEED), Pukyong National University)

H6.07* [09:42 - 09:54]

Mitigation the Cascading Failure by Reinforcing Inertia in Power Grid / PARK Sangjoon¹, KIM Cook Hyun¹, PARK Jinha¹, KAHNG Byungnam^{*1} (¹Department of energy engineering, KENTECH)

H6.08 [09:54 - 10:06]

Understanding synchronization considering both the amplitude and phase of oscillators by utilizing the Stuart-Landau model / PARK Youngjai¹, WOO Jaehyung², KO Tae-Wook³, HONEY Christopher J.⁴, MOON Joon-Young^{*1} (¹Center for Neuroscience Imaging Research, Institute for Basic Science, ²Department of Psychological and Brain Sciences, Dartmouth College, ³Mathematical Modeling Team, National Institute for Mathematical Sciences, ⁴Department of Psychological and Brain Sciences, Johns Hopkins University)

H6.09 [10:06 - 10:18]

Validity of annealed approximation in a high-dimensional system / UM Jaegon^{*1}, HONG Hyunsuk², PARK Hyunggyu³ (¹Department of physics, POSTECH, ²Department of Physics and Research Institute of Physics and Chemistry, Jeonbuk National University, ³Quantum Universe Center, KIAS)

[H7-co] Condensed-matter Computational Physics

2024. 04. 26 Friday 08:30~10:06

Room: 107

좌장: 김용훈 한국과학기술원

Chair: KIM Yong-Hoon (KAIST)

H7.01 [08:30 - 08:42]

Hybrid Diffusions for Stable Molecular Structure Generation via Explicit Energy-based Model / CHO Youngwoo², YI Seunghoon⁴, KIM Soo Kyung³, YOON HongKee^{*1}, LEE Joonseok^{4,5} (¹Physics, Kangwon National University, ² Graduate School of AI , KAIST, ³., Stanford Research Institute, ⁴Graduate School of Data Science, Seoul National University, ⁵., Google Research)

H7.02 [08:42 - 08:54]

First-principles Investigation of Interfacial Effects on Long-term Stability in Advanced Solar Cells / YIM Kanghoon^{*1}, JUNG Wonze^{1,2}, LIM Suim^{1,3}, KIM Kihwan⁴, AHN Sejin⁴ (¹Energy AI and

Computational Science Laboratory, Korea Institute of Energy Research, ²Department of Physics, Chungnam National University, ³Department of Mechanical engineering, Sogang University, ⁴Photovoltaics Research Department, Korea Institute of Energy Research)

H7.03* [08:54 - 09:06]

Enhancing electrochemical behavior of localized high-concentration electrolytes solvation structures through antisolvent concentration modulation / MARIAM Afira¹, AKTER Shanjida¹, CHOE Seungho^{*1} (¹Dept. of Energy Science and Engineering, DGIST)

H7.04 [09:06 - 09:18]

Ultrafast thermal and nonthermal phase transition of semiconductor investigated through nonadiabatic quantum molecular dynamics study / IHM Yungok^{*1}, AHN Je Young¹, SHIM Ji Hoon¹ (¹Department of Chemistry, POSTECH)

H7.05 [09:18 - 09:30]

First-principles study of gating-based modulation defect energy levels in hexagonal boron nitride on MoS₂ / SONG Ji-Yoon¹, LEE Ryong-Gyu¹, KIM Yong-Hoon^{*1} (¹School of Electrical Engineering, KAIST)

H7.06 [09:30 - 09:42]

Strain & low-temperature behavior of quantum hybridization negative differential resistance from non-Pb 1D halide perovskite / LEE Jeongwon¹, KIM TAE HYUNG¹, LEE Juho¹, KIM Yong-Hoon^{*1} (¹School of Electrical Engineering, KAIST)

H7.07* [09:42 - 09:54]

Electronic Properties of Ca₂N Bilayers: A Study of Stacking Configurations, Maximally Localized Wannier Functions, and Landau Levels / KIM Heeju^{1,2}, KIM Gunn^{*1,2} (¹Department of Physics and Astronomy, Sejong University, ²HMC, Sejong University)

H7.08* [09:54 - 10:06]

Investigation on the possibility of thru-hole connectedness in multi-stacking for thru-hole epitaxy / LEE Young-Jun¹, KWON Young-Kyun^{*1,2}, KIM Chinkyu^{1,2}, CHOI Jaewu², LEE Seungjun³ (¹Department of Physics, Kyung Hee University, ²Department of Information Display, Kyung Hee University, ³Department of Electrical & Computer Engineering, University of Minnesota)

[H8-co] Research on High-Tc Superconductivity Related Systems

2024. 04. 26 Friday 08:30~09:42

Room: 108

좌장: 박승룡 인천대학교

Chair: PARK Seung Ryong (Incheon National University)

H8.01 [08:30 - 08:54]

A potential new phase on the block: spontaneous breaking of mirror symmetry beyond critical doping in Pb-Bi2212 / KIM Changyoung^{*1}, JUNG Sae-Gyeol¹, KIM Young-Do¹

(¹Department of Physics and Astronomy, Seoul National University)

H8.02 [08:54 - 09:18]

Observation of Planckian behavior in Bi₂Sr₂CaCu₂O_{8+d} / HWANG Jungseek^{*1}, PARK Hwiwoo¹, GU G. D.² (¹Department of Physics, Sungkyunkwan University, ²Condensed Matter Physics and Materials Science, Brookhaven National Laboratory, USA)

H8.03 [09:18 - 09:42]

First-principles study of superconducting nickelates: Quintuple-layer Nd₆Ni₅O₁₂ and others / HAN Myung Joon^{*1} (¹Department of Physics, KAIST)

[H9-se] Next-generation Semiconductors and Devices - Memory, AI, Neuromorphic, MOSFET

2024. 04. 26 Friday 08:30~10:06

Room: 201

좌장: 임성주 성균관대학교

Chair: LIM Seong Chu (Sungkyunkwan University)

H9.01* [08:30 - 08:42]

Optical and electrical control of nanoscale metal-insulator-semiconductor tunnel junction / JOO Huitae¹, LEE Hyeongwoo¹, KIM SuJeong¹, PARK Kyoung-Duck^{*1} (¹Physics, POSTECH)

H9.02* [08:42 - 08:54]

Fabrication of Low-Voltage Non-Volatile Switching Electrolyte-Gated Field-Effect Transistors via Surface Morphology Optimization of Vanadium Dioxide Thin Films / CHOI Ha Young², LANCE McGowen², KANG Dae Joon^{*2} (¹Sungkyunkwan University, ²Department of Physics, Sungkyunkwan University)

H9.03 [08:54 - 09:06]

딥러닝 기반 극자외선 (EUV) 리소그래피 공정의 전산모사 / KIM Sang-Kon^{*1} (¹the Faculty of Liberal Arts, Hongik University)

H9.04 [09:06 - 09:18]

Field-effect transistor memory employing a halide perovskite and its switching mechanism / KIM Donghyeok¹, WANG Gunuk^{1,2}, KIM Chanhyeok¹, MIN Hanul^{1,2} (¹KU-KIST Graduate School of Converging Science and Technology, Korea University, ²Department of Integrative Energy Engineering, Korea University)

H9.05* [09:18 - 09:30]

High-Brightness GaN-Based Nano-LEDs: Enhancing Performance through Porosity and Selectively Grown GaN Nanopyramids / THAALBI Hamza¹, KULKARNI Mandar A¹, RYU Sang Wan¹ (¹Department of Physics, Chonnam National University)

H9.06 [09:30 - 09:42]

Design and fabrication of high-performance multi-junction 940 nm VCSEL / KIM HeeYun¹, KIM Jaegyul¹, LEE SangWOOK¹, KIM SUNIL¹, PARK JungHyun¹, CHOI SungHan¹, LIM SungWook¹, LEE JAEBONG¹ (¹EPI, QSI)

H9.07 [09:42 - 09:54]

Proximity-Induced Tunable magnetic order at $W_{1-x}V_xSe_2/Fe_3GeTe_2$ Heterointerface / KIM Taeso^{1,2}, CHOI Eun-Mi^{2,3}, CHO Byeong Wook^{2,3}, LEE Young Hee^{2,3} (¹Department of Applied Physics, Sookmyung Women's University, ²Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), ³Sungkyunkwan University)

H9.08* [09:54 - 10:06]

Wide tuning of exciton polaron oscillator strengths in two-dimensional semiconductors / LEE Young-Jun¹, JUNG Jin-Woo¹, KIM Ji-Yeon¹, TANIGUCHI Takashi², WATANABE Kenji³, KIM Youngwook¹, CHO Chang-Hee¹ (¹Department of Physics and Chemistry, DGIST, ²International center for materials nanoarchitectonics, NIMS, ³Research center for functional materials, NIMS)

[H10-se] Semiconductor Materials

2024. 04. 26 Friday 08:30~09:54

Room: 202

좌장: **윤석준** 울산대학교

Chair: YUN SeokJoon (University of Ulsan)

H10.01 [08:30 - 08:42]

Visualization of local doping effect in hBN-encapsulated monolayer WS_2 / LEE Taegeon¹, LEE Young-Jun², CHO Chang-Hee², RHO Heesuk¹ (¹Department of Physics, Jeonbuk National University, ²Department of Physics and Chemistry, DGIST)

H10.02* [08:42 - 08:54]

Wide-range photoluminescence enhancement of a MoSe₂ monolayer via surface lattice

resonance of the gold slot array / KOO Yeonjeong¹, OH Dong Kyo⁴, MUN Jungho⁴, TYUGAEV

Mikhail³, KIM Yong Bin¹, KIM Tae ho², KIM Yeseul⁴, KIM Jonghwan², KRAVTSOV Vasily³, RHO

Junsuk⁴, PARK Kyoung-Duck^{*1} (¹Physics, POSTECH, ²Mechanical Engineering, POSTECH, ³Materials Science and Engineering, POSTECH, ⁴Physics and Engineering, ITMO University)

H10.03 [08:54 - 09:06]

Nano Imaging of Ultrafast Dynamics in 2-Dimensional Materials with PiFM and s-SNOM /

WOO Hwi Je¹, LEE Eun Seong¹, JAHNG Junghoon^{*1} (¹Hyperspectral Nano-imaging Lab, Korea

Research Institute of Standards and Science (KRISS))

H10.04 [09:06 - 09:18]

Strain engineering for ZnO thin film by means of ion-beam irradiation / JEON Gi Wan², PARK

Jun Kue^{*2} (¹KAERI, ²Particle Beam Research Division, Korea Atomic Energy Research Institute)

H10.05 [09:18 - 09:30]

First-Principles Study of Monolayer WSeTe: Exploring Electronic Properties for Future

Devices. / YOU SUEJEONG^{1,2}, KIM HEESANG^{1,2}, KIM Namme^{*1} (¹Physics, Soongsil University,

²Physics, OMEG institute)

H10.06* [09:30 - 09:42]

Black Phosphorus Homojunction Multi-Level Transistors / KO Youngkyu¹, KO Yeonghyeon¹,

YEOM Dongju¹, JIN Seokhun¹, IM Heungsoon², SEOK Yongwook¹, JANG Hanbyeol^{2,3}, LEE

Kayoung^{*1} (¹School of Electrical Engineering, Korea Advanced Institute of Science & Technology

(KAIST), ²School of Materials Science and Engineering, Gwangju Institute of Science & Technology

(GIST), ³Samsung Semiconductor R&D Center)

H10.07* [09:42 - 09:54]

Surface Photovoltage Characterizations of Exfoliated WS₂ Layers on Plasmonic Nanogratings

/ LIM Seoyoung¹, CHO Jungyeon¹, NGUYEN Anh Thi¹, KIM Nahyun¹, SONG Jungeun¹, ROH

Kwangdong¹, KIM Dong-Wook^{*1} (¹Department of Physics, Ewha Womans University)

[H11-te] Physics Teaching III

2024. 04. 26 Friday 08:30~09:42

Room: 204

좌장: **조광희** 조선대학교

Chair: JO Kwang Hee (Chosun University)

H11.01 [08:30 - 08:42]

고등학교 학생의 입자물리에 대한 관심도 / KIM Eun Joo¹, CHOI Hyukjoon², LEE Su-Kyeong^{*1,2}
(¹Division of Science Education, Jeonbuk National University, ²DEPARTMENT OF PHYSICS EDUCATION, Korea National University of Education)

H11.02 [08:42 - 08:54]

Estimation of the Impact of COVID-19 on High School Physics Conceptual Learning

/ JANG Hyewon^{*1}, KIM Yongsun², CHO Wooram³ (¹Department of Educational Innovation, Sejong University, ²Department of Physics and Astronomy, Sejong University, ³Department of Physics, Gachon University)

H11.03* [08:54 - 09:06]

과학 교육에서 과학의 불확실성 분류와 표현을 위한 프레임워크의 적용과 효과 / JO Junghyo^{*1}, SONG Jinwoong², PARK Jaehyun³, SHIN Eunhye⁴ (¹Department of Physics Education, Seoul National University, ²Department of Physics Education, Seoul National University, ³Department of Physics Education, Seoul National University, ⁴Department of Physics Education, Seoul National University)

H11.04 [09:06 - 09:18]

예비 교사를 위한 물리 실험 / LEE Kyung Suk^{*1} (¹Department of Physics Education, Kongju National University)

H11.05 [09:18 - 09:30]

문제 다변화 온라인 시험 플랫폼을 활용한 일반물리 교과목에의 Mastery learning 개념 적용 / KANG DongYel^{*1} (¹School of Basic Sciences, Hanbat National University)

H11.06 [09:30 - 09:42]

체화된 인지 이론과 물리교육 연구: 물리 학습 과정에서 일어나는 다양한 신체 참여 방식의 유형화 / YOON Hye-Gyoung^{*1} (¹Science education department, Chuncheon National University of Education)

[H12-pl] Laser plasmas & Basic Plasma Phenomena

2024. 04. 26 Friday 08:30~09:54

Room: 205

좌장: **윤영대** 아시아태평양이론물리센터

Chair: YOON Young Dae (APCTP)

H12.01* [08:30 - 08:42]

Theoretical formulation based on numerical PIC simulations for high-efficiency and multi-plasma oscillators / LEE Jaeho¹, PARK Dohyun¹, KUMAR Manoj¹, HUR Min Sup^{*1} (¹Physics, UNIST)

H12.02* [08:42 - 08:54]

Beam combining by Raman Backward Scattering with multiple pump lasers / PARK Dohyun¹, LEE Jaeho¹, HUR Min Sup^{*1} (¹Physics, UNIST)

H12.03* [08:54 - 09:06]

Dense Plasma Diagnostics with a Nomarski Interferometer Using a Frequency tripled Ti:sapphire Laser / LEE Hyojeong¹, 김수호¹, LEE Chung hwa¹, YU Hyungyu¹, KIM Minseok², SUK Hyyong^{*1} (¹Dept. of Physics and Photon Science, GIST, ²XFEL 장치개발팀, Pohang Accelerator Laboratory)

H12.04 [09:06 - 09:18]

THz emission from a Plasma Oscillator Embedded in a Density Gradient Plasma / KUMAR Manoj¹, HUR Min Sup^{*1} (¹Physics, UNIST)

H12.05 [09:18 - 09:30]

Non-equilibrium formation and dynamics of magnetic flux ropes / YOON Young Dae^{*1,2}, LAISHRAM Modhuchandra Singh¹, MOORE Thom Earle³, YUN GUNSU² (¹Research Division, APCTP, ²Department of Physics, Pohang University of Science and Technology (POSTECH), ³Research Division, 3rd Rock Research)

H12.06* [09:30 - 09:42]

Effect of High-Intensity Laser on Runaway Electrons / KANG Hye Lin¹, YOON Young Dae^{*1,2}, YUN GUNSU^{*1,3} (¹Department of Physics, POSTECH, ²Research Division, Asia-Pacific Center for Theoretical Physics(APCTP), ³Division of Nuclear Engineering, POSTECH)

H12.07 [09:42 - 09:54]

Studies on self-magnetization of collisionless plasma using the canonical vorticity framework and particle-in-cell simulations / LAISHRAM Modhuchandra Singh¹, YOON Young Dae^{*1,2} (¹Plasma Physics, Asia-Pacific Center for Theoretical Physics(APCTP), ²Physics department, Pohang University of Science and Technology (POSTECH))

[H13-as] Gravity / Cosmology

2024. 04. 26 Friday 08:30~10:06

Room: 206

좌장: **곽보근** 동국대학교

Chair: GWAK Bogeun (Dongguk University)

H13.01 [08:30 - 08:42]

Temperature upper bound of an ideal gas / KIM Hyeong-Chan^{*1} (¹School of Liberal Arts and Sciences, Korea National University of Transportation)

H13.02 [08:42 - 08:54]

Dynamics of Ellis wormholes with double-null simulations / YEOM Dong-han^{*1} (¹Physics Education, Pusan National University)

H13.03 [08:54 - 09:06]

Wheeler-deWitt states of a AdS black hole with a scalar field / EOM Hwajin^{*1}, SEO Yun-seok¹, KIM Kyung Kiu¹ (¹College of General Education, Kookmin University)

H13.04* [09:06 - 09:18]

Universal relation on de Sitter black holes / KO Jun beom¹, GWAK Bogeun^{*1} (¹Department of Physics, Dongguk University)

H13.05* [09:18 - 09:30]

Quantitative explanation of the observed breakdown of Newtonian gravity in binary orbit by Verlinde's emergent gravity / YOON YOUNGSUB^{*1} (¹Department of Physics, Chungnam National University)

H13.06 [09:30 - 09:42]

Holographic Dark Energy with Torsion / LEE Jungjai^{*1}, YUN Yongjun¹ (¹Daejin University)

H13.07 [09:42 - 09:54]

Hybrid Quintessential Axion / LEE Jungjai^{*1}, CHEON Keunsu¹ (¹Daejin University)

H13.08 [09:54 - 10:06]

Entanglement dark energy and Alcock–Paczyński Test / LEE Jae-Weon^{*1} (¹Department of Electrical and Electronic Engineering, Jungwon University)

[H14-at] Focus: Quantum Memory and Quantum Network

2024. 04. 26 Friday 08:30~10:18

Room: 209

좌장: 문한섭 부산대학교

Chair: MOON Han Seb (Pusan National University)

H14.01 [08:30 - 09:06]

Light manipulation via spontaneous four-wave mixing in a warm double- \perp -type atomic ensemble / MOON Han Seb*¹ (¹Pusan National University)

H14.02 [09:06 - 09:42]

Various high-Q cavities for quantum optomechanics / KIM Jinuk*¹ (¹Quantum Technology Institute, KRISS)

H14.03 [09:42 - 10:18]

반도체 점결함을 이용한 스핀-광자 인터페이스 연구 / LEE Sang-Yun*¹, HWANG Seung Jae¹, PAIK Seoyoung¹, NGUYEN Son² (¹Department of Physics and Photon Science, Gwangju Institute of Science and Technology, ²Department of Physics, Chemistry and Biology (IFM), Linkoping University)

[H15-qu] Pioneer: Trends in Quantum Sensing Technologies II

2024. 04. 26 Friday 08:30~10:18

Room: 301

좌장: 윤건수 포항공과대학교

Chair: YUN Gunsu (POSTECH)

H15.01 [08:30 - 09:06]

Cavity optomechanical devices toward quantum sensing / SUH Junho*¹ (¹Department of Physics, POSTECH)

H15.02 [09:06 - 09:42]

Ground based laser interferometer gravitational wave detector and Quantum noise of detector / PARK June Gyu*¹ (¹Department of astronomy, Yonsei University)

H15.03 [09:42 - 10:18]

Quantum metrology for gravitational wave detection / RA Young-Sik*¹ (¹Department of Physics, KAIST)

Session I

[I1-pa] Accelerator V

2024. 04. 26 Friday 10:30~12:06

Room: 101

좌장: 이상훈 서울시립대학교

Chair: LEE Jason Sang Hun (University of Seoul)

I1.01* [10:30 - 10:42]

Comparison of options for dual-readout calorimeter based on Geant4 simulations / YOO

Hwidong^{*1}, LEE Sehwook², JANG Seoyun¹, KO Sanghyun⁴, HWANG Kyuyeong¹, CHO Guk¹, EO Yun¹, HA Seungkyu¹, JANG Haeun¹, KIM Dongwoon¹, KIM Sungwon¹, PARK Hyesung¹, HUH Changgi², KIM Bobae², LEE Junghyun², DO Hyunsuk², RYU Minsang³, LEE Hyupwoo⁵, LEE Jason⁵, LEE Yunjae⁵, SON Youngwan⁵, KIM Dongwook⁶, KWON Nahye⁶, LEE Woochan⁶, KIM Yongjun⁷, LIM Sanghoon⁷, RYU Jaehyeok⁷, BAE Joonsuk⁸, KIM Beomkyu⁸, LEE Hyungjun⁸, JANG Yoonjun⁹, JEONG Jinryong⁹, KIM Minsuk⁹, CHOI Suyong¹⁰, CHEON Byunggu¹¹ (¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³Center of High Energy Physics, Kyungpook National University, ⁴Department of Physics, Seoul National University, ⁵Department of Physics, University of Seoul, ⁶Medical Physics and Biomedical Engineering Lab, Yonsei Severance Hospital, ⁷Department of Physics, Pusan National University, ⁸Department of Physics, Sungkyunkwan University, ⁹Department of Physics, Gangneung Wonju National University, ¹⁰Department of Physics, Korea University, ¹¹Department of Physics, Hanyang University)

I1.02* [10:42 - 10:54]

Module assembly for 3x3-size module of the Dual-Readout Calorimeter for the future e+e-

colliders / YOO Hwidong^{*1}, CHO Guk¹, HWANG Kyuyeong¹, KIM Sungwon¹, KIM Dongwoon¹, EO Yun¹, JANG Haeun¹, PARK Hyesung¹, JANG Seoyun¹, HA Seungkyu¹, KIM Tongil¹, HUH Changgi², KIM Bobae², LEE Junghyun², DO Hyunsuk², LEE Sehwook², RYU Min Sang³, KO Sanghyun⁴, KWON Hyejin⁴, LEE Jason⁵, KIM Doyeong⁵, LEE Hyupwoo⁵, LEE Yunjae⁵, SON Youngwan⁵, KIM Dongwook⁶, KWON Nahye⁶, LEE Woochan⁶, KIM Yongjun⁷, LIM Sanghoon⁷, RYU Jaehyeok⁷, KIM Beomkyu⁸, BAE Joonsuk⁸, LEE Hyungjun⁸, KIM Minsuk⁹, JANG Yoonjun⁹, JEONG Jinryong⁹, CHOI Suyong¹⁰, CHEON Byunggu¹¹ (¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³CHEP, Center for High Energy Physics, Kyungpook National University, ⁴Department of Physics, Seoul National University, ⁵Department of Physics, University of Seoul, ⁶Medical Physics and Biomedical Engineering Lab, Yonsei Severance Hospital, ⁷Department of Physics, Pusan National University, ⁸Department of Physics, Sungkyunkwan University, ⁹Department of Physics, Gangneung Wonju National University, ¹⁰Department of Physics, Korea University, ¹¹Department of Physics, Hanyang University)

I1.03* [10:54 - 11:06]

Performance study of the Dual-Readout Calorimeter using 2023 CERN test beam data / YOO Hwidong^{*1}, KIM Sungwon¹, CHO Guk¹, EO Yun¹, HA Seungkyu¹, HWANG Kyuyeong¹, JANG Haeun¹, JANG Seoyun¹, KIM Dongwoon¹, PARK Hyesung¹, DO Hyunsuk², HUH Changgi², KIM Bobae², LEE Junghyun², LEE Sehwook², RYU Min Sang³, KO Sanghyun⁴, LEE Hyupwoo⁵, LEE Jason⁵, LEE Yunjae⁵, SON Youngwan⁵, KIM Dongwook⁶, KWON Nahye⁶, LEE Woochan⁶, KIM Yongjun⁷, LIM Sanghoon⁷, RYU Jaehyeok⁷, BAE Joonsuk⁸, KIM Beomkyu⁸, LEE Hyungjun⁸, JANG Yoonjun⁹, JEONG Jinryong⁹, KIM Minsuk⁹, CHOI Suyong¹⁰, CHEON Byunggu¹¹ (¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³Center for High Energy Physics, Kyungpook National University, ⁴Department of Physics, Seoul National University, ⁵Department of Physics, University of Seoul, ⁶Department of Radiation Oncology, Yonsei Cancer Center Severance Hospital, ⁷Department of Physics, Pusan National University, ⁸Department of Physics, Sungkyunkwan University, ⁹Department of Physics, Gangneung Wonju National University, ¹⁰Department of Physics, Korea University, ¹¹Department of Physics, Hanyang University)

I1.04* [11:06 - 11:18]

High granularity performance of MCP-PMT of the dual-readout calorimeter in 2023 test beam at CERN / JANG Haeun^{*1}, YOO Hwidong¹, CHO Guk¹, EO Yun¹, HA Seungkyu¹, HWANG Kyuyeong¹, JANG Seoyun¹, KIM Dongwoon¹, KIM Sungwon¹, PARK Hyesung¹, DO Hyunsuk², HUH Changgi², KIM Bobae², LEE Junghyun², LEE Sehwook², RYU Minsang³, KO Sanghyun⁴, LEE Hyupwoo⁵, LEE Jason⁵, LEE Yunjae⁵, SON Youngwan⁵, KIM Yongjun⁶, LIM Sanghoon⁶, RYU Jaehyeok⁶, BAE Joonsuk⁷, KIM Beomkyu⁷, LEE Hyungjun⁷, JANG Yoonjun⁸, JEONG Jinryong⁸, KIM Minsuk⁸, CHOI Suyong⁹, CHEON Byunggu¹⁰, KIM Dongwook¹¹, KWON Nahye¹¹, LEE Woochan¹¹ (¹Physics, Yonsei University, ² Physics, Kyungpook National University, ³CHEP (Center for High Energy Physics), Kyungpook National University, ⁴ Physics, Seoul National University, ⁵ Physics, University of Seoul, ⁶ Physics, Pusan National University, ⁷ Physics, Sungkyunkwan University, ⁸ Physics, Gangneung Wonju National University, ⁹ Physics, Korea University, ¹⁰ Physics, Hanyang University, ¹¹Department of Radiation Oncology, Yonsei Cancer Center Severance Hospital)

I1.05* [11:18 - 11:30]

Data acquisition system update plan for dual-readout calorimeter testbeam (2024) / EO Yun^{*1}, DO Hyunsuk², HUH Changgi², KIM Bobae², LEE Junghyun², LEE Sehwook², RYU Min Sang³, KO Sanghyun⁴, LEE Hyupwoo⁵, LEE Jason⁵, LEE Yunjae⁵, SON Youngwan⁵, CHO Guk¹, HA Seungkyu¹, HWANG Kyuyeong¹, JANG Haeun¹, JANG Seoyun¹, KIM Dongwoon¹, KIM Sungwon¹, PARK Hyesung¹, YOO Hwidong^{*1}, KIM Dongwook⁶, KWON Nahye⁶, LEE Woochan⁶, KIM Yongjun⁷, LIM Sanghoon⁷, RYU Jaehyeok⁷, BAE Joonsuk⁸, KIM Beomkyu⁸, LEE Hyungjun⁸, JANG Yoonjun⁹, JEONG Jinryong⁹, KIM Minsuk⁹, CHOI Suyong¹⁰, CHEON Byunggu¹¹ (¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³Center for High Energy Physics, Kyungpook National University, ⁴Department of Physics, Seoul National University,

⁵Department of Physics, University of Seoul, ⁶Department of Radiation Oncology, Yonsei Cancer Center Severance Hospital, ⁷Department of Physics, Pusan National University, ⁸Department of Physics, Sungkyunkwan University, ⁹Department of Mathematics and Physics, Gangneung Wonju National University, ¹⁰Department of Physics, Korea University, ¹¹Department of Physics, Hanyang University)

I1.06* [11:30 - 11:42]

Wireless DAQ system R&D status and plan of the dual-readout calorimeter for future e+e-

colliders. / KIM Dong woon¹, KIM Dong woon¹, EO Yun¹, HA Seungkyu¹, HWANG Kyuyeong¹, JANG Haeun¹, JANG Seoyun¹, KIM Sungwon¹, PARK Hyesung¹, YOO Hwidong^{*1}, DO Hyunsuk², HUH Changgi², KIM Bobae², LEE Junghyun², LEE Sehwook², RYU MinSang³, KO Sanghyun⁴, LEE Hyupwoo⁵, LEE Jason⁵, LEE Yunjae⁵, SON Youngwan⁵, KIM Dongwook⁶, KWON Nahye⁶, LEE Woochan⁶, KIM Yongjun⁷, LIM Sanghoon⁷, RYU Jaehyeok⁷, BAE Joonsuk⁸, KIM Beomkyu⁸, LEE Hyungjun⁸, JANG Yoonjun⁹, JEONG Jinryong⁹, KIM Minsuk⁹, CHOI Suyong¹⁰, CHEON Byunggu¹¹ (¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³CHEP (Center for High Energy Physics), Kyungpook National University, ⁴Department of Physics, Seoul National University, ⁵Department of Physics, University of Seoul, ⁶Department of Radiation Oncology, Yonsei Cancer Center Severance Hospital, ⁷Department of Physics, Pusan National University, ⁸Department of Physics, Sungkyunkwan University, ⁹Department of Physics, Gangneung Wonju National University, ¹⁰Department of Physics, Korea University, ¹¹Department of Physics, Hanyang University)

I1.07 [11:42 - 11:54]

Test of dual-readout calorimeter modules based on liquid scintillator and Cherenkov using cosmic ray / HA Seungkyu^{*1}, CHO Guk¹, EO Yun¹, HWANG Kyuyeong¹, JANG Haeun¹, JANG Seoyun¹, KIM Dongwoon¹, KIM Sungwon¹, PARK Hyesung¹, YOO Hwidong¹, DO Hyunsuk², HUH Changgi², KIM Bobae², LEE Junghyun², LEE Sehwook², RYU Min Sang¹¹, KO Sanghyun³, LEE Hyupwoo⁴, LEE Jason⁴, LEE Yunjae⁴, SON Youngwan⁴, KIM Dongwook⁵, KWON Nahye⁵, LEE Woochan⁵, KIM Yongjun⁶, LIM Sanghoon⁶, RYU Jaehyeok⁶, BAE Joonsuk⁷, KIM Beomkyu⁷, LEE Hyungjun⁷, JANG Yoonjun⁸, JUNG Jinryong⁸, KIM Minsuk⁸, CHOI Suyong⁹, CHEON Byunggu¹⁰

(¹Department of Physics, Yonsei University, ²Department of Physics, Kyungpook National University, ³Department of Physics, Seoul National University, ⁴Department of Physics, University of Seoul, ⁵Severance, Yonsei University, ⁶Department of Physics, Pusan National University, ⁷Department of Physics, Sungkyunkwan University, ⁸Department of Physics, Gangneung Wonju National University, ⁹Department of Physics, Korea University, ¹⁰Department of Physics, Hanyang University, ¹¹Center for High Energy Physics, Kyungpook National University)

I1.08* [11:54 - 12:06]

Particle reconstruction for dual-readout calorimeter using deep learning / LEE YunJae¹, PARK

Inkyu^{*1}, LEE Jason Sang Hun¹, LEE Hyupwoo¹, SON Youngwan¹, YOO Hwidong², HA Seungkyu², CHO Guk², HWANG Kyuyeong², KIM Sungwon², JANG Haeun², KIM Dongwoon², EO Yun², JANG Seoyun², KIM Dongwook⁸, KWON Nahye⁸, LEE Woochan⁸, LEE Sehwook³, RYU Minsang³, HUH Changgi³, KIM Bobae³, LEE Junghyun³, DO Hyunsuk³, KO Sanghyun⁴, KIM Beomkyu⁵, LEE Hyungjun⁵, BAE Joonsuk⁵, KIM Minsuk⁶, JANG Yoonjun⁶, JEONG Jinryong⁶, LIM Sanghoon⁷, RYU Jaehyeok⁷, KIM Yongjun⁷, CHOI Suyong⁹, CHEON Byunggu¹⁰ (¹University of Seoul, ²Department of Physics, Yonsei University, ³Department of Physics, Kyungpook National University, ⁴Department of Physics, Seoul National University, ⁵Department of Physics, Sungkyunkwan University, ⁶Department of Physics, Gangneung Wonju National University, ⁷Department of Physics, Pusan National University, ⁸Department of Radiation Oncology, Yonsei University Health System, ⁹Department of Physics, Korea University, ¹⁰Department of Physics, Hanyang University)

[I2-nu] Nuclear Structure

2024. 04. 26 Friday 10:30~12:18

Room: 102

좌장: 김영만 기초과학연구원

Chair: KIM Youngman (IBS)

I2.01 [10:30 - 10:42]

Gamow-Teller strength distributions for 18O and strongly deformed nuclei 24,26Mg by deformed QRPA / HA Eun Ja^{*1} (¹Department of Physics, Hanyang University)

I2.02 [10:42 - 10:54]

Location of $d_{5/2}$, $s_{1/2}$ and $d_{3/2}$ orbitals in ¹⁷C: implications for N=14,16 shell gaps / PEREIRA-LOPEZ Xesus^{*1} (¹Center for Exotic Nuclear Studies (CENS), IBS)

I2.03 [10:54 - 11:06]

Investigation of the Properties of ¹⁰C Beta Decay Using the AGATA HPGe Detector Array / SON Yonghyun^{1,2}, HA Jeongsu^{*2} (¹Department of Physics&Astronomy, Seoul National University, ²Center for Exotic Nuclear Studies, Institute for Basic Science)

I2.04 [11:06 - 11:18]

Precision measurements of E0 strengths in Nickel isotopes with GRIFFIN / MURILLO-MORALES Silvia¹, PEREIRA-LOPEZ Xesus^{*2} (¹ TRIUMF, Vancouver, Canada, ²Center for Exotic Nuclear Studies (CENS), IBS)

I2.05* [11:18 - 11:30]

Nuclear structure study of gold isotopic chain using multi-nucleon transfer reaction / KIM

Yung Hee*¹, CHO Youngju^{1,2}, CHOI Seonho² (¹Center for Exotic Nuclear Studies, IBS, ²Department of Physics and Astronomy, Seoul National University)

I2.06* [11:30 - 11:42]

Combinatorial nuclear level densities / KIM Youngman^{*1}, PARK Myunghee^{1,2} (¹Center for Exotic Nuclear Studies, IBS, ²Physics, Ewha Womans University)

I2.07 [11:42 - 11:54]

Unitary limit Fermions under trap / SONG Young-Ho^{*1} (¹Rare Isotope Science Project, Institute for Basic Science)

I2.08 [11:54 - 12:06]

Constraining theoretical corrections to Gamow-Teller transition rates / LIM Yeunhwan^{*1}, XAYAVONG Latsamy¹ (¹Yonsei University)

I2.09 [12:06 - 12:18]

Beta-delayed gamma-ray spectroscopy in ¹¹²Mo and ¹¹⁴Mo / HA Jeongsu^{*1,2,3}, SUMIKAMA Toshiyuki^{3,4} (¹Center for Exotic Nuclear Studies, IBS, ²Department of Physics and Astronomy, Seoul National University, ³Nishina Center, RIKEN, ⁴Department of Physics, Tohoku University)

[I3-nu] Hadron Physics and Nuclear Reactions

2024. 04. 26 Friday 10:30~12:18

Room: 103

좌장: **김현철** 인하대학교

Chair: **KIM Hyun-Chul** (Inha University)

I3.01 [10:30 - 10:42]

Measurement of $K^*(892)$ production in the $^{12}\text{C}(K^+\cdot p)$ reaction at 1.8 GeV/c / CHOI Sungwook¹, AHN Jung Keun^{*1} (¹Department of Physics, Korea University)

I3.02 [10:42 - 10:54]

Double ϕ Production in $p\bar{p}$ Reaction near Threshold / AHN Jung Keun^{*1} (¹Department of Physics, Korea University)

I3.03* [10:54 - 11:06]

Search for a new Λ^* resonance near $\eta\Lambda$ threshold / LEE Haein¹, AHN Jung Keun^{*1}, YANG Seongbae¹ (¹Department of Physics, Korea University)

I3.04 [11:06 - 11:18]

Highlight of performance of Barrel Electromagnetic Calorimeter for Electron-Ion Collider /

BOK Jeongsu^{*1}, LIM SangHoon¹, RYU Jaehyeok¹, YOO Hwidong², KIM Beomkyu³, LEE Hyungjun³, BAE Joonsuk³, PARK Sangwoo³, BAE Yunseul³, JO Hyon-Suk⁴, LEE Changhui⁴, KIM Minsuk⁵ (¹Pusan National University, ²Department of Physics, Yonsei University, ³Department of Physics, Sungkyunkwan University, ⁴Department of Physics, Kyungpook National University, ⁵Department of Mathematics and Physics, Gangneung Wonju National University)

I3.05* [11:18 - 11:30]

Polarization Measurement of $K^-p \rightarrow K^+\Xi$ Reactions at $\sqrt{s}=2.15 \text{ GeV}/c^2$ /

AHN Jung Keun^{*1}, KANG Byungmin¹ (¹Department of Physics, Korea University)

I3.06* [11:30 - 11:42]

Investigating the Hidden-Charm Pentaquark P_c through Meson-Baryon Scattering /

CLYMTON Samson¹, KIM Hyun-Chul^{*1} (¹Inha University)

I3.07 [11:42 - 11:54]

A possible $S=+1$ Baryon Resonance in the $K+n \rightarrow K^*0p$ reaction /

LEE Dayoung^{*1}, NAM Seung-il¹ (¹Pukyong National University)

I3.08* [11:54 - 12:06]

Study on fission fragments in proton-induced Uranium-238 reactions by the Langevin

method. / SONG Changhoon¹, SHIN Ik Jae², KIM Youngman^{*3}, ARITOMO Yoshihiro⁴, LEE Chang Hwan¹ (¹Department of Physics, Pusan National University, ²Institute for Rare Isotope Science, IBS, ³Center for Exotic Nuclear Studies, IBS, ⁴Faculty of Science and Engineering, Kindai University)

I3.09 [12:06 - 12:18]

The first direct fusion measurement of the Borromean neutron-halo ${}^6\text{He}$ nucleus near the

Coulomb barrier / CHA Soomi^{*1}, AHN Sunghoon Tony¹, BAE Sunghan¹, GUIMARÃES Valdir²,

HAHN Insik¹, PEREIRA-LOPEZ Xesus¹, RIOS Jesus Lubian³, ROGACHEV Grigory⁴, ZAMORA Juan Carlos⁵, KIM Sunji¹ (¹Center for Exotic Nuclear Studies, IBS, ²Instituto de Fisica, Universidade de Sao Paulo, ³Instituto de Fisica, Universidade Federal Fluminense, ⁴Cyclotron Institute, Texas A&M University, ⁵Michigan state University, NSCL)

[I4-ap] Photonics and Organic Electronics

2024. 04. 26 Friday 10:30~11:30

Room: 104

좌장: 조창희 대구경북과학기술원

Chair: CHO Chang-Hee (DGIST)

I4.01 [10:30 - 10:42]

Impact of the Hexagonal Phase on Multiphoton-Absorption Properties of Mixed-Cation

Halide Perovskite: $\text{FA}_{0.8}\text{MA}_{0.2}\text{PbI}_3$ / CHO Jeong Bin¹, PARK Dae Young², LEE Kyeong-Hyeon^{1,3}, KIM Sungdo³, KIM Yong Soo³, JEONG Mun Seok², JANG Joon Ik^{*1} (¹Physics, Sogang University, ²Physics, Hanyang University, ³Department of Semiconductor Physics and Energy Harvest-Storage Research Center, University of Ulsan)

I4.02 [10:42 - 10:54]

Molecular level modulation by electrolyte gating in stable mixed SAM molecular vertical

junctions / KIM DONGUK¹, 이창준¹, SONG Minwoo¹, NAM Jongwoo¹, LEE Hyemin¹, LEE Takhee^{*1} (¹Department of Physics and Astronomy, Seoul National University)

I4.03* [10:54 - 11:06]

Changes in Nonlinear Optical Properties of Ge-based 2D Ruddlesden-Popper Perovskite

Series / LEE Kyeong-Hyeon¹, LIU Yang², JI Xiaoqin², MAO Lingling², STOUUMPOS Constantinos C.³, JANG Joon Ik^{*1} (¹Physics, Sogang University, ²Chemistry, Southern University of Science and Technology, ³Science and Technology of Materials, University of Crete)

I4.04 [11:06 - 11:18]

Conductivity maxima in electrolyte-gated transistors with molecular doped semiconducting

polymer film / LEE Jiyoul^{*1} (¹Department of Semiconductor Engineering, Pukyong National University)

I4.05 [11:18 - 11:30]

콜로이드 양자점이 내장된 공진 공동 구조를 이용한 고효율의 구조적 형광체 / LEE Tae-Yun¹, PARK

Yeonsang², JEON Heonsu^{*1} (¹Department of Physics and Astronomy, Seoul National University, ²Department of Physics, Chungnam National University)

[I5-ap] Focus: 2-dimensional Van der Waals Ferroelectrics II

2024. 04. 26 Friday 10:30~11:30

Room: 105

좌장: 양상모 서강대학교

Chair: YANG Sang Mo (Sogang University)

I5.01 [10:30 - 11:06]

Control and Synthesis of Moiré and Fully Commensurate Structures in van der Waals

Heterostructures / LEE Gwan-Hyoung^{*1} (¹Department of Materials Science and Engineering, Seoul National University)

I5.02 [11:06 - 11:30]

Polar domain dynamics in 2D sliding ferroelectrics / YOO Hyobin^{*1} (1Department of Physics, Sogang University)

[I6-st] Complex Systems III

2024. 04. 26 Friday 10:30~12:18

Room: 106

좌장: **육순형** 경희대학교

Chair: YOOK Soon Hyung (Kyung Hee University)

I6.01* [10:30 - 10:42]

Uncovering the microscopic mechanisms of congestion spreading in urban road networks / JUNG Jung-Hoon¹, EOM Young-Ho^{*1} (1Department of Physics, University of Seoul)

I6.02* [10:42 - 10:54]

Characterizing spatiotemporal distributions of urban population by percolation critical exponent and fractal dimension / EOM Young-Ho^{*1}, NAM Yunwoo¹ (1Department of Physics, University of Seoul)

I6.03* [10:54 - 11:06]

Consideration of age effect on optimizing hospital distribution to reduce tuberculosis fatalities. / KWON Yongsung¹, LEE Deok-Sun², LEE Mi Jin³, SON Seung-Woo^{*1,3} (1Department of Applied Artificial Intelligence, Hanyang University, ²School of Computational Sciences, KIAS, ³Department of Applied Physics, Hanyang University)

I6.04 [11:06 - 11:18]

Estimating the reproduction number of Plasmodium vivax malaria transmission in South Korea / SON Woo Sik^{*1}, NAH Kyeongah², HWANG Dong Uk¹, LIM Ah-Young³ (1Research team for transmission dynamics of infectious diseases, National Institute for Mathematical Sciences, ²Busan Center for Medical Mathematics, National Institute for Mathematical Sciences, ³Centre for Mathematical Modelling of Infectious Diseases, Faculty of Epidemiology and Population Health, London School of Hygiene & Tropical Medicine)

I6.05 [11:18 - 11:30]

Unveiling Patterns of Infectious Spread through Empirical Mode Decomposition of Mobile Phone Mobility Data / KIM Young Jin^{*1}, CHOI Sunhwa², KIM JuSeong³, KIM Soyoung², JEONG Yeonsu⁴ (1Center for Global R&D Data Analysis, KISTI, ²Innovation Center for Industrial

Mathematics, NIMS, ³Department of applied Artificial Intelligence, Hanyang University,
⁴Department of Applied Physics, Hanyang University)

I6.06* [11:30 - 11:42]

An Investigation into the Effectiveness of ICT (Information and Communication Technology) for Dealing with the COVID-19 Crisis / CHA Yongjun¹, KIM Chansoo*¹ (¹Center for Computational Science / AI-R Dep't, KIST / UST)

I6.07* [11:42 - 11:54]

Mutation-induced infection waves in COVID-19: a newly suggested integrated model / BAEK Seungho¹, KIM Chansoo*¹ (¹Center for Computational Science / AI-R Dep't, KIST / UST)

I6.08* [11:54 - 12:06]

Temporal motifs for spreading patterns of COVID-19 in Republic of Korea / SEO Yeonji^{1,3}, SON Seung-Woo^{2,3}, KWON Okyu⁴, JO Hang-Hyun*¹ (¹Department of Physics, The Catholic University of Korea, ²Department of Applied Physics, Hanyang University, ³Department of Applied Artificial Intelligence, Hanyang University, ⁴Public Data Research Team, NIMS)

I6.09* [12:06 - 12:18]

Game Theoretic Analysis of Epidemic Spread in Networks with Dynamic Contact Rates / GHIM Cheol-Min*¹, KIM WooJoong¹ (¹Department of Physics, UNIST)

[I7-co] Magnetism

2024. 04. 26 Friday 10:30~12:06

Room: 107

좌장: **강창중** 충남대학교

Chair: KANG Chang-Jong (Chungnam National University)

I7.01* [10:30 - 10:42]

Possible time-reversal breaking superconductivity in two-dimensional altermagnet, RuO₂ / HONG SeungBeom¹, KIM Kyoung-Min², PARK Moon Jip*¹ (¹Department of Physics, Hanyang University, ²Center for Theoretical Physics of Complex Systems, Institute for Basic Science)

I7.02 [10:42 - 10:54]

Epitaxial Strain Control of Altermagnetic Order Parameters in RuO₂ thin films / JEONG Seung Gyo², CHOI Inhyeok¹, POURBAHARI Bitu³, OH Jin Young⁴, NAIR Sreejith², BASSIM Nabil³, SEO Ambrose⁵, CHOI Woo Seok⁴, FERNANDES Rafael⁶, BIROL Turan², ZHAO Liyuan⁷, LEE Jong Seok*¹, JALAN Bharat² (¹Department of Physics and Photon Science, GIST, ²Department of Chemical Engineering and Materials Science, University of Minnesota, ³Canadian Centre for Electron

Microscopy and Department of Materials Science and Engineering, McMaster University,
⁴Department of Physics, Sungkyunkwan University, ⁵Department of Physics and Astronomy,
University of Kentucky, ⁶Department of Physics, University of Minnesota, ⁷Department of Physics,
University of Michigan)

17.03* [10:54 - 11:06]

Time-reversal Symmetry Breaking in the Altermagnetic RuO₂ Single Crystal / LEE Seungwook¹,
CHOI Inhyeok¹, LEE Jae Hyuck², JUNG Saegyeol², KIM Changyoung², ZHAO Liuyan³, LEE Jong
Seok^{*1} (¹Department of Physics and Photon Science, GIST, ²Department of Physics and Astronomy,
Seoul National University, ³Department of Physics, University of Michigan, Ann Arbor)

17.04* [11:06 - 11:18]

Rashba effect and spin Hall conductivity in the altermagnetic Janus V₂SeTeO monolayer /
KHAN Imran¹, HONG Ji Sang^{*1} (¹Physics, Pukyong National University)

17.05 [11:18 - 11:30]

Evolution of magnetic texture in a double helical antiferromagnet / JEONG Ki Won¹, HONG
Jae Min¹, SEO Jae Yeon¹, SHIN Hyun Jun¹, LIM Sunghyun¹, MOON Kyungsun¹, KIM Mi Kyung¹, LEE
Nara¹, CHOI Young Jai^{*1} (¹Department of Physics, Yonsei University)

17.06 [11:30 - 11:42]

**Coexistence of static and dynamic local-magnetic fields in an S=3/2 frustrated trillium lattice
antiferromagnet K₂CrTi(PO₄)₃** / KHATUA Joydev^{1,2}, LEE Suheon³, CHOI Kwang Yong^{*2}
(¹Department of Physics, Indian Institute of Technology Madras, ²Department of Physics,
Sungkyunkwan University, ³Center for Artificial Low Dimensional Electronic Systems, Institute for
Basic Science)

17.07* [11:42 - 11:54]

**Probing weak limit of magnetic crystalline anisotropy through spin-flop transition in a van
der Waals antiferromagnet CrPS₄** / SEO Jae Yeon¹, LIM Sunghyun¹, SHIN Hyun Jun¹, JEONG Ki
Won¹, HONG Jae Min¹, MOON Kyungsun¹, KIM Mi Kyung¹, LEE Nara¹, CHOI Young Jai^{*1}
(¹Department of Physics, Yonsei University)

17.08* [11:54 - 12:06]

Self-induced Dynamics of the Squeezed Boson / LEE Jongjun M.¹, LEE Hyun-Woo^{*1} (¹Department
of Physics, POSTECH)

[18-co] Focus: Research on High-Tc Superconductivity Related Systems

2024. 04. 26 Friday 10:30~11:42

Room: 108

좌장: 조연정 경북대학교

Chair: JO Youn Jung (Kyungpook National University)

18.01 [10:30 - 10:54]

Evidence for Charge Delocalization in the Unconventional Superconductor CeRhIn₅ / PARK

Tuson^{*1} (¹Physics, Sungkyunkwan University)

18.02 [10:54 - 11:18]

Optical response of the charge-carrier doped $J_{\text{eff}} = 1/2$ Mott insulators / MOON Soonjae^{*1}

(¹Department of Physics, Hanyang University)

18.03 [11:18 - 11:42]

Pseudogap and repulsive interactions in a two-dimensional dipole liquid / KIM Keun Su^{*1}

(¹Department of Physics, Yonsei University)

[19-se] Sensors, Devices and Applications

2024. 04. 26 Friday 10:30~12:06

Room: 201

좌장: 김태현 울산대학교

Chair: KIM Tae Heon (University of Ulsan)

19.01 [10:30 - 10:42]

Exciton model and reaction rate in DNT gas sensing with photoluminescence quenching

method / NOH DaeGwon¹, OH Eunsoo^{*1} (¹Department of Physics, Chungnam National University)

19.02* [10:42 - 10:54]

Infrared nano-spectroscopy of single extracellular vesicles via photo-induced force

microscopy / KANG Mingu^{1,2}, WOO Huije¹, LEE Eun Seong¹, PARK Kyoung-Duck², JAHNG Junghoon^{*1} (¹Hyperspectral Nano-imaging Lab, Korea Research Institute of Standards and Science (KRISS), ²Physics, Pohang University of Science and Technology (POSTECH))

19.03* [10:54 - 11:06]

Polarity-Reversible 2D MoTe₂ Field-Effect Transistors and Their Logic Applications / HWANG

Do Kyung^{*1,3,5}, YU Byoung-Soo^{1,3}, KIM Wonsik², AHN Jongtae⁴, PARK Soohyung^{2,3} (¹Post-Silicon Semiconductor Institute, Center for Opto-Electronic Materials and Devices, Korea Institute of Science and Technology (KIST), ²Advanced Analysis Center, Korea Institute of Science and Technology (KIST), ³Division of Nano & Information Technology, University of Science and

Technology (UST), ⁴Department of Physics, Changwon National University, ⁵KU-KIST Graduate School of Converging Science and Technology, Korea University)

19.04* [11:06 - 11:18]

Highly integrated optoelectronic memristor in the visible range / KIM Sujeong¹, EOM Seonhye², LEE Hyeongwoo¹, JI Gangseon², CHOI Soo Ho³, JOO Huitae¹, BAE Jinhyuk¹, KIM Ki Kang³, PARK Hyeong-Ryeol², PARK Kyoung-Duck*¹ (¹Physics, POSTECH, ²Physics, UNIST, ³Center for Integrated Nanostructure Physics, Sungkyunkwan University)

19.05 [11:18 - 11:30]

Atomic force microscope-based 3D printing of nanomaterials and in situ Raman spectroscopy / AN Sangmin*¹ (¹Department of Physics, Institute of Photonics and Information Technology, Jeonbuk National University)

19.06 [11:30 - 11:42]

Single-Source Evaporated Perovskites with Organic Interlayers for Amplified Spontaneous Emission / CHIN Sang-Hyun*^{1,2}, CORTECCHIA Daniele³, FORZATTI Michele², FOLPINI Giulia⁴, CHO Changsoon⁵, PETROZZA Annamaria⁴, BOLINK Henk J.² (¹Sungkyunkwan Advanced Institute of NanoTechnology (SAINT), Sungkyunkwan University, ²Instituto de Ciencia Molecular (ICMol), Universidad de Valencia, ³Department of Industrial Chemistry, Università di Bologna, ⁴Center for Nanoscience and Technology, Istituto Italiano di Tecnologia, ⁵Department of Material Science and Engineering, Pohang University of Science and Technology (POSTECH))

19.07 [11:42 - 11:54]

Light-Emitting Electrochemical Transistors Incorporating Poly(9-vinylcarbazole)-Lithium and Copper (II) Doped Super Yellow Emitter / PARK Yu Jung¹, HWANG Hee Kyung², PARK Yejoo², LEE Ju Hyeon³, KIM Han-Ki³, WALKER Bright², SEO Jung Hwa*¹ (¹Physics, University of Seoul, ²Department of Chemistry, Kyung Hee University, ³School of Advanced Materials Science and Engineering, Sungkyunkwan University)

19.08* [11:54 - 12:06]

Naphthalene Diimide-Modified SnO₂ Enabling Low Temperature Processing for Fabrication of Efficient Flexible Perovskite Solar Cells / CHO Il-Wook^{1,2}, KIM Ga Yeon², JANG Soo-Young², OH Jaewon¹, LEE Kwanghee², KANG Hongkyu², RYU Mee-Yi*¹ (¹Department of Physics, Kangwon National University, ²Research Institute for Solar and Sustainable Energies, Gwangju Institute of Science and Technology (GIST))

[110-se] Focus: Properties and Applied Devices of Perovskite Materials

2024. 04. 26 Friday 10:30~12:06

Room: 202

좌장: 최진우 공주대학교

Chair: CHOI Jin Woo (Kongju National University)

I10.01 [10:30 - 10:54]

Stability limits of high efficiency formamidinium lead iodide perovskite / PARK Byung-wook^{*1}, KIM Geonhwa², KAMAL Chinnathambi^{3,4}, MUN BongJin Simon⁵, CAPPEL Ute B.⁶, RENSMO Håkan⁶, KIM Ki-Jeong^{*2}, ODELIUS Michael^{*7}, SEOK Sang Il^{*1} (¹Department of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), ²Beamline Research Division, Pohang Accelerator Laboratory (PAL), Pohang University of Science and Technology (POSTECH), ³Theory and Simulations Laboratory, Theoretical and Computational Physics Section, Raja Ramanna Centre for Advanced Technology, India, ⁴Homi Bhabha National Institute, Training School Complex, India, ⁵Department of Physics and Photon Science, Gwangju Institute of Science and Technology (GIST), ⁶Condensed Matter Physics of Energy Materials, Division of X-ray Photon Science, Department of Physics and Astronomy, Uppsala University, Sweden, ⁷Department of Physics, AlbaNova University Center, Stockholm University, Sweden)

I10.02 [10:54 - 11:18]

Design of Robust Perovskite Quantum Dot to Promote Photocarrier Generation / LEE Hanleem^{*1} (¹Chemistry, Myongji University)

I10.03 [11:18 - 11:42]

Interface Engineering of Perovskite Solar Cells for Indoor Applications / KIM Jong Hyun^{*1} (¹Department of Molecular Science and Technology, Ajou University)

I10.04 [11:42 - 12:06]

Non-Precious Oxygen Evolution Reaction Electrocatalysts for Anion Exchange Membrane Water Electrolysis (음이온교환막 수전해를 위한 비귀금속 산소발생 촉매) / LEE Ji-hoon^{1,2}, YANG Ju-chan^{1,2}, LEE Joo-young^{1,2}, JEONG Jaehoon^{1,2}, CHOI Sung Mook^{*1,2} (¹Korea Institute of Material Science (KIMS), ²University of Science and Technology (UST))

[I11-te] Focus: 예비교사를 위한 물리학 강좌 운영 사례 및 발전 방안

2024. 04. 26 Friday 10:30~12:06

Room: 204

좌장: 박정우 제주대학교

Chair: PARK Jeongwoo (Jeju National University)

I11.01 [10:30 - 10:54]

Your class should be excellent, right? - Burden, expectations, performance, and achievement

around a physics educator's electromagnetism course / JO Kwang Hee^{*1} (¹Department of Physics Education, Chosun University)

I11.02 [10:54 - 11:18]

예비교사를 위한 물리학 교수 경험과 시사점: 일반물리학에서 현대물리학까지 / IM Sungmin^{*1}
(¹Department of Physics Education, Daegu University)

I11.03 [11:18 - 11:42]

교사를 위한 일반상대론: 반성적 고찰 / KIM Hongbin^{*1} (¹Seoul National University)

I11.04 [11:42 - 12:06]

예비교사를 위한 역학 과목의 내용 탐색 / CHEONG Yong Wook^{*1} (¹physics education, Gyeongsang National University)

[I12-pl] Focus: Advanced Beam Physics

2024. 04. 26 Friday 10:30~12:06

Room: 205

좌장: 정모세 포항공과대학교

I12.01 [10:30 - 10:54]

R&D activities on Beam Manipulations and Optimizations for Advanced Accelerator Concept and Light Source, And Their Applications at the PAL-XFEL / KIM Seongyeol^{*1} (¹PAL-XFEL, Pohang Accelerator Laboratory)

I12.02 [10:54 - 11:18]

Beam Phase Space Characterization at KOMAC / LEE Seunghyun^{*1}, KWON Hyeok-Jung¹, KIM DongHwan¹, KIM Han Sung¹ (¹KOMAC, KAERI)

I12.03 [11:18 - 11:42]

Dominance of particle resonances over parametric instabilities in high intensity linear accelerators / JEON Dong-O^{*1}, JANG Ji Ho¹ (¹Institute of Rare Isotope Science, IBS)

I12.04 [11:42 - 12:06]

Advanced Differential Algebraic and Green's Function Techniques for Beam Dynamics Simulations / PARK Chong Shik^{*1} (¹Department of Accelerator Science, Korea University, Sejong)

[I13-as] Gravity/Cosmology and Gravitational Waves/Multi-Messenger Astrophysics

2024. 04. 26 Friday 10:30~12:06

Room: 206

좌장: 강궁원 중앙대학교

Chair: KANG Gungwon (Chung-Ang University)

I13.01 [10:30 - 10:42]

Emergent particles of a de Sitter universe: Thermal interpretation of the stochastic formalism and beyond / KIM TaeHun^{*1} (¹School of Physics, KIAS)

I13.02 [10:42 - 10:54]

Tensions in the Concordance Model of Cosmology / SHAFIELOO Arman^{*1} (¹Theoretical Astrophysics, KASI/UST)

I13.03 [10:54 - 11:06]

CHEX-MATE: CLUster Multi-Probes in Three Dimensions (CLUMP-3D) / KIM Junhan^{*1}, SAYERS Jack², SERENO Mauro³ (¹Department of Physics, KAIST, ²Division of Physics, Mathematics, and Astronomy, Caltech, ³Osservatorio di Astrofisica e Scienza dello Spazio di Bologna, INAF)

I13.04 [11:06 - 11:18]

Gravitational waves by particle motion around a wormhole / KIM Sung Won^{*1} (¹Science Education, Ewha Womans University)

I13.05 [11:18 - 11:30]

Ringdown gravitational waves from close scattering of two black holes / HYUN Young-Hwan^{*1}, BAE Yeong-Bok², KANG Gungwon² (¹Center for Theoretical Astronomy, KASI, ²Department of Physics, Chung-Ang University)

I13.06 [11:30 - 11:42]

Tidal deformation of black holes in scattering orbits / KANG Gungwon^{*1}, HYUN Young-Hwan², BAE Yeong-Bok¹ (¹Dept. of Physics, Chung-Ang University, ²Center for theoretical astronomy, KASI)

I13.07 [11:42 - 11:54]

A Novel Gravitational Wave Detection Method Using SKA-Low Antennas / PARK Chan^{*1} (¹Astronomy Program, Seoul National University)

I13.08 [11:54 - 12:06]

Improvement plans for the next-generation UFFO system
/ HONG Gihan¹, WON Eunil^{*1}, PARK IL Hung² (¹Department of Physics, Korea University, ²Physics, Sungkyunkwan University)

[I14-at] AMP V - Quantum Sensing

2024. 04. 26 Friday 10:30~11:54

Room: 209

좌장: 이선경 한국표준과학연구원

Chair: LEE Sun Kyung (KRISS)

I14.01* [10:30 - 10:42]

Probing and controlling many-body dipolar interactions between electron spins in diamond / YOON Taewoong^{1,2}, CHA Myungjun^{1,2}, CHOI Hyunyong^{*1,2} (¹Physics and Astronomy, Seoul National University, ²Institute of Applied Physics, Seoul National University)

I14.02* [10:42 - 10:54]

Toward the quantum sensing applications of the multi-qubit register in a diamond / KIM Kihwan¹, NA Yisoo¹, LEE Donghun^{*1} (¹Physics, Korea University)

I14.03 [10:54 - 11:06]

Charge State Readout and Initialization of 20 nm Depth Diamond Nitrogen-Vacancy Centers / NA Yisoo¹, KIM Kihwan¹, LEE Donghun^{*1} (¹Physics, Korea University)

I14.04 [11:06 - 11:18]

Coherence time enhancement of the ensemble of diamond NV centers / LEE Donghun^{*1}, PARK Chanhu¹, JAEBUM Park¹, CHOI Woo kyoung¹ (¹Physics, Korea University)

I14.05 [11:18 - 11:30]

Quantum-enhanced multiple-phase estimation using multi-mode NOON states in lossy environment / NAMKUNG Min¹, KIM Dong-Hyun², HONG Seongjin³, KIM Yong-Su^{1,4}, LEE Changhyoup⁵, LIM Hyang-Tag^{*1,4} (¹Center for Quantum Information, KIST, ²Department of Physics, Yonsei University, ³Department of Physics, Chung-Ang University, ⁴Division of Nanoscience and Technology, KIST School, UST, ⁵Quantum Technology Institute, KRISS)

I14.06* [11:30 - 11:42]

Quantum Metrology under Coarse-Grained Measurement / RA Young-Sik^{*1}, GO Byeong-Yoon¹, GWAK Geunhee¹, YOON Young-Do¹, PARK Jiyong² (¹Department of Physics, KAIST, ²School of Basic Sciences, Hanbat National University)

I14.07* [11:42 - 11:54]

Experimental quantum state tomography of multimode Gaussian states / ROH Chan^{*1}, GWAK Geunhee¹, YOON Young-Do¹, RA Young-Sik¹ (¹Department of physics, KAIST)

[I15-qu] Focus: Innovating Quantum Communications II

2024. 04. 26 Friday 10:30~11:54

Room: 301

좌장: **신희득** 포항공과대학교

Chair: SHIN Heedeuk (POSTECH)

I15.01 [10:30 - 11:06]

Integrated photonics using a hybrid material platform / HAN Jae-Hoon^{*1} (¹Center of Opto-electronic devices and materials, KIST)

I15.02 [11:06 - 11:42]

Noise-resistant quantum communications with hyperentanglement in entangled photon state / KIM Jin-Hun^{*1,2}, KIM Yosep², IM Dong-gil², LEE Chung-Hyun², CHAE Jin-Woo², KIM Yoon-Ho², SCARCELLI Giuliano³ (¹Crypto Research Center, The affiliated institute of ETRI, ²Physics department, Pohang University of Science and Technology (POSTECH), ³Fischell Department of Bioengineering, University of Maryland)

I15.03* [11:42 - 11:54]

Port-based entanglement teleportation via noisy resource states / JEONG Kabgyun^{*2,3}, KIM Haeum¹ (¹Department of Physics, Korea University, ²Department of Mathematical Sciences, Seoul National University, ³School of Computational Sciences, Korea Institute for Advanced Study)

Session J

[J1-pa] Phenomenology II

2024. 04. 26 Friday 13:00~14:12

Room: 101

좌장: **임상희** 기초과학연구원

Chair: IM Sang Hui (Institute for Basic Science)

J1.01 [13:00 - 13:12]

Dark matter production and gravitational waves in time-dependent backgrounds / LEE Hyun Min^{*1} (¹Department of Physics, Chung-Ang University)

J1.02 [13:12 - 13:24]

Freeze-in Inelastic Dark Matter, H_0 Tension and Detection Prospects / CHO Wonsub^{*1}, CHOI Ki-Young¹, MAHAPATRA Satyabrata¹ (¹Department of Physics, Sungkyunkwan University)

J1.03 [13:24 - 13:36]

Resonant Leptogenesis in Compact Remnants / LU Philip^{*1}, TAKHISTOV Volodymyr², ARAKAWA Jason³ (¹Physics, KIAS, ²QUP, High Energy Accelerator Research Organization, KEK, ³Physics, University of Delaware)

J1.04 [13:36 - 13:48]

Second leptogenesis for large baryon-lepton asymmetry discrepancy / CHOEO YeolLin¹, ENOMOTO Kazuki¹, KIM Yechan¹, LEE Hye-Sung^{*1} (¹Department of Physics, KAIST)

J1.05 [13:48 - 14:00]

A simple unified framework for cosmology and particle physics / PARK Wan Il^{*1} (¹Division of Science Education (Physics), Jeonbuk National University)

J1.06 [14:00 - 14:12]

Qubit loss together with computational qubit error and lattice gauge theory / KIM Se Yong^{*1} (¹Department of Physics, Sejong University)

[J4-ap] Spin and Magnetism

2024. 04. 26 Friday 13:00~13:48

Room: 104

좌장: 김상훈 울산대학교

Chair: KIM Sanghoon (University of Ulsan)

J4.01 [13:00 - 13:12]

Spin Disproportionation via Auophilicity in Iron Organic Coordination Complex / MOHAMED Ahmed Yousef¹, CHO Deok-Yong^{*1} (¹Department of Physics, Jeonbuk National University)

J4.02* [13:12 - 13:24]

Tailoring Dzyaloshinskii-Moriya interaction by modulating the adjacent interface between ferromagnetic and heavy metal layers / KIM Minhwan^{1,2}, PARK Jung-Hyun², LEE Seong-Hyub^{1,2}, YU Ji-Sung², CHOE Sug Bong², KIM Duck-Ho^{*1} (¹Center for Spintronics, Korea Institute of Science and Technology (KIST), ²Department of Physics and Astronomy, Seoul National University)

J4.03 [13:24 - 13:36]

Emergent nonlinear modes in coherent magnon circuits detected at ultrahigh frequency resolution / AN Kyongmo^{*1} (¹Institute of quantum technology, KRISS)

J4.04 [13:36 - 13:48]

Position error-free control of magnetic domain wall devices via spin-orbit torque modulation

/ LEE SeongHyub^{1,2}, KIM Myeonghoe¹, WHANG Hyun-Seok¹, NAM Yune-Seok¹, PARK Jung-Hyun¹, KIM Kitae¹, KIM Minhwan¹, SHIN Jiho¹, YU Ji-Sung¹, YOON Jaesung¹, CHANG Jun-Young², KIM Duck-Ho², CHOE Sug-Bong^{*1} (¹Department of physics and astronomy, Seoul National University, ²Center for Spintronics, Korea Institute of Science and Technology (KIST))

[J5-ap] 2D and Nano Materials

2024. 04. 26 Friday 13:00~14:48

Room: 105

좌장: **백현준** 서강대학교

Chair: BAEK Hyeonjun (Sogang University)

J5.01* [13:00 - 13:12]

Unveiling the Impact of Tip Geometry on Confined Water Structure: A Molecular Dynamics

Study of Carbon Nanocones / CHUN Ki Chan¹, LEE Yeeun², JEONG Jian², KIM Gunn^{*1}, JANG Soonmin² (¹Department of Physics and Astronomy, Sejong University, ²Department of Chemistry, Sejong University)

J5.02* [13:12 - 13:24]

Gate-tunable nanostructure device at monolayer graphene superlattice with hBN / CHOI Won

Beom¹, JANG Joonho^{*1} (¹Department of Physics, Seoul National University)

J5.03* [13:24 - 13:36]

Thickness dependent Ferromagnetic and Transverse Transport Properties of MnSe₂: A First-principle Study / KHAN Imran¹, HONG Ji Sang^{*1} (¹Physics, Pukyong National University)

J5.04* [13:36 - 13:48]

Investigating Optical Anisotropy of Substrates induced by Mie-scattering via Scattering-type

Scanning Optical Microscopy / HAN Jaewon¹, WOO Hwi Je^{1,2}, JI Sangmin¹, SONG Young Jae^{*1}

(¹SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ²Korea Research Institute of Standards and Science, KRISS)

J5.05 [13:48 - 14:00]

Machine learning-assisted analysis of transition metal dichalcogenide thin-film growth / KIM

Hyuk Jin¹, TAEGYU Rhee^{1,2}, CHONG Minsu¹, SEOH Hyo Won^{1,2}, KHIM Yeng Gwang^{1,2}, CHANG Young Jun^{*1,2,3} (¹Department of Physics, University of Seoul, ²Department of Smart cities, University of Seoul, ³Department of Intelligent Semiconductor Engineering, University of Seoul)

J5.06* [14:00 - 14:12]

Direct observation of room temperature magnetic skyrmion motion driven by ultra-low current density in a van der Waals ferromagnet / JI Yubin¹, YANG Seungmo², AHN Hyo-Bin³, MOON Kyoung-Woong², JU Tae-Seong², IM Mi-Young⁵, HAN Hee-Sung^{5,6}, LEE Jisung⁷, PARK Seung-Young⁷, LEE Changgu⁴, KIM Kab-Jin^{*1}, HWANG Chanyong² (¹Department of Physics, KAIST, ²Quantum Spin Team, Korea Research Institute of Standards and Science, ³SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, ⁴School of Mechanical Engineering, Sungkyunkwan University, ⁵Center for X-ray Optics, Lawrence Berkeley National Laboratory, ⁶Department of Materials Science and Engineering, Korea National University of Transportation, ⁷Center for Scientific Instrumentation, Korea Basic Science Institute)

J5.07* [14:12 - 14:24]

Mass-loaded graphene nano-electromechanical drums; simulation study and observation of resonance mode / JE YUGYEONG¹, SHIN DONG HOON², JEONG HYUNJEONG¹, LEE Sang-Wook^{*1} (¹Department of Physics, Ewha Womans University, ²Kavli Institute of Nanoscience, Delft University of Technology)

J5.08* [14:24 - 14:36]

New polytypism in GeSe_{2-x}Te_x nanowires via twinning and interlayer twist / KANG Hani¹, KIM Dong-gyu¹, LEE Kihyun¹, LEE Yangjin¹, JANG Myeongjin¹, JUNG Joong-Eon¹, KIM Kwanpyo^{*1} (¹Physics, Yonsei University)

J5.09 [14:36 - 14:48]

Exploring 1D Nanostructures via Nanotube Encapsulation: Tetrahedral GeX₂ and Magnetic MX₃ Single-Chains / LEE Yangjin^{1,2,3,4}, CHOI Young Woo^{2,3}, LEE Kihyun^{1,4}, SONG Chengyu⁵, ERCIUS Peter⁵, COHEN Marvin L.², ZETTL Alex^{2,3}, KIM Kwanpyo^{*1,4} (¹Physics, Yonsei University, ²Department of Physics, UC Berkeley, ³Materials Sciences Division, Lawrence Berkeley National Lab, ⁴Center for Nanomedicine, Institute for Basic Science, ⁵National Center for Electron Microscopy, Lawrence Berkeley National Lab)

[J6-st] Soft Matter & Biophysics

2024. 04. 26 Friday 13:00~14:48

Room: 106

좌장: 이남경 세종대학교

Chair: LEE Nam Kyung (Sejong University)

J6.01 [13:00 - 13:12]

Complex Self-Consistent Field Theory: A Hidden Symmetry of Polymer Field Theory / KIM Jaeup^{*1} (¹Department of Physics, UNIST)

J6.02 [13:12 - 13:24]

The geometry of the confinement can expedite rapid target search / KIM Won Kyu^{*1} (¹School of Computational Sciences, Korea Institute for Advanced Study (KIAS))

J6.03* [13:24 - 13:36]

Bending elasticity of the reversible freely jointed chain / YI Minsu¹, LEE Dongju¹, BENETATOS Panayotis^{*1} (¹Department of Physics, Kyungpook National University)

J6.04* [13:36 - 13:48]

Stretching multi-state flexible chains and loops / NOH Geunho¹, BENETATOS Panayotis^{*1} (¹Department of Physics, Kyungpook National University)

J6.05 [13:48 - 14:00]

Hydrodynamic pursuit and cooperative behaviors of self-steering microswimmers / GOH Segun^{*1}, WINKLER Roland G.¹, GOMPPER Gerhard¹ (¹Theoretical Physics of Living Matter (IBI-5/IAS-2), Forschungszentrum Jülich)

J6.06* [14:00 - 14:12]

Phase separation of active particles with chemokinesis and fuel depletion / OH Yongjae¹, KWON Euijoon¹, BAEK Yongjoo^{*1} (¹Department of Physics and Astronomy, Seoul National University)

J6.07 [14:12 - 14:24]

Derivation of an efficient and thermodynamically consistent lattice Monte Carlo method for active particles / KIM Kiwon¹, KWON Euijoon¹, BAEK Yongjoo^{*1} (¹Department of Physics and Astronomy, Seoul National University)

J6.08 [14:24 - 14:36]

Learning the underlying dynamics of underdamped Langevin systems via Bayesian neural networks / BAE Youngkyoung^{1,2}, HA Seung Woong³, JEONG Hawoong^{*1} (¹Physics Department, KAIST, ²Physics & Astronomy Department, Seoul National University, ³Applied Complexity, Santa Fe Institute)

J6.09 [14:36 - 14:48]

Quantitative Analysis of Competitive Harmony between Direct and Indirect Pathways in A Spiking Neural Network of The Basal Ganglia / KIM Sang-Yoon¹, LIM Woochang^{*1} (¹Department of Science Education, Daegu National University Of Education)

[J7-co] Strongly Correlated Systems/Dielectrics/Functional Oxides

2024. 04. 26 Friday 13:00~14:12

Room: 107

좌장: **손창희** 울산과학기술원

Chair: SOHN Changhee (UNIST)

J7.01* [13:00 - 13:12]

Unveiling Topological Polar Structures in Ferroelectric Nanoparticles via Atomic Electron

Tomography / YANG Yongsoo^{*1}, JEONG Chaehwa¹, LEE Juhyeok¹, JO Hyesung¹, OH Jaewhan¹, BAIK Hionsuck², GO Kyoung-June³, SON Junwoo³, CHOI Si-Young^{3,4}, PROSANDEEV Sergey⁵, BELLAICHE Laurent⁵ (¹Department of Physics, KAIST, ²Seoul center, KBSI, ³Department of Materials Science and Engineering, POSTECH, ⁴Center for Van der Waals Quantum Solids, Institute for Basic Science, ⁵Physics Department and Institute for Nanoscience and Engineering, University of Arkansas)

J7.02 [13:12 - 13:24]

Enhanced temperature stable dielectric property and energy storage performance of BNKT-

BBN solid solution ceramics / BU Sang Don^{*1}, CHO Sam Yeon¹, HAN Seung-Hun¹, KIM Byung Hoon², LEE Min-Ku², WI Sang Won³, LEE Yun Sang³ (¹Department of Physics, Jeonbuk National University, ²Smart Structural Safety and Prognosis Research Division, Korea Atomic Energy Research Institute, ³Department of Physics, Soongsil University)

J7.03* [13:24 - 13:36]

Emergent ferromagnetism in CaRuO₃/Sr₂RuO₄ superlattices / JI-MIN Hwang¹, LEE SANG A¹, HWANG Jae-Yeol^{*1} (¹Department of Physics, Pukyong National University)

J7.04* [13:36 - 13:48]

Optimization of large-area M2 Phase Stabilization in VO₂ thin films at room temperature through novel strain engineering / MCGOWEN Lance Christian¹, CHOI Ha Young¹, KANG Dae Joon^{*1} (¹Sungkyunkwan University)

J7.05* [13:48 - 14:00]

Synthesis and properties of β -Ti₃O₅ and Al-doped Ti₃O₅ with arc-melting furnace / OK Jong Mok^{*1}, KONG Minsik¹, KIM Seohee¹, KIM Min Jae¹, KONG Mungjun¹ (¹Department of Physics, Pusan National University)

J7.06* [14:00 - 14:12]

Beating effect in Aharonov-Bohm oscillations of Topological insulator Nanowire / KWON Du Hyuk^{1,2}, DOH Yong-Joo³, PARK Wanki⁴, CHOI Sang-Jun⁵, BAE Myung-Ho², SONG Jong Hyun^{*1}

(¹Department of Physics, Chungnam National University, ²Quantum device group, KRISS, ³Department of Physics and Photon Science, GIST, ⁴Department of Physics, KAIST, ⁵Department of Physics Education, Kongju National University)

[J8-co] Superconductivity

2024. 04. 26 Friday 13:00~14:24

Room: 108

좌장: **조두희** 연세대학교

Chair: CHO Doohee (Yonsei University)

J8.01* [13:00 - 13:12]

Single crystal growth of topological superconductor candidate Ti_3Sb / OK Jong Mok^{*1}, KIM Seohee¹, KONG Minsik¹, BENJAMIN Sherman², KIM Dohun³, KIM Youngwook³, YOON Sangmoon⁴
(¹Department of Physics, Pusan National University, ²Department of Physics and Chemistry, National High Magnetic Field Laboratory, USA, ³Department of Physics and Chemistry, DGIST, ⁴Department of Physics, Gachon University)

J8.02 [13:12 - 13:24]

Study on the evolution of the superconducting gap structures via heat transport measurement / NAM Kiwan¹, KIM Kwang-Tak¹, SUR Yeahan¹, KIM Kee Hoon^{*1} (¹Department of physics and astronomy, Seoul National University)

J8.03* [13:24 - 13:36]

Progress in Searching for Majorana Bound State by Shapiro-step measurement in $FeTe_{0.55}Se_{0.45}$ Josephson Junction / LEE Gil-Ho^{*1}, SHIN Seung-Hyun¹, GU Genda² (¹Department of Physics, POSTECH, ²Condensed Matter Physics and Materials Science Department, Brookhaven National Lab)

J8.04* [13:36 - 13:48]

Topological Domain-Wall States Beyond Tenfold Classification: Quantized Polarization and Majorana Fermions / KANG Myungjun¹, CHEON Sang Mo^{*1}, HAN Sang-Hoon¹, PARK Moon Jip¹
(¹Department of Physics, Hanyang University)

J8.05 [13:48 - 14:00]

Spontaneously broken $U(1)$ symmetry and quantum locality / KANG Kicheon^{*1} (¹Department of Physics, Chonnam National University)

J8.06 [14:00 - 14:12]

Nonreciprocal transport in U(1) gauge theory of high-Tc cuprates / OH Taekoo^{*1}, NAGAOSA Naoto¹ (¹Center for Emergent Matter Science, RIKEN)

J8.07* [14:12 - 14:24]

Interpreting X-ray absorption spectra of Vanadyl Phthalocyanines Spin Qubit Candidates using a Machine Learning-Assisted Approach / LEE Jaehyun^{1,3}, URDANIZ Corina^{1,3}, REALE Stefano^{1,3,4}, NOH Kyungju^{1,2}, KRYLOV Denis^{1,3}, DOLL Andrin⁵, COLAZZO Luciano^{1,3}, BAE Yujeong^{1,2}, WOLF Christoph^{1,3}, DONATI Fabio^{*1,2} (¹Center for Quantum Nanoscience, IBS, ²Department of Physics, Ewha Womans University, ³Center for Quantum Nanoscience, Ewha Womans University, ⁴Department of Energy, Politecnico di Milano, ⁵Swiss Light Source, Paul Scherrer Institut)

[J13-as] High Energy Astrophysics / Compact Objects

2024. 04. 26 Friday 13:00~14:48

Room: 206

좌장: **노창동** 성균관대학교

Chair: RHO Chang Dong (Sungkyunkwan University)

J13.01 [13:00 - 13:12]

Halo-independent bounds on Inelastic Dark Matter / SCOPEL Stefano^{*1}, KAR Arpan¹, KANG Sunghyun¹ (¹Physics, Sogang University)

J13.02* [13:12 - 13:24]

WIMP Constraints from X-ray binaries / SCOPEL Stefano^{*1}, KIM Sang Pyo², KAR Arpan¹, KIM Hyomin¹ (¹Physics, Sogang University, ²Physics, Kunsan National University)

J13.03* [13:24 - 13:36]

Search for BSM interactions of Dark Matter with high-energy neutrinos from distant point sources in the IceCube Neutrino Telescope / KANG Woosik^{*1} (¹Department of Physics, Sungkyunkwan University)

J13.04 [13:36 - 13:48]

Most energetic cosmic ray observed by the Telescope Array experiment / SAGAWA Hiroyuki², LEE Myeong Jae^{*1}, PARK Il Heung¹, CHEON Byung-Gu³, KIM Hang-Bae³ (¹Sungkyunkwan University, ²Institute for Cosmic Ray Research (ICRR), University of Tokyo, ³Department of Physics, Hanyang University)

J13.05* [13:48 - 14:00]

Advancing Air Shower Reconstruction at the HAWC Observatory using Deep Learning / PARK Inkyu^{*1}, LEE Jason Sang Hun¹, WATSON Ian James¹, CHOI Myeonghun¹ (¹University of Seoul)

J13.06* [14:00 - 14:12]

Study of Low-mass Microquasars with HAWC / SHIN Minji^{*1}, RHO Chang Dong¹ (¹Department of Physics, Sungkyunkwan University)

J13.07* [14:12 - 14:24]

DIVING INTO AGN VARIABILITY VIA NICER / KIM Jungeun^{*1}, RANI Bindu² (¹Department of Physics, KAIST, ²Goddard Space Flight Center, NASA)

J13.08 [14:24 - 14:36]

Understanding the role of heavy elements in forming the kilonova spectrum and lightcurve. / TAK Donggeun^{*1}, UHM Z. Lucas² (¹The research institute of basic sciences, Seoul National University, ²Theoretical Astrophysics Group , KASI)

J13.09 [14:36 - 14:48]

Evidence of High Latitude Emission in the Prompt Phase of GRBs: How Far from the Central Engine are the GRBs Produced? / UHM Z. Lucas^{*1} (¹Center for Theoretical Astronomy, KASI)

[J15-qu] Pioneer: Coherent Quantum Control and Quantum Computing IV

2024. 04. 26 Friday 13:00~14:48

Room: 301

좌장: **김동규** KAIST

Chair: KIM Donggyu (KAIST)

J15.01 [13:00 - 13:24]

Efficient simulation of integrated quantum photonics / SOHN Youngik^{*1} (¹School of Electrical Engineering, KAIST)

J15.02 [13:24 - 14:00]

Approaching the frontier of analog quantum advantage / CHOI Joonhee^{*1} (¹Electrical Engineering, Stanford University)

J15.03 [14:00 - 14:24]

A Rydberg-atom approach to quantized spin-wave simulations / AHN Jaewook^{*1} (¹Physics, KAIST)

J15.04 [14:24 - 14:48]

Measuring non-local order with error-corrected quantum gas microscopes / CHOI Jae Yoon^{*1}

(¹Physics Department, KAIST)

The Korean Physical Society

포스터발표논문 시간표

(Poster Session Schedule)

Poster Sessions P1

[P1-pa] Particles and Fields: Field and String & Accelerator-based Particle Physics Experiments

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-pa.001

scalar field fluctuations on spindle / KANG Myeong Bo^{*1}, KIM Nakwoo¹, HEO Junhyeon¹, SHIN Hoseob¹ (¹Department of Physics, Graduate School, Kyung Hee University)

P1-pa.002*

Studies on Neutrino Kinematics Using DeeLeMa Method in the CMS Experiment / YU Intae^{*1}, LEE Jinha¹, PARK Seongchan², BAN Kayoung² (¹Department of Physics, Sungkyunkwan University, ²Department of Physics, Yonsei University)

P1-pa.003

Pre-Kicker Study in JSNS2 Experiment / PARK Hyeon Woo^{*1}, JOO K.K.¹, KIM S.Y.¹, CHOI J.Y.¹ (¹Department of physics, Chonnam National University)

P1-pa.004

Study of KDAR neutrino using MC simulation in JSNS² / YEO Insung^{*1}, JANG Jeeseung² (¹Laboratory for high energy physics, Dongshin University, ²Gwangju Institute of Science and Technology, GIST)

P1-pa.005

Monitoring PMT gain with dark hits in the JSNS² experiment / PARK RyeongGyoon^{*1}, JOO Kyung Kwang¹, KIM Jae Yool¹, LIM In Taek¹, MOON Dong Ho¹, PARK H. W.¹, KIM Eun Joo², CHOI J. H.³, PAC Myoung Youl³, YEO Insung³, JANG Jee-Seung⁴, KIM Wooyoung⁵, PARK Jungsic⁵, GOH Junghwan⁶, HWANG Wonsang⁶, YOO Chang Hyun⁶, JANG Han Il⁷, CHOI Ji Young⁷, KANG S. K.⁸, CHEOUN Myung Ki⁹, LEE C. Y.⁹, JUNG Da Eun¹⁰, YU Intae¹⁰ (¹Department of Physics, Chonnam National University, ²Division of Science Education, Jeonbuk National University, ³Laboratory for High Energy Physics, Dongshin University, ⁴Department of Physics and Optical Science, GIST, ⁵Department of Physics, Kyungpook National University, ⁶Department of Physics, Kyung Hee University, ⁷Department of Fire Safety, Seoyeong University, ⁸School of Liberal Arts, Seoul

National University of Science and Technology, ⁹Department of Physics, Soongsil University,
¹⁰Department of Physics, Sungkyunkwan University)

P1-pa.006*

Slow control and monitoring system for the JSNS2-II experiment. / PARK Jungsic^{*1}, RYU Jiwon¹,
PARK Byoungjun¹, PARK Jisu², PARK RyeongGyoon², CHOI Juenho³, YEO Insung³ (¹Department of
Physics, Kyungpook National University, ²Department of Physics, Chonnam National University,
³Laboratory for high energy physics, Dongshin University)

P1-pa.007

GdLS stability for JSNS2-II detector / PARK Hyeon Woo¹, JOO KK^{*1}, KIM Sang Yong¹, CHOI Ji
Young¹, JUNG Da Bin¹ (¹Department of physics, Chonnam National University)

P1-pa.008

The lineshape study of X(3872) with Belle data / CHOI Soo Kyung^{*1}, JANG Eunji^{1,2}, OLSEN
Stephen Lars³ (¹CAU-HEP, Chung-Ang University, ²Department of Physics, Gyeongsang National
University, ³CUP, IBS)

P1-pa.009

Upcoming Dark Sector Search in Belle II / LEE Chanyoung¹, KIM Hyuna¹, KWON Youngjoon^{*1}
(¹Physics, Yonsei University)

P1-pa.010

Search for lepton-flavor-violating $\tau^- \rightarrow \ell^- \pi^0$ decays at Belle II / CHEON Byung Gu^{*1}, CHO
Han Eol¹, KIM CHEOLHUN¹, LEE Myeong Jae², LEE Hobin³ (¹Department of Physics, Hanyang
University, ²Department of Physics, Sungkyunkwan University, ³Department of Physics and
Astronomy, Seoul National University)

P1-pa.011*

Studies of the Low Gain Avalanche Diode (LGAD) Sensor Characteristics. / MOON Chang-
Seong^{*1}, KIM JongYeob¹, NAM HoKyeong¹, HONG ByeongJin², YOO JaeHyeok², LEE KyungMin²
(¹Department of Physics, Kyungpook National University, ²Department of Physics, Korea University)

P1-pa.012

Study of RPC Efficiency using Tag-and-Probe method with Run-3 data in CMS experiment /
SHIN JongWon¹, GOH Junghwan^{*1}, YANG Seungjin¹ (¹Department of Physics, Kyung Hee
University)

P1-pa.013*

ME0 segment reconstruction using deep learning / PARK Inkyu^{*1}, KIM Yeonju¹, LEE Jason Sang Hun¹, WATSON Ian James¹, HEO WooHyeon¹, KANG Yechan¹ (¹University of Seoul)

P1-pa.014*

Deep Learning for Rare Top Decay $t \rightarrow sW$ at the LHC / HEO Jeewon¹, JANG Woojin¹, LEE Jason Sang Hun¹, PARK Inkyu^{*1}, ROH Youn Jung¹, WATSON Ian James¹, YANG Seungjin² (¹University of Seoul, ²Department of Physics, Kyung Hee University)

P1-pa.015*

Exploring the DAMSA Experiment: Simulating Particle Generation and Beam-Related Neutron Background / YANG Un-ki^{*1}, OH Minseok¹ (¹Department of physics and astronomy, Seoul National University)

[P1-nu] Nuclear Physics

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-nu.001*

Resonance production in-and-out of jets in pp collisions @ 13.6 TeV with ALICE / LEE JIMUN^{*1}, OH Saehanseul¹, NASSIRPOUR Adrian Fereydon¹ (¹physics department, Sejong University)

P1-nu.002*

Semi-inclusive jet mass measurement in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV with STAR / KANG JeongMyung^{*1}, OH Saehanseul¹ (¹Dept of Physics & Astronomy, Sejong University)

P1-nu.003*

Inclusive prompt photon measurement in proton-proton collisions at $\sqrt{s} = 200$ GeV with STAR / OH Saehanseul^{*1}, PARK YEONWOO¹ (¹Department of Physics and Astronomy, Sejong University)

P1-nu.004*

High purity phi-meson identification using machine learning in hadron-hadron collisions / OH Changhyun¹, NASSIRPOUR Adrian Fereydon¹, OH Saehanseul^{*1,2} (¹Department of Physics and Astronomy, Sejong University, ²Nuclear Science Division, Lawrence Berkeley National Laboratory)

P1-nu.005

Charged particle pseudorapidity densities in pp at $\sqrt{s} = 13.6$ TeV and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV with ALICE / KIM Beom Kyu^{*1}, BAE Yunseul¹, BAE Joonsuk¹, LEE Hyungjun¹
(¹Physics Department, Sungkyunkwan University)

P1-nu.006

Effects of hadronization on jet observables in high-energy particle collisions / OH Saehanseul^{*1} (¹Department of Physics and Astronomy, Sejong University)

P1-nu.007

A DVCS experiment with the NPS detector at Jefferson Lab / LEE Changhui¹, SONG Tae-Hee¹, JO Hyon-Suk^{*1} (¹Department of Physics, Kyungpook National University)

P1-nu.008

Study of trends in nuclear structure according to neutron numbers of rare earth nuclei within the framework of the IBM / LEE Su-youn^{*1} (¹Division of Basic Sciences, Dong-Eui University)

P1-nu.009

Development of Nano-material Based Flexible Radiation Sensor
/ PARK Jeong Min¹, KANG Chang Goo^{*1}, KIM Sujin¹, YEO Sunmog¹, JANG Jong Dae¹ (¹KAERI)

P1-nu.010*

Radiophotoluminescence for dark matter search experiment / KIM Hong Joo^{*1}, CHO Jaeyoung^{1,2} (¹Department of Physics, Kyungpook National University, ²Center for Underground Physics, IBS)

P1-nu.011

The research of secondary beam by carbon ion therapy with PMMA / KO Jew U.^{*1}, LIU Dong¹, HWANG Jongseok¹, KO Young joon¹, PARK Sohyun¹, WOO Jong-Kwan¹ (¹Department of Physics, Jeju National University)

P1-nu.012*

Tracking Performance of AT-TPC Detector Using Hough Transform and Monte Carlo Simulation / KIM Yongsun^{*1}, HWANG Seonggeun¹, CHEON Yechan¹, LEE Seunghwan¹ (¹Sejong University)

P1-nu.013

Studying the radiation hardness of glue for ALICE 3 outer tracker / YANG SeungHwan^{*1},

KWEON Min Jung¹, LIM SangHoon², KIM Jiyoung¹ (¹physics, Inha University, ²physics, Pusan National University)

P1-nu.014

Development of Neutron Detector for (p,n) Reactions / AHN Jung Keun^{*1}, CHAE Soo Ho¹
(¹Department of Physics, Korea University)

P1-nu.015

Development of the Field Cage for an active-target Time Projection Chamber / AHN Jung Keun^{*1}, KANG SeoHyeon¹ (¹Department of Physics, Korea University)

[P1-co.1] Condensed Matter Physics: Magnetism/Superconductivity

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-co.101*

Investigation of altermagnetic band structure in RuO₂ thin film / KIM Changyoung^{*1}
(¹Department of Physics and Astronomy, Seoul National University)

P1-co.102

Tuning the electronic structure of FeTe via epitaxial strain / KIM Changyoung^{*1}, LEE Sangjae¹, SONG Hyunjee¹ (¹Department of Physics and Astronomy, Seoul National University)

P1-co.103*

Magnetic anisotropy in a frustrated antiferromagnet / HONG Jae Min¹, JEONG Ki Won¹, KIM Mi Kyung¹, SHIN Hyun Jun¹, SEO Jae Yeon¹, LIM Sunghyun¹, LEE Nara¹, MOON Kyungsun¹, CHOI Young Jai^{*1} (¹Department of Physics, Yonsei University)

P1-co.104

Spin-flip transitions in antiferromagnetic NdAlSi / LIM Sunghyun¹, SEO Jae Yeon¹, JEONG Ki Won¹, HONG Jae Min¹, SHIN Hyun Jun¹, MOON Kyungsun¹, KIM Mi Kyung¹, LEE Nara¹, CHOI Young Jai^{*1} (¹Department of Physics, Yonsei University)

P1-co.105*

Influence of Spin Polarization on the Flat Bands in Kagome Ferrimagnet GdCr₆Ge₆ / PARK Jaemun¹, CHO Beopgil¹, PARK Keeseong^{*1} (¹Department of Physics and Chemistry, DGIST)

P1-co.106*

Biaxial tensile strain effect of two-dimensional Fe₃GaTe₂

/ HONG Ji Sang^{*1}, HAN Jinmyoung¹ (¹Physics, Pukyong National University)

P1-co.107

Investigation of Fe-doping effect in MoS₂ layers / NGUYEN Dan Chi^{1,5}, PHAM Cao Huyen Trang¹, DO Thi Nga^{1,5}, TRAN Thanh Xuan^{2,3}, KIM Soo Min⁴, KIM Ji Hee³, KIM Huyn Jung², KIM Tae Hee^{*1,5} (¹Department of Physics, Ewha Womans University, ²Center for Ultrafast Phase Transformation, Department of Physics, Sogang University, ³Department of Physics, Pusan National University, ⁴Department of Chemistry, Sookmyung Women's University, ⁵Ewha Womans University, Center for Quantum Nanoscience)

P1-co.108*

Engineering the Growth and Physical Behaviors of T_{2-x}Sn (T= Mn, Fe, Co, Ni) Single Crystals

/ CHO Beopgil¹, PARK Jaemun¹, PARK Keeseong^{*1} (¹Department of Physics and Chemistry, DGIST)

P1-co.109

Magnetic anisotropy and electronics structure of NiTe_{2-x}Se_x and Ni_{1-x}Fe_xTe₂ / SONG Min Gyeong¹, LEE Kwan-Young¹, HWANG Jinwoong², RHYEE Jong-Soo^{*1} (¹Dept. of Applied Physics, Kyung Hee University, ²Dept. of Applied Physics, Kangwon National University)

P1-co.110

Magnon spectra of CrPS₄ / KIM Han Yeop¹, KIM Jonghyeon¹, KIM Jae Hoon^{*1}, PARK Je-Geun², PARK Gi Ung² (¹Department of Physics, Yonsei University, ²Department of Physics & Astronomy, Seoul National University)

P1-co.111*

The Impact of Surface Roughness on Spin Hall Torque Efficiency in Pt/Co Multilayer Structures

/ RHIE Kungwon^{*1}, YUN Changjin², KIM Mingu², JO Yonghwan², JOO Sungjung³, LEE Kyujoon¹ (¹Department of Display and Semiconductor Physics, Korea University, ²Department of Applied Physics, Korea University, ³Center for Electromagnetic Metrology, KRISS)

P1-co.112*

Composition dependence of the orbital torque in Co-Fe and Ni-Fe alloys: Spin-orbit correlation analysis / LEE Hojun¹, LEE Hyun-Woo^{*1} (¹Department of Physics, POSTECH)

P1-co.113*

Higher-order Orbital and Spin Edelstein Effect in Centrosymmetric Metals / BAEK Insu¹, HAN Seungyun¹, CHEON Suik¹, LEE Hyun-Woo*¹ (¹Department of Physics, POSTECH)

P1-co.114

Unexpected versatile electrical transport behaviors of ferromagnetic nickel films / ZHANG Kai-Xuan^{*1}, PARK Je-Geun¹ (¹Department of Physics, Seoul National University)

P1-co.115

Magnetic properties of M-type and Y-type Ba ferrites prepared by a sol-gel method / KIM Dong June¹, SEO Yeon-Woo¹, PARK Jun-Yi¹, OH Ju Young¹, LEE Dong Hyuk¹, LEE Seung Min¹, AN Hyun Ho¹, KIM Sung Baek*¹ (¹Department of Biomedical materials, Konyang University)

P1-co.116

Mössbauer studies of double perovskite $\text{Ca}_2\text{FeMoO}_6$ / AN Hyun Ho¹, NOH Hyeon Jeong¹, LEE Gyeong Tae¹, LEE Chaeyeon², LEE Yunsang², KIM Chul Sung³, KIM Sung Baek*¹ (¹Department of Biomedical materials, Konyang University, ²Department of Physics, Soongsil University, ³Department of Physics, Kookmin University)

P1-co.117*

Magnetic Properties of Organic-Inorganic Hybrid Perovskite Materials Under Different Synthesis Conditions / KANG Jiho¹, HAN DongYoung¹, KIM Sunghyun², PARK Garam³, KIM Ki-Yeon⁴, OH In Hwan⁴, OH Hyunchul², SON Kwanghyo*¹ (¹Department of Physics Education, Kongju National University, ²Department of Chemistry, UNIST, ³Department of Organic Materials Engineering, Chungnam National University, ⁴Neutron Science Division, KAERI)

P1-co.118*

Microstructure evolution for high crystalline L1_0 -phase hard magnetic thin films using magnetron RF co-sputtering. / HAN DongYoung¹, KANG Jiho¹, SUNG Moo Hyun¹, SEO Ju Hee¹, KIM Panki¹, SON Kwanghyo*¹, OH Hyunchul¹, KIM Sunghyun¹ (¹Physics Education, Kongju National University)

P1-co.119

Single crystal growth and magnetic properties of orthorhombic rare earth indates / KIM Jaewook^{*1}, KIM Kyo¹, LEE Seongsu¹ (¹Advanced Quantum Materials Research Center, KAERI)

P1-co.120*

Evolution of Charge Density Wave Order in $\text{Cs}(\text{V}_{1-x}\text{Ti}_x)_3\text{Sb}_5$ / KIM Kwang-Tak¹, NAM Kiwan¹, SUR Yeahan¹, KIM Sukho¹, KIM Yeong kwan², KIM Kee Hoon*^{1,3} (¹Center for Novel States of Complex

Materials Research, Department of Physics and Astronomy, Seoul National University, ²Department of Physics, KAIST, ³Institute of Applied Physics, Department of Physics and Astronomy, Seoul National University)

P1-co.121

Electronic structures of Sb-substituted CeTe_{2-x}Sb_x via ARPES / SEONG Seunggho¹, HAN Sang Wook², KWON Yong Seung³, KIM Jaeyoung⁴, KANG Jeongsoo*¹ (¹Physics, The Catholic University of Korea, ²Basic Science Research Institute, University of Ulsan, ³Department of Physics and Chemistry, DGIST, ⁴CALDES, Institute for Basic Science)

P1-co.122

The impact of aluminum diffusion on MgB₂ films produced through hybrid physical-chemical vapor deposition / LE TIEN MINH¹, TRAN DZUNG T.¹, LEE Hong Gu¹, CHOI Woo Seok¹, HWANG Jungseok*¹, KANG Won Nam¹, PARK Tuson², MIYANAGA Takafumi³, YUN Jinyoung⁴, LEE Yeonkyu⁴, KIM Jeehoon⁴, THAO Pham Ngoc⁵, TRAN Duc H.⁶ (¹Department of Physics, Sungkyunkwan University, ²Center for Quantum Materials and Superconductivity (CQMS), Department of Physics, Sungkyunkwan University, ³Departments of Mathematics and Physics, Hirosaki University, ⁴Department of Physics, Pohang University of Science and Technology (POSTECH), ⁵Faculty of Electronics and Telecommunications, Vietnam National University, ⁶Faculty of Physics, VNU University of Science)

P1-co.123*

Highly temperature-sensitive titanium-based graphene Josephson junction for microwave single photon detector / LEE Gil-Ho*¹, JUNG Woochan¹, HUANG Bevin², ARNAULT Ethan G³, JANG Seong¹, PARK Jinho^{1,4}, TANIGUCHI Takashi⁵, WATANABE Kenji⁵, FONG Kin Chung⁴ (¹Department of Physics, POSTECH, ²Intelligence Community Postdoctoral Research Fellowship Program, MIT, ³Electrical Engineering and Computer Science, MIT, ⁴Quantum Engineering and Computing Group, Raytheon BBN Technologies, ⁵Research Center for Functional Materials, NIMS)

P1-co.124

two-dimensional scanning by NV diamonds / LEE Donghun*¹, CHANJONG Haam¹, LEE Seokmin¹, DONGKWON Lee¹, YUHAN Lee¹, SUNGJIN Jang¹, HEINRICH Andreas² (¹Physics, Korea University, ²physics, Center for Quantum Nanoscience)

P1-co.125

Nanoscale quantum sensing based on the nitrogen-vacancy center in diamond / JANG Sungjin¹, LEE Yuhan¹, LEE Dongkwon¹, LEE Myeongwon², LEE Seokmin¹, HAAM Chanjong¹, LEE Donghun*¹ (¹Physics, Korea University, ²AI Lab, CTO, LG Electronics)

P1-co.126*

Unveil the secret of magnetic bilayer structure by using diamond NV quantum center / JANG Hyunjun¹, CHUNG Jugyeond¹, YOON Jungbae¹, JUNG Jinsu¹, YOON Jungbae¹, KIM Chulki², LEE Donghun^{*1} (1Physics, Korea University, 2Center for Quantum Information, KIST)

[P1-co.2] Condensed Matter Physics: Strongly Correlated/Dielectrics/Functional Oxides

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-co.201*

Dissipative quantum phase transition in the three-level system coupled with bosonic bath / SEOK Ha-Nul¹, KIM Aaram J.^{*1} (1Department of Physics and Chemistry, DGIST)

P1-co.202

Influence of SrIrO₃ film thickness and presence of SrTiO₃ capping layer on the transition of temperature-dependent resistivity behavior in superlattices / HWANG Seon Ha², MAENG Jin Young², CHOI Jeong Chan², SONG Jong Hyun^{*1,2} (1Chungnam National University, 2Department of Physics, Chungnam National University)

P1-co.203*

Quantum critical transport in the half-filled two-dimensional Hubbard model / EOM Youngmin¹, KIM Aaram J.^{*1} (1Physics and Chemistry, DGIST)

P1-co.204

Analysis of microstructure and phase transition of YBa₂Cu₃O₇ thin film / HAN Dong hee³, MAENG Jin Young², SONG Jong Hyun^{*1,2} (1Chungnam National University, 2Department of Physics, Chungnam National University, 3Department of Physics, KAIST)

P1-co.205*

Optical studies for charge density wave of Cr-doped Kagome metal CsV₃Sb₅ / KIM Minjae¹, LEE Hanoh¹, PARK Tuson¹, HWANG Jungseek^{*1} (1Department of Physics, Sungkyunkwan University)

P1-co.206*

Optical properties of degenerately phosphorus-doped silicon / KIM Jaemin¹, IM Hyun Sik², LEE Dong Uk³, HWANG Jungseek^{*1} (1Department of Physics, Sungkyunkwan University, 2Division of Physics and Semiconductor Science, Dongguk University, 3Department of Physics, Hanyang University)

P1-co.207*

Optical properties of RCuAs_2 ($\text{R} = \text{Yb}, \text{Y}$) / LEE Hong gu¹, SEO Yu-Seong¹, JANG JAEKYUNG¹, KIM Minjae¹, KIM Jaemin¹, MUN Eundeok², HWANG Jungseek^{*1} (¹Department of Physics, Sungkyunkwan University, ²Department of Physics, Simon Fraser University)

P1-co.208

Layer dependent property of Fe_3GeTe_2 film / LEE Jaeung¹, KIM Changyoung^{*1} (¹Department of Physics and Astronomy, Seoul National University)

P1-co.209

Study on the organic-inorganic hybrid $[\text{NH}_2(\text{CH}_3)_2]_2\text{CuBr}_4$ crystal: structure, phase transition, thermal property, structural geometry, and dynamics / NA Changyub², LIM Ae Ran^{*1,2} (¹Department of Science Education, Jeonju University, ²Graduate School of Carbon Convergence Engineering, Jeonju University)

P1-co.210

Crystal growth, structure, and molecular motion of tetramethylammonium cation of organic-inorganic perovskite $[\text{N}(\text{CH}_3)_4]_2\text{MnCl}_4$ crystal near phase transition temperature / NA Changyub², CHOI Moon Young², LEE Seon Ju², LIM Ae Ran^{*1,2} (¹Department of Science Education, Jeonju University, ²Graduate School of Carbon Convergence Engineering, Jeonju University)

P1-co.211

Vibrational, Optical and Elastic Properties of $\text{Cs}_2\text{AgBiX}_6$ ($\text{X} = \text{Br}, \text{Cl}$) Double Perovskites / NAQVI Furqanul Hassan¹, KO Jaehyeon^{*1}, KIM Tae Heon², AHN Chang won², HWANG Young Hun³ (¹School of Nano Convergence, Hallym University, ²Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, ³Electricity and Electronics and Semiconductor Applications, Ulsan College)

P1-co.212

Evaluation of the Effect of the Number of Spin-Coating for Fabrication of Hexagonal PZT Nanotubes. / KIM Eun-Young¹, BU Sang Don^{*1} (¹Department of Physics, Jeonbuk National University)

P1-co.213

Effect of Cation Incorporation on the Structural Distortions and Phase Transitions in Mixed Lead Chloride Perovskite Single Crystals / JUNAID SYED BILAL¹, NAQVI SYED FURQAN UL HASSAN¹, KO Jaehyeon^{*1}, LEE Seongsu², WONHYUK Shon² (¹School of Nano Convergence, Hallym University, ²Advanced Quantum Material Research Section, KAERI)

P1-co.214

Effect of Bi non-stoichiometry in BiFeO₃-BaTiO₃ ceramics / LEE Myang Hwan¹, KIM Da Jeong², CHOI Hae In¹, SONG Tae Kwon^{*1} (¹School of Materials Science and Engineering, Changwon National University, ²Department of Materials Convergence and System Engineering, Changwon National University)

P1-co.215*

Investigating Polar Topology in Perovskite Heterostructures: A Comparative Analysis of Phase Field Simulation Using the Lagrange Multiplier Method / LEE Dong Ryeol^{*1}, CHA Boo Hyun¹ (¹Department of Physics, Soongsil University)

P1-co.216*

Investigation on Redox Process of LaCoO_{3-δ} using the Ambient Pressure Hard X-ray Photoelectron Spectroscopy and X-ray Scattering / SHIN HYUN SUK¹, YUN Youngmin¹, DONGWOO Kim¹, SEO Minsik¹, JANG Subin¹, KIM Kyungmin¹, KANG Hyon Chol², MUN Bongjin Simon^{*1} (¹Department of Physics and Photon Science, GIST, ²Department of Materials Science and Engineering, Chosun University)

P1-co.217*

-Charge Localization Dynamics Induced by Surface States of LaAlO₃ Thin Film / LEE Hyungwoo^{*1,2}, CHOI SUNGJUN² (¹Department of Physics, Ajou University, ²Department of Energy Systems Research, Ajou University)

P1-co.218

A comprehensive study of magnetic and dielectric properties of Li-substituted CoWO₄ / AHMAD NASEEM¹, LEE Kimoon^{*1} (¹Department of Physics, Kunsan National University)

[P1-ap.1] Applied Physics: 2D Materials

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-ap.101*

Temperature Dependent Transport Properties of Charge Transfer Doped MoS₂ FETs via AlO_xN_y Overlayer / NAM Sangwoo^{1,2}, PARK Beomjin¹, GU Minseon¹, AHN Hanyeol¹, IM Jaehui^{1,2}, BAEK Junghyun^{1,2}, CHANG Young Jun^{1,2}, HAN Moon-sup^{*1} (¹Department of Physics, University of Seoul, ²Department of Smart Cities, University of Seoul)

P1-ap.102*

Epitaxial Graphene Grown on 4H-SiC with Excess Electrons Provided by Electron Beam

Irradiation / JIN Hanbyul², JO Jaehyeong¹, PARK Jungjae¹, KIM Junhyung³, MO Kyuhyung¹, LEE Jung-Yong⁴, JUNG Sungchul⁵, KIM Sung Youb⁶, LEE Hosik⁷, PARK Kibog^{*1,8} (1Department of Physics, Ulsan National Institute of Science and Technology (UNIST), ², Intel, ³Terrestrial & Non-Terrestrial Integrated Telecommunications Research Laboratory, ETRI, ⁴, Korea Development Bank, ⁵, SK Hynix, ⁶Graduate School of Carbon Neutrality, Ulsan National Institute of Science and Technology (UNIST), ⁷School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), ⁸Department of Electrical Engineering, Ulsan National Institute of Science and Technology (UNIST))

P1-ap.103

Thermoelectric properties of monolayer and bilayer di Boron Nitride (di BN) / ABDULLAH

Abdullah¹, HONG Ji Sang^{*1} (1Physics, Pukyong National University)

P1-ap.104*

Gas Sensing Functionality of Hybrid Structures Composed of Two-Dimensional

Semiconductors and Metal-Organic Polyhedra Films / JEONG Yujeong¹, HONG Youjin¹, CHOI Jihyung¹, MOON WooYeon², KO Kyungmin³, CHAE Minji¹, HAN Yeongseo¹, JOO Min-Kyu^{1,4,5}, SUH Joonki^{3,6}, CHOI Kyung Min^{2,5}, KO Changhyun^{*1,4,5} (1Department of Applied Physics, Sookmyung Women's University, ²Department of Chemical and Biological Engineering, Sookmyung Women's University, ³Department of Materials Science and Engineering, UNIST, ⁴Department of Materials Physics, Sookmyung Women's University, ⁵Institute of Advanced Materials and Systems, Sookmyung Women's University, ⁶Graduate School of Semiconductor Materials and Devices Engineering, UNIST)

P1-ap.105

Fabrication and Investigation of Graphene-Based Heterojunction Structures with Ferroelectric Materials for Enhanced Semiconductor Devices / LEE Duk Hyun

LEE Duk Hyun¹, YOON Chansoo¹, JEON Jihoon¹, RYU Woohyeon¹, KIM Sohwi¹, KIM Jiyeong¹, KIM Heeyoung¹, PARK Bae Ho^{*1} (1Department of Physics, Konkuk University)

P1-ap.106

Observation of Moiré patterns on Twisted Transition Metal Dichalcogenides using Scanning Electron Microscope / KIM Taehyung

KIM Taehyung¹, HAN Kwanghee¹, FANG Mengqi², YANG Euihyeok², WATANABE Kenji³, TANIGUCHI Takashi³, KIM Young Duck^{*1,4} (1Physics, Kyung Hee University, ²Department of Mechanical Engineering, Stevens Institute of Technology, ³Research Center for Functional Materials, National Institute for Materials Science, ⁴Department of Information Display, Kyung Hee University)

P1-ap.107*

High-efficiency nonlinear intermodal coupling in square-membrane micromechanical resonator at room temperature / KIM Eun Mi¹, MOON Kyoung Jun¹, KANG Myeong Soo^{*1}
(¹Department of Physics, KAIST)

P1-ap.108*

Large scale characterization of defects in atomically thin semiconductors / LIM Seungjae¹, LEE Jae-Ung^{*2} (¹Department of Energy Systems Research, Ajou University, ²Department of physics, Ajou University)

P1-ap.109*

High electric field vertical tunneling transports in hexagonal boron nitride / KIM YoungJae¹, PARK Seungmin¹, WATANABE Kenji², TANIGUCHI Takashi³, KIM Young Duck^{*1,4} (¹Physics, Kyung Hee University, ²Research Center for Functional Materials, National Institute for Materials Science, ³International Center for Materials Nanoarchitectonics, National Institute for Materials Science, ⁴Department of Information Display, Kyung Hee University)

P1-ap.110*

Strain-Modulated Multidirectional Reorientation in Ferroelastic 1T' MoTe₂ / KOH WooChan¹, KIM Hyeon-Sik¹, KWON Gihyeon¹, CHU JaeYoon¹, JEONG Kwangsik², CHO Mann Ho^{*1,3}
(¹Department of Physics, Yonsei University, ²Division of AI Semiconductor, Yonsei University, ³Department of System Semiconductor Engineering, Yonsei University)

P1-ap.111*

Optical Characterization of MoS₂-FET by Hyperspectral Line Imaging / LEE Wooseok¹, LEE Jae-Ung^{*2} (¹Department of Energy Systems Research, Ajou University, ²Department of physics, Ajou University)

P1-ap.112*

이온 빔 조사 조건에 따른 그래핀 가스 센서의 수소 민감도 변화 / SEO Junhyeok¹, YEO Sunmog^{*1}, HA Jun Mok¹ (¹KOMAC, KAERI)

P1-ap.113

Topological insulator contacts in two-dimensional semiconductor field effect transistor / PARK Hyunjun¹, KWON Gihyeon¹, KOH Woochan¹, CHU Jaeyoon¹, BAEK Jin Woo¹, CHO Mann Ho^{*1,2} (¹Department of Physics, Yonsei University, ²Department of System Semiconductor Engineering, Yonsei University)

P1-ap.114*

Bias-driven growth of moire ferroelectric domain structures in twisted bilayer WSe₂ / PARK Sang Hwa¹, PARK Daesung¹, YUK Ayoung¹, YOO Hyobin¹, YANG Sang Mo^{*1} (¹Department of Physics, Sogang University)

P1-ap.115

Acetone gas detection by defective graphene gas sensors / YEO Sunmog^{*1}, SEO Junhyeok¹, HA Jun Mok¹ (¹KOMAC, KAERI)

P1-ap.116*

Optical Spectroscopic Investigations of Plasma Treated WS₂ / JANG Junwon¹, LEE Jae-Ung^{*2} (¹Department of Energy Systems Research, Ajou University, ²Department of physics, Ajou University)

P1-ap.117*

Broadband Second harmonic generation enhancement of WS₂ nanoscrolls / HAN Seungman¹, LEE Jae-Ung^{*2} (¹Department of Energy Systems Research, Ajou University, ²Department of physics, Ajou University)

P1-ap.118*

One-dimensional moiré from vertical stacking of GdTe₃ twin domains

/ KIM Kwanpyo^{*1,2}, YEON Jieun¹, 이기현^{1,2}, JANG Myeong Jin^{1,2}, KIM Changyoung³ (¹Physics, Yonsei University, ²Nanomedicine, Institute for Basic Science, ³Physics & Astronomy, Seoul National University)

P1-ap.119

Electronic properties of bilayer graphene/Janus TMD heterostructure / HONG SukLyun^{*1}, YUN Junho¹, KIM Yunjae¹, SUNG Dongchul¹ (¹Sejong University)

P1-ap.120

Theoretical studies of Janus two-dimensional materials / RYU Wonseok¹, HONG SukLyun^{*1}, SUNG Dongchul¹, KIM Yunjae¹ (¹Sejong University)

[P1-ap.2] Applied Physics: Nano Materials /Surface and Interface

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-ap.201*

Synthesis and structural characterizations of rhombohedral GeSe / JUNG Joong-Eon¹, LEE Sol¹, LIM Seung jae², KIM Joonho¹, LEE Kihyun¹, LEE Jae-Ung², KIM Kwanpyo^{*1} (¹Physics, Yonsei University, ²Physics, Ajou University)

P1-ap.202*

Growth and characterization of carbon nanotubes based on carbon dioxide gas precursor / KIM Keun Soo^{*1}, LEE Dong Yun¹, NAM Jungtae¹, LEE Gil Yong¹, KIM Ji Hoon², KIM Yong Jung² (¹Department of Physics & Astronomy, Sejong University, ²Carbon Material Group, RIST)

P1-ap.203*

Enhancing scanning tunnelling microscopy efficiency with compressed sensing / CHO Doohee^{*1}, YANG Hyungryul¹ (¹Department of Physics, Yonsei University)

P1-ap.204

In-plane Seebeck effect in 2D PtSe₂/PtSe₂ homostructures via a facile interface / LEE Sang-Kwon^{*1}, PARK No Won¹, PARK Gangmin¹ (¹Physics, Chung-ang University)

P1-ap.206

Alleviating Ionic Charge Accumulation at the SnO₂/FAPbI₃ Heterointerface in Perovskite Solar Cells / KIM JIHYUN¹, KIM Gee Yeong², JO William^{*1,3} (¹Department of Physics, Ewha Womans University, ²Advanced Photovoltaics Research Center, Korea Institute of Science and Technology, ³New and Renewable Energy Research Center, Ewha Womans University)

P1-ap.207*

Local measurement of dielectric constant for MoO₃ nanostructures / GU Minji¹, KIM Taewoong¹, KIM Taekyeong^{*1} (¹Physics, Hankuk University of Foreign Studies)

P1-ap.208*

Nanoscale observation of ferroelectric phase transitions in two-dimensional halide perovskites / YANG Sang Mo^{*1}, JUNG Tae Hyun¹, LEE Sang Woo¹, SHIN June Hee¹, BAE Sung Bin¹, KUK Yun Seung², OK Kang Min² (¹Department of Physics, Sogang University, ²Department of Chemistry, Sogang University)

P1-ap.209*

Exploring the Growth of Graphene on M-Plane Sapphire Substrates via Chemical Vapor Deposition / SON Won Deok¹, AN Su Young¹, KIM Jae Hun¹, KIM Chinkyoo^{*1,2} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Information Display, Kyung Hee University)

P1-ap.210*

Thru-hole Density Control in BN Directly Grown on a Sapphire Substrate / JO Hyeonoh¹, CHOI Jaewu², KIM Chinkyoo^{*1,2} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Information Display, Kyung Hee University)

P1-ap.211*

Effect of Thermal Pretreatment of Sapphire on the Growth of Graphene / AN Su Young¹, KIM Chinkyoo^{*1,2} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Information Display, Kyung Hee University)

P1-ap.212

Enhancing Oxygen Evolution Reaction Efficiency through Heterostructured MOF-on-MOF Architectures / SHEN Lin², KIM Dong-Hwan², KANG Dae Joon^{*3} (¹Sungkyunkwan University, ²Department of Chemical engineering, Sungkyunkwan University, ³Department of Physics, Sungkyunkwan University)

P1-ap.213

Self-Assembled Reduced Graphene Oxide Nonwoven with 3D Network Structure for Epoxy Thermal Interface Materials / LEE Gyeonghun¹, YANG Hyunseo¹, SONG Jun Yong¹, LA Yunju¹, BANG Yongbin¹, LEE In-Sung¹, JEON Young Pyo¹, YOO Young Joon^{*1}, PARK Sang Yoon² (¹Advanced institutes of convergence technology, ²School of Electronic Engineering, Kyonggi University)

P1-ap.214

Biocompatible Transient Metal-Inorganic Frameworks for Precision Drug Delivery / LEE Tae Hyeong¹, KANG Dae Joon^{*1} (¹Sungkyunkwan University)

P1-ap.215

Innovative Enhancement of Transdermal Drug Delivery via Dielectrophoresis-Driven Soluble Microneedles / KANG Dae Joon^{*1,2}, KU Taejeong² (¹Sungkyunkwan University, ²Interdisciplinary course of Physics and Chemistry, Sungkyunkwan University)

P1-ap.216*

Electrical and mechanical characterization of silicon-carbon composite cathodes for lithium-ion batteries / CHO Mingi¹, YUK Eun Seo¹, PARK Hyeonho¹, KIM Seong Heon^{*1} (¹Department of Physics, Jeonbuk National University)

P1-ap.217*

Enhanced Phase Change Properties of Advanced Interfacial Phase Change Materials for

Neuromorphic Computing / LEE Hojun¹, LIM Hyeonwook¹, LEE Chang-woo¹, KOWN Hoedon¹, SEONG Yeonwoo¹, LEE Semin³, YANG Dogeon¹, CHO Mann Ho^{*1,2} (¹Department of Physics, Yonsei University, ²Department of System Semiconductor Engineering, Yonsei University, ³Graduate Program of Semiconductor Science and Engineering, Yonsei University)

P1-ap.218*

Surface Morphology and Electrical Properties of Organic Metal Halide Perovskite Degraded by E-Beam Radiation / PARK Hyeonho¹, JU Hyeonwoo¹, KIM Seong Heon^{*1,2} (¹Department of Physics, Jeonbuk National University, ²Research of Physics and Chemistry, Jeonbuk National University)

P1-ap.219*

Prevention of the ion pile-up phenomenon in solid electrolyte depth profiling with positive bias potential / SEO Minsik¹, KIM Gyungtae², LEE Yonghee³, KIM Hyun-Suk⁴, CHUNG Kwun Bum⁵, MUN Bongjin Simon^{*1} (¹Department of Physics and Photon Science, GIST, ²Department of Measurement & Analysis, National NanoFab Center, ³Center for Nano Material Technology Development, National NanoFab Center, ⁴Department of Energy and Materials Engineering, Dongguk University, ⁵Division of Physics and Semiconductor Science, Dongguk University)

[P1-ap.3] Applied Physics: Photonics/Quantum/Organic/Bio

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-ap.301*

Influence of the organic spacer cations on the optical properties of 2D bromide perovskites / JANG Joon Ik^{*1}, KIM Jinseong¹, YI Yeonjin², LEE Dong Gyu², JUNG Myung Hwa¹, KANG Hyeokju¹ (¹Physics, Sogang University, ²Physics, Yonsei University)

P1-ap.302

Polyelectrolytic Nickel Compounds as Efficient Hole Transport Materials for Organic and Perovskite Solar Cells / LEE JinHee¹, SEO Jung Hwa^{*1} (¹Physics, University of Seoul)

P1-ap.303*

Measuring the nonlinear properties of MXene quantum dots by using the Z-scan method / SUH KYUNG SUK¹, LIM Jong Hoon¹, KIM Donggyu¹, SHARBIRIN Anir S², JANG Joon Ik^{*1}, KIM Jeongyong^{*2} (¹Physics, Sogang University, ²Department of Energy Science, Sungkyunkwan University)

P1-ap.304

Inspection into effect of pattern of polarization modes on surveillance signal for their tracing in fiber optic transmission link / HAN Ki Ho^{*1} (1Department of Optical Engineering, Kongju National University)

P1-ap.305

Inquiry on effect of polarization adjustment inaccuracy on optical signal to noise ratio measurement using signal annihilation for optical communication / HAN Ki Ho^{*1} (1Department of Optical Engineering, Kongju National University)

P1-ap.306*

Impact of Fluorination in the Organic Spacer on Excitonic Properties of (A)₂PbI₄ (A = PEA = C₈H₁₂N, FPEA = C₈H₁₁NF) / JANG Joon Ik^{*1}, KANG Sihyung¹, LEE Dong Gyu², YI Yeonjin², LEE Eunji³, KIM Jeongyong³ (1Physics, Sogang University, 2Department of Physics, Yonsei University, 3Department of Energy Science, Sungkyunkwan University)

P1-ap.307

Luminescent properties of carbon dots derived from aminothiophenol / HONG Woo Tae², BHARAT Lankamsetty Krishna², JUNG Jae Yong², PARK JinYoung¹, YANG Hyun Kyoung^{*2,1} (1Marine-Bionics convergence technology center, Pukyong National University, 2Department of Electrical, Electronics and Software Engineering, Pukyong National University)

P1-ap.308

Boosting Variational Quantum Eigensolver with Dynamic Tunneling and Mixed-State Ansatz / CHOI Mahn-Soo^{*1}, BAEK Kyunghyun², LEE Seungjin², PARK SEUNG¹ (1Department of Physics, Korea University, 2Quantum Computing team, ETRI)

P1-ap.309*

Laser setup for optical pumping on trapped Yb ion experiment / KIM Jlyoon¹, LEE Heesu¹, KIM Hyunsoo¹, LEE HYE IN¹, YOO Jieun¹, KIM Hyerin¹, CHOI Taeyoung^{*1} (1Department of Physics, Ewha Womans University)

P1-ap.310*

N-Doping in 2D RP Perovskites: Unveiling Performance Limitations through Defect Dynamics / YOON Eunki¹, KIM Kitae^{1,2}, PARK Soohyung^{*1} (1Advanced Analysis Center, Korea Institute of Science and Technology (KIST), 2Department of Physics, Yonsei University)

P1-ap.311*

Thickness dependent Electronic Properties of Silver Phenyl Selenolate [AgSePh]_n by

Photoemission Analysis. / PARK Soohyung^{*1}, LEE Yeonjin², KIM Seunghwan^{1,2}, KIM Kitae^{1,2}
(¹Advanced Analysis Center, Korea Institute of Science and Technology (KIST), ²Department of Physics, Yonsei University)

P1-ap.312

Basic setup of acoustic optical modulators for trapped-ion experiment / LEE Heesu¹, CHOI Taeyoung^{*1}, KIM Hyunsoo¹, LEE HYE IN¹, YOO Jieun¹, KIM Hyerin¹, CHOI Taeyoung¹ (¹Department of Physics, Ewha Womans University)

P1-ap.313

Demonstration of 4-Qubit Algorithms on a SKKU Superconducting Quantum Processor / KIM Youngdu¹, WOO Seungwook¹, CHOI Beomgyu¹, PARK Jongwon¹, KIM Jeongwon¹, CHO Dongki¹, CHONG Yonuk^{*1} (¹Nano Engineering, Sungkyunkwan University)

P1-ap.314*

Wire bonding and air bridge performance simulation in superconducting qubit device / PARK Jongwon¹, KIM Youngdu¹, WOO Seungwook¹, CHOI Beomgyu¹, CHO Dongki¹, KIM Jeongwon¹, CHONG Yonuk^{*1} (¹Nano Engineering, Sungkyunkwan University)

P1-ap.315*

Study of Radiation Cancer Therapy with Monte Carlo Method using Quantum Computer / KIM Chaemin¹, YOO Younggon¹, MOON Kyungsun^{*1,2} (¹Department of Physics, Yonsei University, ²Institute of Quantum Information Technology, Yonsei University)

P1-ap.316

Modelling hydrogen adsorption on pyridine and pyridine-Li complex with quantum computing / GHASEMI FATEMEH¹, MOON Kyungsun^{*1,2} (¹Department of Physics, Yonsei University, ²Institute of Quantum Information Technology, Yonsei University)

P1-ap.317

Permutation Symmetry in Arbitrary Multiqubit Quantum Operations / SO Mi-Jung¹, CHEN Dongni¹, CHOI Mahn-Soo^{*1} (¹department of physics, Korea University)

P1-ap.318

Simulating electronic structure of graphene fragments by quantum computer / MIRZAKHANI Mohammad¹, MOON Kyungsun^{*1,2} (¹Department of Physics, Yonsei University, ²Institute of Quantum Information Technology, Yonsei University)

P1-ap.319*

Study on Reversible Phase Transition through Temperature/Humidity for Short Organic Spacer-based 2D Perovskites : Focusing on In-situ Observation / HA Aelim¹, KIM Kitae^{1,2}, KIM Seunghwan¹, PARK Soohyung^{*1} (¹Advanced Analysis Center, Korea Institute of Science and Technology (KIST), ²Department of Physics and van der Waals Materials Research Center, Yonsei University)

P1-ap.320*

The effect of gate dielectric thickness on device performance of organic field effect transistor incorporating Parylene-C dielectric / SEO Jung Hwa^{*1}, SHIM Taeyun¹ (¹Physics, University of Seoul)

P1-ap.321*

Effective Growth of thin single-crystalline two-dimensional Ruddlesden-Popper phase halide perovskite / PAK Sooyeon¹, KIM Seunghwan¹, KIM Kitae^{1,2}, PARK Soohyung^{*1} (¹Advanced Analysis Center, Korea Institute of Science and Technology (KIST), ²Department of Physics and van der Waals Materials Research Center, Yonsei University)

P1-ap.322

308, 248 및 193 nm 파장의 엑시머 레이저를 이용한 폴리스티렌 셀 플레이트 표면 개질 전후 표면화학적 특성 연구 / HAN Hyewon^{1,2}, SEO Chanyong¹, BAEK Namwuk¹, CHOI Jeongbeom¹, BAE KyuBeom¹, KIM Jaeyeon¹, JUNG Dong Geun^{*1}, YU SeGi³ (¹Department of Physics, Sungkyunkwan University, ²R&D, LNP Lab, ³Department of Physics, Hankuk University of Foreign Studies)

[P1-op] Optics and Quantum Electronics

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-op.001

Observation of dimensionality from coupled quantum dot molecule / KIM Heedae^{*1}
(¹Department: department of semiconductor science & technology, Jeonbuk National University)

P1-op.002

Amplification effect of measurement range in chirped spectral-domain interferometry by using cascaded CFBGs / KIM Hyun Sung¹, LEE Seung Seok¹, CHOI Eun Seo^{*1} (¹Department of Physics, Chosun University)

P1-op.003*

Directionality-enhanced μ -LED with Distributed Bragg Reflector for Augmented Reality /
MOON Juyeong², LEE Jaesang^{*1} (¹Electrical and Computer Engineering, Seoul National University,
²Electrical and Computer Engineering, Seoul National University)

P1-op.004*

실시간 비파괴 THz 이미징을 이용한 캡슐 알약 선별 기술 개발 / JEONG Tae Hee¹, AHN Yeong Hwan^{*1} (¹Department of Physics and Department of Energy Systems Research, Ajou University)

P1-op.005

Heisenberg-Limited Metrology via Weak-Value Amplification without Using Entangled Resources / KIM Yosep¹, YOO Seung-Yeun^{*1}, KIM Yoon-Ho¹ (¹Department of Physics, POSTECH)

P1-op.006*

Quantum illumination with photon number entangled states under local repetitive measurements / CHOI Hojun^{*1}, LEE Changhyoup², NOH Changsuk¹ (¹Department of Physics, Kyungpook National University, ²Physics, KRISS)

P1-op.007

Coherent Two-Photon LIDAR with Incoherent Light / LEE ChungHyun^{*1}, KIM Yosep¹, IM Donggil¹, TAMMA Vincenzo², KIM Yoon-Ho¹ (¹Department of Physics, POSTECH, ²School of Mathematics and Physics, University of Portsmouth)

P1-op.008

양자 조임 상태 레이저를 위한 광학 공진기 설계 / KIM Jaewan^{*1}, CHOI Soyeon¹, CHOI Jeongju¹, LEE Hyungdo¹, KIM Dongyeol¹ (¹Department of Physics, Myongji University)

P1-op.009

학부 실험용 단일 광자 검출기 제작 / KIM Jaewan^{*1}, CHOI Jeongju¹, CHOI Soyeon¹, KIM Dongyeol¹, LEE Hyungdo¹ (¹Department of Physics, Myongji University)

P1-op.010*

Vapor phase detection of TNT and DNT by surface enhanced Raman scattering with gold nanogap structures / NOH DaeGwon¹, ADHIKARI Samir¹, KIM Minjun¹, AHN Daehyun¹, JANG Yudong¹, LEE Donghan¹, OH Eunsoon^{*1} (¹Department of Physics, Chungnam National University)

P1-op.011*

Visualization of strong light-matter interaction spatial regime in molecular excitons and

plasmonic colloids coupled system / LEE Yeon Ui*¹, JOO BinChan¹, CHOI Kyu-Ri¹, PARK DongHee¹, LEE HoJun¹, KANG Evan.S.H¹ (¹Department of Physics, Chungbuk National University)

P1-op.012

Characterization of Nitrogen-Vacancy Centers in Diamond with Super-Resolution

Fluorescence Microscopy / CHOI Kyu Ri¹, JALALUDEEN Mohammed Zia², PARK Dong Hee¹, JOO Bin Chan¹, LI Shilong², NIC CHORMAIC Síle², LEE Yeon Ui*¹ (¹Department of Physics, Chungbuk National University, ²Light-Matter Interactions for Quantum Technologies Unit, Okinawa Institute of Science and Technology Graduate University)

P1-op.013

Nonlinear photocurrent as a hallmark of magneto-electronic band structure: On the example of non-centrosymmetric altermagnets / PARK Noejung*¹, JIANG Xiao¹ (¹UNIST)

P1-op.014*

Structured illumination microscopy using laser speckle patterns in the near-infrared spectral range / YOO Jae Hwan¹, JOO Bin Chan¹, CHOI Kyu Ri¹, PARK Dong Hee¹, LEE Yeon Ui*¹ (¹Department of Physics, Chungbuk National University)

P1-op.015

Non-invasive reflection matrix microscopic imaging for human model-eye / YANG Taeseok Daniel¹, KANG Sungsam², CHOI Sowon^{1,4}, HONG Minjeong^{1,4}, EOM Kyungsik³, CHOI Youngwoon*^{1,4}, CHOI Wonshik*^{2,5} (¹Department of Bioengineering, Korea University, ²Center for Molecular Spectroscopy and Dynamics, Institute for Basic Science (IBS), ³Department of Electronics Engineering, Pusan National University, ⁴Interdisciplinary Program in Precision Public Health, Korea University, ⁵Department of Physics, Korea University)

[P1-se.1] Semiconductor Physics: Growth, Structure, Wide Bandgap, and Devices

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-se.101*

Position-Controlled Thru-Hole Epitaxy of GaN Domains on a SiO₂-patterned Sapphire

Substrate Coated with h-BN Flakes / HA Jongwoo¹, CHOI Minah², YANG Jieun², KIM Chinkyoo*^{1,3} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Chemistry, Kyung Hee University, ³Dept of Information Display, Kyung Hee university)

P1-se.102*

Efficacy of Reduced Graphene Oxide as Mask Layers for Suppressing Threading Dislocations in GaN through Hole Epitaxy / BEAK Gunhoon¹, LEE Hyunkyu², KIM Chinkyoo^{*1,2} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Information Display, Kyung Hee University)

P1-se.103*

Optimizing GaN Growth on Si via Methane-Facilitated Growth of SiC Film as a Buffer Layer / KOO Junghyun¹, KIM Chinkyoo^{*1,2} (¹Dept. of Physics, Kyung Hee University, ²Dept. of Information Display, Kyung Hee University)

P1-se.104

전산모사 기반 질화갈륨 반도체 소자의 양성자 영향 분석 / SEO Junhyeok¹, YOON Young Jun², KIM Kibeom³, KIM Yu-Mi¹, YEO Sunmog^{*1} (¹KOMAC, KAERI, ²Department of Electronic Engineering, Andong National University, ³Department of Electronic Engineering, Soon Chun Hyang University)

P1-se.105

Fabrication of rolled-up structure of layered III-nitrides alloy structure by photoelectrochemical etching / CHO Yong Hoon^{*1}, AHN Seonghun¹, HWANG Hyunsu¹, SONG Hyun Gyu¹, WOO Kie Young¹ (¹KAIST)

P1-se.106

Superscar cavity polariton in GaN prism structure / SUNG Chan Young^{*1} (¹Department of Physics, KAIST)

P1-se.107*

Enhanced Charge Trap Characteristics of Ti-Doped SiNx for MONOS Flash Memory Device / PARK Hyunsu¹, AHN Hanyeol¹, JANG Won¹, KHIM Young Hun¹, IM Jaehui^{1,2}, NAM Sangwoo^{1,2}, GU Minseon¹, CHANG Young Jun^{1,2}, HAN Moonsup^{*1} (¹Department of Physics, University of Seoul, ²Department of Smart Cities, University of Seoul)

P1-se.108

타원편광분석법을 이용한 SnSe의 저온 유전율 함수 / NGUYEN Xuan Au¹, KIM Tae Jung^{*1}, CHOI Junho¹, KIM Young Dong¹ (¹Department of Physics, Kyung Hee University)

P1-se.109*

Exploring the relationship between defects and photorefectance spectroscopy properties in InAs_xP_{1-x} metamorphic buffer structure / PARK Gyoung Du¹, KIM Jong Su^{*1}, KIM Geun Hyeong¹, KANG Taein¹, LEE Sang Jun² (¹Physics, Yeungnam University, ²IoT Optical Sensor Team, KRISS)

P1-se.110*

Analysis of Optical Properties Depending on the Periodicity of MQWs / KIM Jong Su^{*1}, KIM Jong Du¹, PARK Gyoung Du¹, KANG Taein¹, LEE Sang Jun², NGUYEN Phuc Dinh² (¹Yeungnam University, ²Semiconductor Display Measurement Group, KRISS)

P1-se.111

Tunneling current analysis in nBn detector using Arrhenius plot with bias photoluminescence / LEE Jonghun¹, KIM Jong Su^{*1}, KANG Taein¹, GO Jiseong¹, LEE Sang Jun², KIM Dong Wan² (¹Department of Physics, Yeungnam University, ²IoT Optical Sensor Team, KRISS)

P1-se.112*

Exploring size-dependent strain effects in InAs/GaAs quantum dots via interface electric fields / KIM Hwijun¹, PARK Gyoung Du¹, KIM Jong Su^{*1}, KANG Taein¹ (¹Physics, Yeungnam University)

P1-se.113*

다중양자우물(MQW)의 두께에 따른 InGaAsSb 적외선발광다이오드(IR LED)의 광학적 특성에 관한 연구 / SUNG ChangHyung¹, KIM Jong Su^{*1}, KANG Taein¹, GO Jiseong¹, PARK Gyoung Du¹, LEE Sang Jun² (¹Yeungnam University, ²Semiconductor Display Measurement Group, KRISS)

P1-se.114*

Precise Determination of Optical Gain Coefficients for Metal Halide Perovskite Thin Films / LEE Hyeonji^{*1}, ROH Kwangdong¹ (¹Department of Physics, Ewha Womans University)

P1-se.115*

Evaluated the performance of nBn and p-i-n structured infrared detectors based on their photocurrent response / KANG Taein¹, LEE Jonghun¹, KIM Jong Su^{*1}, GO Jiseong¹, PARK Gyoung Du¹, LEE Sang Jun², KIM Dong Wan² (¹Yeungnam University, ²Interdisciplinary Materials Measurement Institute, KRISS)

P1-se.116

Study the optical properties of GaSb material system by optical energy modulation method / KIM Jong Su^{*1}, PAWAR Shubham Sarjerao¹, LEE Sang Jun² (¹Yeungnam University, ²Division of Interdisciplinary Materials Measurement Institute, KRISS)

P1-se.117

XPS 분석에 의한 금속 표면에 흡착된 탄소의 결합에너지와 일함수의 상관성 연구 / BIN Jeongsu¹, GEE Hyunbae¹, RHA Sakyun², LEE Youn Seoung^{*1} (¹information and Communication Engineering,

Hanbat National University, ²Department of Advanced Materials Engineering, Hanbat National University)

P1-se.118

딥러닝 기반 이미지 분류 알고리즘을 활용한 XPS 측정 원소 조성비 분석에 관한 연구 / GEE Hyunbae¹, BIN Jeongsu¹, RHA Sakyun², LEE Youn Seoung^{*1} (¹Department of Information and Communication Engineering, Hanbat National University, ²Department of Advanced Materials Engineering, Hanbat National University)

P1-se.119

Temperature-Dependent Optical Transitions of MAPbCl_xBr_{3-x} Single Crystals / KIM Yongmin^{*1}, PARK Dae Young² (¹Physics, Dankook University, ²Physics, Hanyang University)

P1-se.120*

Defect passivation of CsPbBr₃ nanocrystals by post-synthetic treatment and investigation of their optical properties / HEO Jun Yeong¹, HEO Dong Gwon¹, KIM Sung Hun¹, LEE Hong Seok^{*1} (¹Department of Physics, Jeonbuk National University)

P1-se.121*

Optical and morphological properties of ZnSe quantum dots with different reaction times / NGUYEN Duy Hoang¹, KIM Sung Hun¹, LEE Hong Seok^{*1} (¹Department of Physics, Jeonbuk National University)

P1-se.122*

Synthesis and carrier dynamics of magic-size CdSe quantum dots / HEO Dong Gwon¹, KIM Sung Hun¹, LEE Hong Seok^{*1} (¹Department of Physics, Jeonbuk National University)

P1-se.123

Vacuum-assisted Mechanical Exfoliation for the large-area high-quality graphene / KIM Minwook¹, MUHAMMAD Suleman¹, LEE Sohee¹, PARK Hyeonwoo¹, PARK Hyehyeon¹, SEO Yongho^{*1} (¹Sejong University)

P1-se.124

박막의 두께가 얇아짐에 따라서 3 차원 디락준금속 Bi_{0.96}Sb_{0.04} 이 2 차원 바일준금속으로 상전이하는 현상 / JANG Chan Wook¹, CHOI Suk-Ho^{*1} (¹Department of Applied Physics, Kyung Hee University)

P1-se.125

Luminescence properties of polymer nanocomposites / KIM Su Jin¹, PARK Jeong Min¹, LEE Yongsu¹, KIM Han Soo¹, KIM Young Soo¹, HA Jang Ho¹, KANG Chang Goo^{*1} (¹KAERI)

P1-se.126

Fabrication and Characterization of Polymer-Nanoparticle Composite(PNC) Flexible

Scintillators / KANG Chang Goo^{*1}, KIM Su Jin¹, PARK Jeong Min¹, LEE Yongsu¹, KIM Han Soo¹, KIM Young Soo¹, HA Jang Ho¹ (¹KAERI)

P1-se.127*

Topological Materials for Advanced Interconnects / LIM Subeen¹, MAENG GyungHo¹, LEE Yeonghun^{*1} (¹Department of Electronics Engineering, Incheon National University)

P1-se.128

Quantum Confinement Effects on Resistivity of Ultrathin Metal Interconnects / MAENG GyungHo¹, LIM Subeen¹, LEE Yeonghun^{*1} (¹Department of Electronics Engineering, Incheon National University)

P1-se.129

Transport band gap measurement of large-area hBN by using direct and inverse photoemission spectroscopy / MAENG Min-Jae¹, LEE Kyu Myung¹, HONG JONG-AM¹, YOO HyunJoon¹, KO Hayoung³, LEE Seung Jin³, KIM Soo Min⁴, PARK Yongsup^{*1,2} (¹Department of Physics, Kyung Hee University, ²Department of Information Display, Kyung Hee University, ³Department of Energy Science, Sungkyunkwan University, ⁴Department of Chemistry, Sookmyung Women's University)

[P1-se.2] Semiconductor Physics: Emerging 2D Materials and Next-generation Semiconductors/Devices/Quantum

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-se.201

집속이온빔 소광 방법을 이용한 고밀도 GaN 나노와이어 안에 성장된 InGaN 양자점의 밀도 조절과 고순도 단광자 방출 / CHO Yong Hoon^{*1}, JE Yubin¹, JUN Seongmoon¹, GOGNEAU Noëlle² (¹KAIST, ²DEPARTMENT OF MATERIALS, Institut Neel, CNRS)

P1-se.202*

Optical characterization of InAs QDs filled in Ga-droplet etched hole / LEE Youjin^{1,2}, PARK SUK IN¹, MEINECKE Moritz³, PFENNING Andreas³, LOYOLA Tobias Huber³, HÖFLING Sven³, GSCHWANDTNER Peter³, SONG JIN DONG^{*1} (¹Center for Opto-Electronic Materials and Devices

Research, KIST, ²Nanoscience and Technology, KIST / UST, ³Lehrstuhl für Technische Physik, Universität Würzburg)

P1-se.203

Mixed-dimensional halide perovskite QDs synaptic array for self-rectifying and luminous artificial neural networks / PARK Young Ran¹, WANG Gunuk^{*1} (¹KU-KIST Graduate School of Converging Science and Technology, Korea University)

P1-se.204

Electrical Investigation of AlInAs/InAsSb Multi- Quantum Well LED Structures / SEYEDEINARDEBILI Seyedehbahareh¹, KIM Jong Su^{*1} (¹Yeungnam University)

P1-se.205

Reducing Erosion in Copper-Film Chemical-Mechanical Planarization depending on Pattern Density through Radical Oxidation / PARK Jeagun^{*1}, KOH Hyunsung² (¹Hanyang University, ²electronic engineering, Hanyang University)

P1-se.206

Fenton Reaction for Enhancing Ag-Film Polishing-Rate in Chemical-Mechanical-Planarization / PARK Jeagun^{*1}, KIM Myunghoe² (¹Hanyang University, ²Department of electronic engineering, Hanyang University)

P1-se.207

Design of Cylindrical Channel Thin Film Transistor for DRAM scaling / CHOI Woo Tack², KIM Ji Hun², PARK Jeagun², LEE Seung Beck^{*2} (¹Hanyang University, ²Department of Electronic Engineering, Hanyang University)

P1-se.208

Prevent image contrast degradation of high reflectivity Ru/Si multilayer EUVL mask via Co-Sputtering Method / SHIN Yeonsoo¹, CHOI Yohan², KIM Mincheol², PARK Jeagun^{1,2}, SHIM Taehun¹, PARK Jinsub^{*1} (¹Department of Electronic Engineering, Hanyang University, ²Department of Nanoscale Semiconductor Engineering, Hanyang University)

P1-se.209

Mechanism of Colloidal-Silica-Abrasives Diameter Depending on Surfactant Functional Group / KIM Ju-Yeon², KIM Pil-Su², JEON Min-Uk¹, JIN Hyeong-Ju², AHN Ho-Jun², PARK Jeagun^{1,2}, PARK Jinsub^{*1,2} (¹Department of Electronic Engineering, Hanyang University, ²Nanoscale Semiconductor Engineering, Hanyang University)

P1-se.210

Introducing Alcohol Compounds as a Selectivity Enhancing Agent in Selective Wet Etching of Si_{1-x}Ge_x- to Si-film / JANG Eunwoo², LEE Jieun³, LEE Changjin⁴, PARK Jinsub^{*1,2,3,4} (1Department of Electronic Engineering, Hanyang University, 2Department of Nanoscale Semiconductor Engineering, Hanyang University, Hanyang University, 3Department of Information Display Engineering, Hanyang University, Hanyang University, 4Department of Electronic Engineering, Hanyang University, Hanyang University)

P1-se.211*

Non-Destructive Laser Etching of Single-layer TMD / OH Hye Min^{*1}, CHOI Subin² (1Department of Physics, Kunsan National University, 2Department of Physics, Kunsan National University)

P1-se.212

Precision Engineering of Two-Dimensional Solid State Nanopores via AFM-Assisted Fabrication / ZHANG QIANWEN¹, WONJE Jeong¹, KANG Dae Joon^{*1} (1Sungkyunkwan University)

P1-se.213*

Pulsed Laser Assisted Chemical Vapor Deposition of the Alloy Phase Mo_xW_{1-x}Se / MAQBOOL Faisal¹, RASHID Mamoon Ur¹, KIM Sungdo¹, TAHIR Zeeshan¹, LE LECHINH TAM¹, KIM Yong Soo^{*1} (1Department of Semiconductor Physics, University of Ulsan)

P1-se.214*

Strain-Induced Strong Photoluminescence at Monolayer WSe₂ / PARK Jae-Hee^{1,4}, KARANKOVA Sofiya^{1,3}, LEE Yeunjeong^{1,5}, LEE Young Gie^{2,6}, KIM Young Duck⁶, JANG Chaun², SONG Yong Won^{1,3}, KIM Sangsig⁴, MOON Hyowon^{*1,3} (1Center for Optoelectronic Devices and Materials, KIST, 2Center for Spintronics, KIST, 3Division of nanomaterials Science and Engineering, UST, 4School of Electrical Engineering, Korea University, 5Department of Physics, Korea University, 6Department of Physics, Kyung Hee University)

P1-se.215

Development of an Advanced Measurement System for Electrical Characteristics of Nanopores for DNA Storage Device Applications / JEONG Wonje¹, ZHANG QIANWEN¹, KANG Dae Joon^{*1} (1Sungkyunkwan University)

P1-se.216

Negative differential conductance characteristics of the heterojunction device based on wafer-scale thin-film semiconductors / LEE Yongsu¹, PARK Jeong Min¹, KIM Sujin¹, KIM Han Soo¹, KIM Young Soo¹, HA Jang Ho¹, KANG Chang Goo^{*1} (1KAERI)

P1-se.217*

Passivation of Metal Monochalcogenide Using PMMA/BV Composite for Air Stability / JO JiEun¹, KWON Chan¹, PARK Hyeon Jung¹, KIM Ha Neul¹, CHO Ga Hyun¹, BANG Seungho¹, PARK Dae Young¹, JEONG Mun Seok^{*1} (¹Department of Physics, Hanyang University)

P1-se.218*

Defect Analysis for Field-Effect-Transistor Based on 2D Materials: Drain Current Transient Approach / CHOI DeogKyu¹, JOO Yu Young¹, KIM Dohyeong¹, KIM Taehoon¹, KANG WOOYOUNG¹, KO Hayoung², KIM Ki Kang², KIM Eun Kyu¹, JEONG Mun Seok^{*1} (¹Department of Physics, Hanyang University, ²Department of Energy Science, Sungkyunkwan University)

P1-se.219*

Regio-selective chemical reaction in WSe₂ through phosphine ligand with large steric hindrance / KIM Taehoon¹, PARK Dae Young¹, JEONG Byeong Geun², KIM Bora¹, KIM Dong Hyeon², LEE Dohyeon¹, CHOI DeogKyu¹, SONG Jungeun³, WON Yo Seob², KO Hayoung², PARK Nohyun⁴, KIM Dong-Wook³, SUNG JOOYOUNG⁴, JEONG Mun Seok^{*1} (¹Department of Physics, Hanyang University, ²Department of Energy Science, Sungkyunkwan University, ³Department of Physics, Ewha Womans University, ⁴Department of Physics and Chemistry, DGIST)

P1-se.220*

Remote polarization modulation of metal monochalcogenide / KWON Chan¹, PARK Hyeon Jung¹, JO JiEun¹, PARK Dae Young¹, JEONG Mun Seok^{*1} (¹Department of Physics, Hanyang University)

P1-se.221*

Effects of Contact Resistance on Vertical Carrier Density Profile and Surface Defect Density of WSe₂ multilayers / CHOI Dahyun¹, JOO Min-Kyu^{*1} (¹Department of Applied Physics, Sookmyung Women's University)

P1-se.222*

Tunable Vertical Channel Migration Driven by Interlayer Resistance Modulation within Multilayer WSe₂ / HAN Yeongseo¹, KIM Hyejin¹, JOO Min-Kyu^{*1} (¹Department of Applied Physics, Sookmyung Women's University)

P1-se.223*

Variation of Carrier Mobility and Spatial Distribution with Thickness in WSe₂ Multilayers / SIM Eunji¹, SEONG Suin¹, JOO Min-Kyu^{*1} (¹Department of Applied Physics, Sookmyung Women's University)

[P1-bp] Biological Physics

Poster Exposure Period : April 24, 12:00 ~ April 24, 19:45

Presentation (mandatory): April 24, 18:15-19:45

Room: Exhibition Hall

P1-bp.001*

Exploring how different frequency oscillations interact and influence the routing of information in the brain / KIM Jungyoung^{1,2}, BATTAGLIA Demian^{4,5}, CHOI Jee Hyun^{*1,3} (1Brain Science Institute, KIST, 2Brain and Cognitive engineering program, KAIST, 3Bio-Medical Science & Engineering, UST, 4Cognitive and Integrative Neuroscience, CNRS, 5Laboratory for Cognitive and Adaptive Neuroscience (LNCA), University of Strasbourg (USIAS))

P1-bp.002*

Sequence-controlled limited self-aggregation of polyampholytes / LEE Nam Kyung^{*1}, KIM Seowon¹, JUNG Youngkyun², JOHNER Albert³ (1Department of Physics and Astronomy, Sejong University, 2Supercomputing Center, KISTI, 3Institut Charles Sadron CNRS-Unistra, Universite de Strasbourg)

P1-bp.003

Deep-learning-based Estimation of Heterogeneous persistence length of Bio-filaments / HONG Chang Beom¹, LIM Chan¹, JEON Jae-Hyung^{*1,2} (1Department of Physics, POSTECH, 2., Asia-Pacific Center for Theoretical Physics(APCTP))

P1-bp.004

Classification of the signaling properties of the mouse brain through analysis of burst(transient oscillation), spike and behaviour. / CHOI Jee Hyun^{*1}, LEE Chiwoo¹ (1Brain Science Institute, KIST)

P1-bp.005

Classifying diffusion modes of SCOTIN condensates on ER network in living cells / HAN HyeongTark¹, JEONG Euddeumeojin², YOO Joo-Yeon², JEON Jae-Hyung^{*1,3} (1Department of Physics, POSTECH, 2Department of Life Sciences, POSTECH, 3., APCTP)

P1-bp.006

Visualization of intercellular cargo transport via tunneling nanotube / KIM Byungju¹, OH Songmi², LEE Jong-Bong^{*1,2} (1Physics, POSTECH, 2School of interdisciplinary bioscience and bioengineering, Pohang University of Science and Technology (POSTECH))

P1-bp.007

Characterization of Unwinding and fork regression activity of E.coli RecG / SONG Minseok¹, HOHNG Sungchul^{*1} (¹Department of Physics and Astronomy, Seoul National University)

P1-bp.008

Exploring R-loop Formation in T7 Phage RNAP Translocation and Its Implications in the DSB Repair Pathway / JOO Dongwon¹, LIM Gunhyoung¹, HOHNG Sungchul^{*1} (¹Department of Physics and Astronomy, Seoul National University)

P1-bp.009*

Quantitative Profiling of Single Extracellular Vesicle Heterogeneity using Single-molecule fluorescence binding assay / GOO Jiyoung^{1,2}, KU Hyeyeoung^{1,2}, KIM Jeonghee², JEONG Cherlhyun^{*1,2} (¹Chemical and Biological Integrative Research Center, KIST, ²KHU-KIST Department of Converging Science and Technology, Kyunghee University)

P1-bp.010

Investigation of mechanical effects of presynaptic interactors on the SNARE complex using high-resolution magnetic tweezers

/ HONG Seokyun¹, YANG Taehyun¹, GO Ara², KIM Haesoo², YOON Tae-Young^{3,4}, SHON Min Ju^{*1,5} (¹Department of Physics, POSTECH, ²Engitein Research Institute, Engitein, ³School of biological Sciences and Institute for Molecular Biology and Genetics, Seoul National University, ⁴Department of Biomarker Discovery, PROTEINA Co., ⁵School of Interdisciplinary Bioscience and Bioengineering, POSTECH)

P1-bp.011*

Functional significance of trans-activating CRISPR RNA (tracrRNA) structures in CRISPR/Cas9 system / LEE Jeongmin^{1,2}, PARK Somi^{1,2}, YANG David Shihyung¹, WOO Jae-sung², JEONG Cherlhyun^{*1} (¹Chemical and Biological Integrative Research Center, KIST, ²Department of Life Sciences, Korea University)

P1-bp.012

Access and assess interferometric scattering microscopy on your commercial confocal microscope / LEE Minsu^{1,2}, HONG Seok-Cheol^{*1,2}, CHO Minhaeng^{2,3} (¹Center for Molecular Spectroscopy and Dynamics, Institute for Basic Science, ²Physics, Korea University, ³Chemistry, Korea University)

P1-bp.013*

Methylated DNA detection at the single molecule level for colorectal cancer screening / KIM Juyoung¹, HOHNG Sungchul^{*1} (¹Department of Physics and Astronomy, Seoul National University)

P1-bp.014

Enhanced Radiotherapeutic Effects with Nano-Radiosensitizer Incorporating c-Jun N-terminal Kinase Inhibitor in Mouse Brain Tumor Model / LIM Sa Hoe^{*1,2}, JUNG SHIN², LIU Zhipeng²

(¹Medical School/Department of Neurosurgery, Chonnam National University, ²Department of Neurosurgery, Chonnam National University Hwasun Hospital)

P1-bp.015

Development of ubiquitin-based single molecule force probe for strong cell force analysis /

KIM Byoung Choul^{*1}, VELLAMPATTI KRISHNAMOORTHY Srivithya¹, TRAN Tham¹, HWANG Sunha¹

(¹Major of Nano-Bioengineering, Incheon National University)

P1-bp.016*

Force-fluorescence setup for observing protein–DNA interactions under load / JUNG Jaehun¹,

KIM Subin², RAH Sang-Hyun¹, LEE Ja Yil², SHON Min Ju^{*1,3} (¹Department of Physics, POSTECH,

²Department of Biological Sciences, UNIST, ³School of Interdisciplinary Bioscience and Bioengineering, POSTECH)

P1-bp.017*

Fractionation by Spatial Heterogeneity Diffusion: Experiment and Two-Component-Random-Walk Model / CHOI Myung Chul^{*1}, LEE KeunMin Ken¹ (¹Department of Bio and Brain Engineering, KAIST)

Poster Sessions P2

[P2-pa] Particles and Fields: Non-accelerator-based Particle Physics Experiments

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-pa.001*

Developing Mobile Neutron Detector / KIM Hyeonu¹, JEONG Haemin¹, KIM Dojin¹, LEE Wonjun¹, OH Se Uk¹, YANG JEONGYEOL¹, YOO Jonghee^{*1} (¹Physics and Astronomy, Seoul National University)

P2-pa.002*

The novel crystal encapsulation technique for COSINE-100U / LEE Doohyeok^{*1} (¹physics, Kyungpook National University)

P2-pa.003*

The Gd-LS Stability test for the RENE / PARK Jungsic^{*1}, HONG SeoBeom¹, YANG Byeongsu⁹, JEONG Dabin², KIM Dojin⁹, MOON Dongho², YUN Eungyu², KIM Eunjoo⁶, HWANG Hyunho⁷, JANG Han Il¹⁰, KIM Hyunsoo⁸, YEO Insung³, JANG Jeeseung⁵, PARK Jisu², RYU Jiwon¹, CHOI Ji Young², YOO Jonghee⁹, CHOI June Ho³, GOH Junghwan⁷, OH Junkyo², JOO Kyungkwang², PAC Myoung Youl⁴, KIM Sangyoung², CHOI Seunghwan⁹, LEE Wonjun⁹, HWANG Wonsang⁷ (¹Department of Physics, Kyungpook National University, ²Department of Physics, Chonnam National University, ³Laboratory for high energy physics, Dongshin University, ⁴Department of Radiology, Dongshin University, ⁵DEPARTMENT OF PHYSICS AND PHOTON SCIENCE, GIST, ⁶Division of Science Education, Jeonbuk National University, ⁷Department of Physics, Kyung Hee University, ⁸Physics and Astronomy, Sejong University, ⁹Department of Physics and Astronomy, Seoul National University, ¹⁰Department of Fire Safety, Seoyeong University)

P2-pa.004*

Monte Carlo Simulation of RENE experiment / GOH Junghwan^{*1}, HWANG Wonsang¹, HWANG Hyunho¹, KIM Dojin², LEE Wonjun², CHOI Seunghwan², YOO Jonghee², YANG Byeongsu², KIM Sang yong³, MOON Dongho³, JOO Kyung Kwang³, JEONG Da Bin³, CHOI Ji Young³, OH Junkyo³, PARK Jisu³, YUN Eungyu³, JANG Jee-Seung⁴, KIM Eun Joo⁵, HONG SeoBeom⁶, PARK Jungsic⁶, RYU Jiwon⁶, KIM HyunSoo⁷ (¹Department of Physics, Kyung Hee University, ²Physics and Astronomy, Seoul National University, ³Physics Department, Chonnam National University, ⁴DEPARTMENT OF PHYSICS AND PHOTON SCIENCE, GIST, ⁵Division of Science Education, Jeonbuk National

University, ⁶Department of Physics, Kyungpook National University, ⁷Physics and Astronomy, Sejong University)

P2-pa.005

Data Acquisition System for the RENE experiment. / LEE Wonjun¹, YOO Jonghee^{*1}, KIM Dojin¹, MOON Dong Ho², KIM Eun Joo³, HWANG HyunHo⁴, KIM HyunSoo⁵, JANG Jee-Seung⁶, JIWON RYU⁷, GOH Junghwan⁴, PARK Jungsic⁷, OH Junkyo², JOO Kyung Kwang², KIM Sang yong², HONG SeoBeom⁷, HWANG Wonsang⁴, 최지영², 박지수², 윤은규², 양병수², 최승환¹, 장한일⁸, 박명렬⁹, 최준호⁹, 여인성⁹, 유인태¹⁰, 정다빈² (¹Physics and Astronomy, Seoul National University, ²Physics Department, Chonnam National University, ³Division of Science Education, Jeonbuk National University, ⁴Department of Physics, Kyung Hee University, ⁵Physics and Astronomy, Sejong University, ⁶DEPARTMENT OF PHYSICS AND PHOTON SCIENCE, GIST, ⁷Department of Physics, Kyungpook National University, ⁸Dep. of Fire Safety, Seoyeong University, ⁹Laboratory for high energy physics, Dongshin University, ¹⁰Department of Physics, Sungkyunkwan University)

P2-pa.006

The measurement of liquid scintillator detector characteristics with 20 inch PMTs / KIM Sang yong^{*1}, OH Junkyo¹, YUN Eungyu¹, JOO Kyung Kwang^{*1}, LEE Hyungi¹, CHOI Ji Young¹ (¹Department of Physics, Chonnam National University)

P2-pa.007*

High-temperature superconducting multiple-cell cavity for high-mass axion search / LEE Jooyoung¹, AHN Danho², LEE Jiwon^{1,2}, JEONG Junu², KIM Younggeun², BAE Sungjae^{1,2}, KWON Ohjoon^{*2}, YOUN SungWoo², PARK Seongtae², CHUNG Woohyun², YOUM Dojun¹, SEMERTZIDIS Yannis Kyriakos^{1,2} (¹Department of Physics, KAIST, ²Center for Axion and Precision Physics Research, Institute for Basic Science)

P2-pa.008

Neutron spectrum measurements at the Yemi underground laboratory / YOON Young Soo^{*1}, KIM Joonghyun¹, KIM Jungho¹, PARK Hyeonseo¹, KANG Sinchul¹, PARK Hyeoungwoo¹ (¹Ionizing Radiation Metrology Group, KRISS)

P2-pa.009

Particle detection analysis in a 1-ton Water-based Liquid Scintillator at BNL / PARK Juseong^{*1}, GWON Sunwoo¹ (¹Department of Physics, Chung-Ang University)

P2-pa.010

RENE Detector Design / HWANG HyunHo¹, GOH Junghwan^{*1}, HWANG Wonsang¹, MOON Dong Ho⁴, KIM Sang yong⁴, KIM Eun Joo⁷, KIM HyunSoo⁵, JANG Jee-Seung⁶, YOO Jonghee², JIWON

RYU³, PARK Jungsic³, OH Junkyo⁴, JOO Kyung Kwang⁴, HONG SeoBeom³ (1Department of Physics, Kyung Hee University, 2Department of Physics, Seoul National University, 3Department of Physics, Kyungpook National University, 4Department of Physics, Chonnam National University, 5Department of Physics, Sejong University, 6Department of Physics, GIST, 7Division of Science Education, Jeonbuk National University)

P2-pa.011*

Development of surface cleaning method for NaI(Tl) crystal / SON Minki^{*1} (1Physics, Chungnam National University)

P2-pa.012

Cold Electronic for DUNE LArTPC Detectors / KIM Suhyeon^{*1}, MASAKU Emar¹, KO Gyeongui¹ (1Physics, Chung-Ang University)

P2-pa.013*

Optimization and Fabrication of KAPAE Phase II Detector

/ JEONG Dongwoo¹, PARK Hyeoungwoo¹, CHO Jaeyoung², KIM Hong Joo^{*1} (1Department of Physics, Kyungpook National University, 2Center for Underground Physics, IBS)

P2-pa.014

A progress report of a Detector Searching for the Weakly Interacting Non-Baryonic Dark Matter / KO Jew U.^{*1}, WOO Jong-Kwan^{*1}, HWANG Jongseok¹, KO Young joon¹ (1Jeju National University)

P2-pa.015

Pattern recognition of the electronic structure of liquid scintillators and signal waveforms of photoelectrons. / CHOI Ji Young², YUN Eungyu^{1,2}, KIM Sang yong², LEE Hyungi², JOO Kyung Kwang^{*1,2} (1Department of Physics, Chonnam National University, 2Center for Precision Neutrino Research, Chonnam National University)

P2-pa.016

Low-background detection equipment for measurements of detector material samples in Yemilab

/ LEE Eunkyung^{*1}, HA Changhyun², HAHN Insik Kevin³, KANG Woon Gu¹, KAZALOV Vladimir⁴, KIM Gwoon¹, KIM Yeongduk^{1,5}, LEE Moo Hyun^{1,5}, LEONARD Douglas S.¹, PARK Su-yeon¹, SO Jungho¹, YOON Sangchol¹ (1Center for Underground Physics, Institute for Basic Science (IBS), 2Physics, Chung-Ang University, 3Center for Exotic Nuclear Studies, Institute for Basic Science, 4Baksan Neutrino Observatory, INR, 5Physics, University of Science and Technology)

P2-pa.017

Studies on the characterization and development of halide perovskite quantum dot liquid scintillator for next-generation neutrino detection

/ JOO Kyung Kwang^{*1}, KIM Eun Min¹, CHANG Ki Seog¹, JEONG Da bin¹, KANG Tae yeong¹
(¹Department of Physics, Chonnam National University)

P2-pa.018*

Pulse Shape Discrimination of n/γ in Liquid Scintillator at PMT Saturation Region with Artificial Neural Network / YUN Eungyu¹, KIM Sang yong¹, LEE Hyungi¹, JOO Kyung Kwang^{*1}
(¹Department of Physics, Chonnam National University)

P2-pa.019

Study on pulse shape discrimination of CsI(Tl) crystal for dark matter search / PARK Sedong¹, KIM Hong Joo^{*1}, KIM Kyungwon², LEE Hyun Su² (¹Department of Physics, Kyungpook National University, ²Center for Underground Physics, IBS)

P2-pa.020

Feasibility study on the acetone-based liquid scintillator loaded with lithium-6Li / KANG Tae yeong¹, JOO Kyung Kwang^{*1}, CHANG Ki Seog¹, KIM Eun Min¹, OH Junkyo¹, JEONG Da bin¹
(¹Department of Physics, Chonnam National University)

P2-pa.021

The PMT performance result for RENE experiment / OH Junkyo¹, JANG Jee Seung^{*2}, YUN Eungyu¹, JOO Kyung Kwang^{*1}, CHOI Ji Young¹, JEONG Da Bin¹, KIM Sang yong¹ (¹Department of Physics, Chonnam National University, ²Department of Physics and Photon Science, GIST)

P2-pa.022*

Pulse shape discrimination (PSD) of nuclear recoil and electron recoil in NaI(Tl) crystal / LEE Yujin^{*1}, KIM Kyungwon², LEE Hyun Su², PARK Sedong³, JU Han wool⁴, LEE Seo Hyun⁵ (¹Department of Physics, Chung-Ang University, ²Center for Underground Physics, IBS, ³Department of Physics, Kyungpook National University, ⁴Department of Physics & Astronomy, Seoul National University, ⁵Basic Science, UST)

P2-pa.023

R&D for slow liquid scintillator for neutrino search / PARK Su-yeon^{*1}, JEON Eunju¹, KIM Hongjoo³, KIM Yeongduk¹, LEE Jaison¹, LEE Jooyoung³, LEE Kyungmin², SEO Jeewon¹, WON Eunil²
(¹Center for underground physics, IBS, ²Physics, Kyungpook National University, ³Physics, Korea University)

P2-pa.024*

Optimization of a single photoelectron analysis for COSINE-100U / CHO Jaeyoung^{*1}

(¹Department of Physics, Kyungpook National University)

P2-pa.025*

Liquid Scintillator Production for COSINE-100 Upgrade / KIM Jinyoung^{1,2}, HA Chang Hyon^{*1}, KO

Young Ju² (¹Department of Physics, Chung-Ang University, ²Center for Underground Physics, IBS)

P2-pa.026*

Liquid scintillator for low mass dark matter search / LEE Hyunseok^{*1} (¹Basic Science, University of Science and Technology, Korea)

P2-pa.027*

Naive Bayes Classifier : New event selection for COSINE-100 / KIM Jinyoung¹, KOH Byoung-cheol¹, HA Chang Hyon^{*1} (¹Department of Physics, Chung-Ang University)

P2-pa.028*

Data monitoring for the NEON experiment / LEE Seo Hyun^{*1} (¹Basic Science, UST)

P2-pa.029*

Measurements of black sheet for WCTE with the goniometer in water / KIM SeEun¹, CHOI Koun^{*2} (¹Dept of Physics, Chungnam National University, ²Center for Underground Physics, IBS)

[P2-co.1] Condensed Matter Physics: Nano-Meso/Surface-Interface

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-co.101*

Graphene thermocouple fabricated on an EVA/PET substrate / GU Daewon¹, CHOI

Moonnyeong¹, KHAN Munis², YURGENS August², NAM Youngwoo^{*1} (¹Department of Physics, Gyeongsang National University, ²Department of Microtechnology and Nanoscience, Chalmers University of Technology)

P2-co.102*

A Cd₃As₂ nanowire device coupled to a superconducting LC circuit. / JUNG Minkyung^{*1,4,5}, KIM Jisu², AN Sungjin^{1,2}, KIM Hakseong³, SEO Jungpil^{2,4} (¹Department of Nanotechnology, DGIST,

²Department of Physics and chemistry, DGIST, ³KRISS, KRISS, ⁴Institute of next generation semiconductor technology (INST), DGIST, ⁵Department of Interdisciplinary Engineering, DGIST)

P2-co.103*

Conductance quantization at zero magnetic field in a few layer WSe₂ conducting channel constricted by the bottom split gates / KIM MinGue^{*1}, BAE Myung-Ho², KIM Ju Jin¹

(¹Department of Physics, Jeonbuk National University, ²Division of Physical Metrology, KRISS)

P2-co.104*

Cryogenic Operation of Junctionless Ambipolar MOSFET Fabricated on Intrinsic Si Substrate /

SONG Wonho², OH Sejin¹, PARK Hyunjae¹, KIM Jiwan¹, PARK Kibog^{*1,3} (¹Department of Physics, Ulsan National Institute of Science and Technology (UNIST), ²SC Panel Design Team 5, LG Display,

³Department of Electrical Engineering, Ulsan National Institute of Science and Technology (UNIST))

P2-co.105*

Exploring Density-of-State of Graphene Heterostructures via Hall Measurement / KIM San¹,

KIM Minsoo^{*1} (¹Department of Applied Physics, Kyung Hee University)

P2-co.106

Magnetic-Atom Dimers Embedded in a Molecule on Au(111) Studied by Scanning Tunneling

Microscopy / CHANG Min Hui¹, KANG Min Jeong¹, HONG Seong-Hyun¹, JANG Seunghyeok¹,

KAHNG Se-Jong^{*1} (¹Department of Physics, Korea University)

P2-co.107

Tunnel probe spectroscopy of Mott gap in twisted double-bilayer graphene / LEE Gil-Ho^{*1},

JEONG Hyeon-Woo¹, PARK Sein¹, WATANABE Kenji², TANIGUCHI Takashi² (¹Department of Physics,

POSTECH, ²Materials Science, NIMS)

P2-co.108

Wafer-Scale Epitaxial Growth of an Atomically Thin Single-Crystal Insulator as a Substrate of Two-Dimensional Material Field-Effect Transistors / AHN Joung Real^{*1,7}, YOO Hyeon Ju¹,

WHANG Dong Mok², KIM Philip⁶, KIM Eun Hye¹, LEE DoHee¹, GU Tae Jun², YOO Hyobin³, JANG

Yamujin², JEONG Jaemo¹, KIM Hyun Woo¹, KANG Seog Gyun², KIM Hoijoon², LEE Heesoo², JO Kyu

Jin², KIM Beomju¹, KIM Jin Wook¹, IM Seong Hyun¹, OH Chang Seok⁴, LEE Changgu⁵, KIM Ki

Kang⁴, YANG Cheol Woong², KIM Hyoungsub², KIM Youngkuk¹ (¹Department of Physics,

Sungkyunkwan University, ²School of Advance Materials Science and Engineering, Sungkyunkwan

University, ³Department of Physics, Sogang University, ⁴Department of Energy Science,

Sungkyunkwan University, ⁵School of Mechanical Engineering, Sungkyunkwan University,

⁶Department of Physics, Harvard University, ⁷Samsung-SKKU Graphene Center and SAINT, Sungkyunkwan University)

P2-co.109*

Propagation of Surface Acoustic Wave through Graphene Heterostructure / AHN SANG IL¹, KIM Minsoo^{*1} (¹Department of Applied Physics, Kyung Hee University)

P2-co.110

Effect of quantum capacitance in the van der Waals tunneling spectra of carbon nanotube / KIM Wusin^{*1}, MYOUNG Nojoon², BAE Myung-Ho³, KIM Ju Jin¹ (¹Department of Physics, Jeonbuk National University, ²Department of Physics Education, Chosun University, ³Group of Quantum Device, KRISS)

P2-co.111*

Coulomb blockade phenomena in metal nanoislands on a two dimensional semiconductor / CHO Doohee^{*1}, BANG Junho¹, LEE Byeongin¹, GE Jian-feng² (¹Department of Physics, Yonsei University, ²Topological Quantum Chemistry, Max Planck Institute for Chemical Physics of Solids)

P2-co.112*

Real-time Imaging of Polar Domain Dynamics in multilayer WTe₂ via Operando TEM / HONG Seungho¹, YOO Hyobin^{*1} (¹Department of Physics, Sogang University)

P2-co.113*

Direct Evidence of V-V Dimers Existing in Metallic Phase VO₂ / PARK Young-Woo¹, HWANG In-Hui², YEO Sunmog³, HAN Sang-Wook^{*1} (¹Department of Physics Education, Jeonbuk National University, ²포항공과대학교(POSTECH) Pohang Accelerator Laboratory, ³Korea Atomic Energy Research Institute, KOMAC)

P2-co.114*

Orientation-dependent Local Structural Properties and Growth Mechanism of CoO Films on Sapphire Substrates / HAN Sang-Wook^{*1}, KANG Joon-Ho², KANG Joon-Ho¹, KANG Joon-Ho¹, KANG Joon-Ho⁴, KANG Joon-Ho³ (¹Department of Physics Education, Jeonbuk National University, ²Pohang Accelerator Laboratory, POSTECH, ³X-ray Science Division, Argonne National Laboratory, ⁴Center for Nanoscale Materials, Argonne National Laboratory)

P2-co.115*

Comparative Analysis of Single-Slice and Multi-Slice Electron Ptychography in Visualizing Light Elements: A Case Study with Strontium Titanate / CHEON Semin¹, YANG Yongsoo^{*1} (¹Department of Physics, KAIST)

P2-co.116

Droplet evaporation under airflow / JEON Dohyeon¹, WEON Byung Mook^{*1} (¹School of Advanced Materials Science and Engineering SKKU Advanced Institute of Nanotechnology (SAINT, Sungkyunkwan University)

P2-co.117

Thickness-Dependent Band Structure and Tunable Work Function of HfSe₂ Thin Films / KHIM Min Cheol^{1,2}, RHEE Tae Gyu^{1,2}, CHOI Byoung Ki^{1,4}, KIM Hyuk Jin¹, CHANG Young Jun^{*1,2,3} (¹Department of Physics, University of Seoul, ²Department of Smart cities, University of Seoul, ³Department of Intelligent Semiconductor Engineering, University of Seoul, ⁴ALS, Lawrence Berkeley National Lab)

P2-co.118

The preparation and optical properties of PbTiO₃-TiO₂ heterostructure nanotubes / BU Sang Don^{*1}, CHO Sam Yeon¹, KIM Eun-Young¹ (¹Department of Physics, Jeonbuk National University)

P2-co.119*

Quantification of tribocharging driven by thermoelectricity / MUN JIHO¹, SHIN Eui-cheol¹, KIM Yong-Hyun^{*1} (¹Department of Physics, KAIST)

P2-co.120

Magnon-mediated superconducting resonator-resonator coupling / KIM Taehee¹, AN Sung Jin², KIM Hakseong³, SEO Jungpil², JUNG Minkyung^{*1} (¹Department of Nanotechnology, DGIST, ²Department of Physics and chemistry, DGIST, ³Fab infra team, KRISS)

P2-co.121

Luminescent Composite Material Fabricated from Carbon Dots and Red Phosphors for application to UV-LED chips and Metal ion Detection / YANG Hyun Kyoung^{*1,2}, JUNG Jae Yong¹, PARK JinYoung², HONG Woo Tae¹ (¹Department of Electrical, Electronics and Software Engineering, Pukyong National University, ²Marine-Bionics convergence technology center, Pukyong National University, Busan 48513, Republic of Korea, Pukyong National University)

P2-co.122*

Controlling structure and interfacial interaction of monolayer TaSe₂ on bilayer graphene / LEE HYOBEO¹, IM HAYOON², PARK Kyoungree¹, RYU Hyejin³, HWANG Choongyu², HWANG Jinwoong^{*1} (¹Department of Physics, Kangwon National University, ²Department of Physics, Pusan National University, ³Center for Spintronics, KIST)

P2-co.123

Characterization of lateral friction on nanostructured periodic surface of Ni fabricated using femtosecond laser pulses / CHOI Hyejee¹, KIM Shinhui¹, PARK Taehoon^{2,3}, HWANG TaekYong⁴, CHO Jongweon^{*1} (¹Department of Physics, Myongji University, ²Industrial Components R&D Department, KITECH, ³Department of Materials Science and Engineering, Inha University, ⁴Digital Manufacturing Division, KITECH)

P2-co.124*

Tilt-focal series alignment for low-dose atomic-scale 3D phase contrast tomography of crystalline nanoparticles using estimated crystal orientation and particle shape / SHIM Jaehyu¹, YANG Yongsoo^{*1} (¹Department of Physics, KAIST)

P2-co.125

Enhanced Hybrid Nanogenerator Exploiting Piezoelectric and Triboelectric Effects with Electrohydrodynamic PVDF/MXene Composite / PARK Hyunje¹, LEE Dongseong², CHAE Heejoon³, KANG Dae Joon^{*3} (¹Research Institute of Basic Sciences, Sungkyunkwan University, ²Interdisciplinary Course of Physics and Chemistry, Sungkyunkwan University, ³Department of Physics, Sungkyunkwan University)

[P2-co.2] Condensed Matter Physics: Computational Physics

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-co.201*

Study on the dynamics of intermediate range order in boron oxide using machine learning interatomic potential / SHIM JaeHwan¹, YU Jaejun^{*1} (¹Department of Physics and Astronomy, Seoul National University)

P2-co.202*

Electronic structure and phonon dispersion calculations in the semiconducting memory system of AgI / PARK Jeong hyeon^{*1}, KANG Chang-Jong¹ (¹physics, Chungnam National University)

P2-co.203*

Magnetic States Prediction in Pyrochlore Iridates Using Machine Learning / JANG Yerin¹, KIM Choong Hyun², GO Ara^{*1} (¹Department of Physics, Chonnam National University, ²School of Computational Sciences, KIAS)

P2-co.204*

Linearized interaction theory for gapless edge states of topological insulators / SEO Jaeuk¹, KIM Yong-Hyun^{*1} (¹Department of Physics, KAIST)

P2-co.205*

Ab initio study on the flat band in the rhombohedral multilayer graphene / KIM Sangwan¹, KANG Seoung-Hun², KWON Young-Kyun^{*1} (¹Department of Physics, Kyung Hee University, ²Materials Science and Technology Division, Oak Ridge National Laboratory)

P2-co.206

Novel half-Heusler compounds TaRuX (X = pnictogens) as promising thermoelectric materials / YUN Won Seok^{*1}, LEE Myoung-Jae¹, HAN Sang Wook² (¹Division of Nanotechnology, Convergence Research Institute, DGIST, ²Basic Science Research Institute and EHSRC, University of Ulsan)

P2-co.207*

Transition-metal phthalocyanines as versatile spins-on-surfaces building blocks / TAHERPOUR Saba^{1,2}, URDANIZ Corina^{1,3}, YU Jisoo^{1,2}, WOLF Christoph^{*1,3} (¹IBS center for Quantum Nanoscience, IBS, ²Department of Physics, Ewha Womans University, ³Center for Quantum Nanoscience, Ewha Womans University)

P2-co.208*

First-principles study on surface-originated quantum confinement in III-V colloidal quantum dots / LEE Junho¹, JUNG Jaegwan¹, KIM Meeree², JEONG Sohee², KIM Yong-Hyun^{*1} (¹Department of Physics, KAIST, ²Sungkyunkwan Institute of Energy Science and Technology, Sungkyunkwan University)

P2-co.209*

Origin of different charge density wave phases in LiVX₂ (X = S, Se) / KANG Chang-Jong^{*1}, HAN Jae Min¹ (¹Department of Physics, Chungnam National University)

P2-co.210

Metalloporphyrin-Defected Carbon Nanotubes: Promising Spin-Selective Sensors for Toxic Molecules / CHAE Jinwoong¹, KIM Gunn^{*1} (¹Department of Physics and Astronomy, Sejong University)

P2-co.211*

Influence of Oxygen Ratio on the spin properties at the interfaces between Ag and Bi oxides:

a first-principles and machine learning study / SONG Jihoon¹, KWON Young-Kyun^{*1}
(¹Department of Physics, Kyung Hee University)

P2-co.212

Real-time analysis of charge redistribution mechanism in chiral device / JEONG Uiseok¹, YAN Binghai³, PARK Noejung^{*1} (¹Department of Physics, UNIST, ²UNIST, ³Department of Condensed Matter Physics, Weizmann Institute of Science)

P2-co.213*

Simulation of Transverse Field Ising Chain : A comparative study using DMRG and exact solution / CHA JeongHyeok¹, KIM Heung-Sik^{*1} (¹Department of Physics, Kangwon National University)

P2-co.214

Optimizing Bath Fitting: A Machine Learning Approach / KIM Taeung¹, GO Ara^{*1} (¹Department of Physics, Chonnam National University)

P2-co.215

Unraveling Complex Phases in TaS₂ through DFT Calculations / OH Jinseok¹, SHIN Dong Bin², PARK Noejung^{*1} (¹UNIST, ²Department of Physics and Photon Science, GIST)

P2-co.216

Investigation of Polaron existence in Strontium Titanate: Insights from First Principles Calculations / PALANIVEL Umadevi, KIM Hyunjung^{*} (¹Center for Ultrafast Phase Transformation, Department of Physics, Sogang University)

P2-co.217

Chirped Phonon dynamics in nonlinear optics phenomena / KAZEMPOUR Ali^{*1}, PARK Noejung¹ (¹physics, UNIST)

P2-co.218

Introduction to SevenNet / PARK Yutack^{*1}, KIM Jaesun¹, HAN Seungwu¹ (¹Materials Science and Engineering, Seoul National University)

P2-co.219

Development of Wavepacket Calculation Method for Abelian Band Geometric Quantities in Metallic Systems / PARK Noejung^{*1}, TAGHIZADEH SISAKHT Esmail¹ (¹UNIST)

P2-co.220

Tunable valley splitting in MnO₂/WS₂ heterostructure / PARK Jaehong¹, HONG SukLyun^{*1}, KIM Yunjae¹ (¹Sejong University)

P2-co.221

Buried defects for solid-state quantum technologies

/ SEONG YUN Hong¹, LEE Yeonghun^{*1} (¹Electronic Engineering, Incheon National University)

P2-co.222

Efficient strategy to find ground state of the impurity Hamiltonian with active learning / LEE

Jeongmoo¹, GO Ara^{*1} (¹Department of Physics, Chonnam National University)

P2-co.223

First-principles study of Janus TMD heterostructure for Berry curvature investigations /

HONG SukLyun^{*1}, KIM Yunjae¹, SUNG Dongchul¹, KIM Junghwan¹, CHOI Chang-Gyu¹, CHOI Hyeong-Kyu¹ (¹Sejong University)

[P2-co.3] Condensed Matter Physics: Other Condensed Materials/Instruments

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-co.301

Study of resistivity of single crystal copper thin film depending on thickness and aging time /

KIM Su Jae¹, CHEON Miyeon², JEONG Se Young^{*3} (¹CrystalBank Research Institute, Pusan National University, ²Quantum matter core-facility, Pusan National University, ³Dept. of Optics and Mechatronics engineering, Pusan National University)

P2-co.302*

The study of infrared absorption in type-2 Dirac semimetal, NiTe_{2-x}Se_x (x=0~1) / CHOE

Kangrok¹, HWANG Younghun², LEE Jaekwang³, CHANG Young Jun¹, CHOI E. J.^{*1} (¹Physics Department, University of Seoul, ²Department of Physics, Pusan National University, ³Electricity and Electronics and Semiconductor Applications, Ulsan College)

P2-co.303*

Raman spectroscopy of Hofmann-type iron(II)-organics spin crossover complex / TAE See-

eun¹, MOHAMED Ahmed Yousef¹, CHO Deok-Yong^{*1} (¹Department of Physics, Jeonbuk National University)

P2-co.304*

Optical Scanning Tunneling Microscopy at Low Temperature / FARAHI SHANDIZ Pegah^{2,1}, LEE Jiyeon^{2,1}, OLLIER Alexina¹, FANG Lei¹, LEE Soonhyeong¹, YOON Sangwon¹, SEO Minsu¹, HEINRICH Andreas^{2,1}, JANG Won Jun^{*1} (¹Center for quantum nanoscience, Center for Quantum Nanoscience, ²Department of Physics, Ewha Womans University)

P2-co.305

Quantum Geometry in Hexagonal Lattice Circuit QED Systems with Triple-leg Stripline Resonators / KIM Dongmin², RHIM Jun Won³, MOON Kyungsun^{*1,2} (¹Department of Physics, Yonsei University, ²Institute of Quantum Information Technology, Yonsei University, ³Department of Physics, Ajou University)

P2-co.306*

The effect of periodic domain boundary on metal insulator transition in VO₂ films grown on Al₂O₃(006) / KANG Hyon Chol^{*1}, YOON Young Min², CHOI Seok Jun², KWON Oh Young², KANG Sae Hyun², HAN Seong Hyun², LEE Su Yong³, KIM Jin Woo³, OH Ho Jun², HA Sungsoo⁴, NOH Do Young² (¹Department of Materials Science and Engineering, Chosun University, ²Department of Physics and Photon Science (DPH) & School of Materials Science and Engineering, GIST, ³9C beamline & 5D beamline, Pohang Accelerator Laboratory, ⁴Department of Physics, Sogang University)

P2-co.307*

Generation of nanopillars on hexagonal Boron Nitride / LEE Yeunjeong^{1,2}, KARANKOVA Sofiya^{1,3}, SONG Yong Won^{1,3}, GONG Su-Hyun^{1,2}, MOON Hyowon^{*1,3} (¹Center for Optoelectronic Devices and Materials, KIST, ²Physics, Korea University, ³Division of Nanomaterials Science and Engineering, UST)

P2-co.308*

Observation of metal-insulator transition suppression in epitaxial V₂O₃ thin film using synchrotron X-ray diffraction / KANG Sae Hyun¹, YUN Youngmin¹, OH Ho Jun¹, CHOI Sukjune¹, PARK Sang-Youn³, SONG Sehwan⁴, PARK Sungkyun⁴, NOH Do Young¹, KANG Hyon Chol^{*2} (¹Department of Physics and Photon Science, GIST, ²Department of Materials Science and Engineering, Chosun University, ³Beamline Department, Energy Environment Research Team, Pohang Accelerator Laboratory, ⁴Department of Physics, Pusan National University)

[P2-ap.1] Applied Physics: Oxide Materials

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

P2-ap.101

Anti-Counterfeiting and Encryption Technology using

Luminescence Properties of $\text{Zn}_2\text{GeO}_4\text{:Eu}^{2+}$ / HAN Jaeho¹, SIM Jaemin¹, LEE YUN SANG^{*1}

(¹Department of Physics, Soongsil University)

P2-ap.102*

Solution process a-IGZO:H TFT 의 전기적 특성 분석 / KANG Haeyong^{*1}, LEE Hyeonseop¹, JO

Youngchun¹, KIM Kang Hyun² (¹Department of Physics, Pusan National University, ²Display, Samsung)

P2-ap.103*

Effect of the top electrode size on ferroelectric domain switching in hafnium-zirconium oxide thin film capacitors

/ BAE Seong Bin¹, SHIN June Hee¹, YANG Sang Mo^{*1} (¹Department of Physics, Sogang University)

P2-ap.104*

Polarization Rotation in Freestanding Ferroelectric Heterojunctions through Flexoelectric

Tuning / MUNIR Ahmad¹, MUHAMMAD Sheeraz¹, KIM Ill Won¹, AHN Changwon¹, KIM Tae Heon^{*1}

(¹Department of Physics, University of Ulsan)

P2-ap.105*

Progressive and stable synaptic plasticity with attojoule energy consumption by the interface engineering of a metal/ferroelectric / PARK Bae Ho^{*1}, YOON Chansoo¹, KIM Sohwi¹, OH

Gwangtaek¹, SHIN Minjeong¹, KEE Eun Hee¹, LEE Ji Hye^{2,3}, PARK Sanghyun⁴, KANG Bo Soo⁴, KIM Young Heon⁵ (¹Department of Physics, Konkuk University, ²Institute of Basic Science, CCES (IBS), ³Department of Physics and Astronomy, Seoul National University, ⁴Department of Applied Physics, Hanyang University, ⁵Graduate School of Analytical Science and Technology, Chungnam National University)

P2-ap.106*

Memristive switching mechanism of $\text{TiO}_2/\text{Al}_2\text{O}_3$ crossbar array deposited by atomic layer deposition method and its logic gate application / RYU Woohyeon¹, YOON Chansoo¹, PARK

Bae Ho^{*1} (¹Department of Physics, Konkuk University)

P2-ap.107

Neuromorphic devices based on the electrochemical metallization in the ferroelectric material

/ PARK Bae Ho^{*1}, YOON Chansoo¹, JEON Jihoon¹, LEE Duk Hyun¹ (¹Department of Physics, Konkuk University)

P2-ap.108

Photochromism and persistent luminescence properties of Bi³⁺/Sm³⁺ co-doped LiNbO₃ / LEE DONG JAE^{1,2}, LEE YUN SANG^{*1,2} (¹Department of Physics, Soongsil University, ²Integrative Institute of Basic Sciences, Soongsil University)

P2-ap.109*

Optimization of LaNiO₃ Electrode for High-Quality Pb(Zr_{0.52}Ti_{0.48})O₃ Films on Flexible Substrate / CHOI Yeong Uk¹, AHN Hyunsoo¹, JUNG Jong Hoon^{*1} (¹Department of Physics, Inha University)

P2-ap.110*

Near-Infrared Photodetection in SrRuO₃/LaAlO₃/Nb:SrTiO₃ Schottky Junctions Enabled by Interfacial Band Alignments / RYOU SANGHYEOK¹, LEE Hyungwoo^{*1,2} (¹Department of Energy Systems Research, Ajou University, ²Department of Physics, Ajou University)

P2-ap.111*

Atomic-scale Interface Modification for Strong Random Telegraph Noise in Complex Oxide Heterostructures / KIM Doyeop¹, LEE Hyungwoo^{*1,2} (¹Department of Energy Systems Research, Ajou University, ²Department of Physics, Ajou University)

P2-ap.112

Temporal and Thermal-Dependent Chromatic Modulative Luminescence in Sm³⁺/Er³⁺-Doped Calcium Gallo-Germanate Crystals / WI Sang Won^{*1}, JIN Yun Ho¹, LEE Yun Sang¹ (¹Department of Physics, Soongsil University)

P2-ap.113

Dielectric and electronic properties of Be doped nickel oxide nanopowder / KIM Gyung Hyun¹, HONG Dongpyo¹, LEE Eunjung¹, JEON Young Pyo¹, YOO Young Joon^{*1}, PARK Sang Yoon² (¹Advanced institutes of convergence technology, ²School of Electronic Engineering, Kyonggi University)

P2-ap.114

Unveiling the Luminescence properties of RE-Doped GdTaO₄ (RE = Eu³⁺, Er³⁺, and Tm³⁺) for Vivo-imaging / CHOI Seonghun¹, WI Sang Won¹, LEE YUN SANG^{*1} (¹Department of Physics, Soongsil University)

P2-ap.115

Spinodal phase separation in $(\text{In}_x\text{Ga}_{1-x})_2\text{O}_3$ thin films grown using a powder sputtering method / LIM HYOMI¹, KANG Hyon Chol^{*1} (¹Department of Materials Science and Engineering, Chosun University)

P2-ap.116

Synthesis and characterization of self-powered solar-blind ultraviolet photodetectors based on SnO_2 nanowires / PARK Mijin¹, KANG Hyon Chol^{*1} (¹Department of Materials Science and Engineering, Chosun University)

P2-ap.117

Self-catalyzed in-plane ITO nanowires via vapor-liquid-solid mechanism during thermal chemical vapor deposition in a hydrogen reducing atmosphere / SEO Jihye¹, KANG Hyon Chol^{*1} (¹Department of Materials Science and Engineering, Chosun University)

P2-ap.118

Optical Temperature Measurement Study of $\text{K}_5\text{Y}(\text{P}_2\text{O}_7)_2$ Doped with Er^{3+} Ions. / LEE CHAEYEON¹, LEE YUN SANG^{*1} (¹physics, Soongsil University)

[P2-ap.2] Applied Physics: Magnetism/Energy/Computational

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-ap.201

Gilbert damping control via transient grating excited by dual optical pulses / KIM Jiwan^{*1} (¹Physics department, Kunsan National University)

P2-ap.202*

Rapid Local Heat Generation via Ferromagnetic Resonance in Magnetic nanoparticles / KIM Yongsu¹, LEE Jae-Hyeok¹, KIM Sang-Koog^{*1} (¹Seoul National University)

P2-ap.203*

Non-reciprocal absorption in reflectionless hybrid magnonics / KIM Bojong¹, KIM Junyoung¹, KIM Haechan¹, KIM Sang-Koog^{*1} (¹Seoul National University)

P2-ap.204*

Negative Refraction in a Photon-Magnon Hybrid System / KIM Junyoung¹, KIM Bojong¹, KIM Bosung^{1,2}, JEON Haechan¹, KIM Sang-Koog^{*1} (¹Seoul National University, ²SK hynix, SK hynix)

P2-ap.205

Optimizing Neuromorphic Computing with Non-linear Dynamic Behavior in Photon-Magnon Hybrid Systems / JEON Haechan³, PARK Gyuyoung³, MILLET Loic², KIM Bojong³, KIM Junyoung³, KIM Sang-Koog^{*3} (¹Nanospinics Laboratory, Seoul National University, ²Group of Applied Physics, University of Geneva, ³Seoul National University)

P2-ap.206*

Elasticity Modulation of Helical Spring Magnets via Magnetic Field, Utilizing Composite Materials of Magnetic-Particle-Polymers / KIM Sang-Koog^{*1}, AN Hyun¹, KIM Yongsub¹, YOON Ji-Yeol² (¹Seoul National University, ²Department of Magnetism, LG Innotek)

P2-ap.207

Spin Hall Magnetoresistance in Metal-doped Wafer-scale MoS₂ / DO Nga T.¹, MAHDI Muntasir², PHAM TRANG HUYEN CAO¹, KIM Hyunjung³, KIM Soo Min⁴, ZHANG Wei⁵, HAMILTON Michael², KIM Tae Hee^{*1} (¹Department of Physics, Ewha Womans University, ²Department of Electrical and Computer Engineering, Auburn University, ³Center for Ultrafast Phase Transformation, Department of Physics, Sogang University, ⁴Department of Chemistry, Sookmyung Women's University, ⁵Department of Physics and Astronomy, University of Carolina at Chapel Hill)

P2-ap.208*

Method for determining the magnetic momentum compensation temperature of ferrimagnets by extrapolating from narrow temperature range / CHANG Jun-Young^{1,2}, JEONG Yun-Chae^{1,3}, LEE Ah-Yeon⁴, CHOI Yeon Suk⁴, PARK Seung-young⁴, MIN Byoung-Chul¹, JE Soong-Geun³, CHOE Sug Bong^{*2}, KIM Duck-Ho^{*1} (¹Center for Spintronics, Korea Institute of Science and Technology (KIST), ²Department of Physics and Astronomy, Seoul National University, ³Department of Physics, Chonnam National University, ⁴Division of Scientific Instrumentation and Management, KBSI)

P2-ap.209*

M-Fe 첨가가 Fe-6.5wt%Si 의 층진율 및 투자율에 미치는 영향 / KIM Sang Woo¹, KIM Deok Hyeon¹, IN Ye Jin¹, SEO Ji Hun¹, LEE BO WHA^{*1} (¹Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies)

P2-ap.210*

Fe-Ni 연자성 복합체의 나노입자 (Ni, Zn) 첨가에 따른 투자율 변화 / SEO Ji Hun¹, IN Ye Jin¹, KIM

Sang Woo¹, KONG Hyun Kyung¹, LEE BO WHA^{*1} (¹Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies)

P2-ap.211*

Excitation and Detection of Propagating Spin Waves using Flip-Chip Technique / BAEK

Jinhyun¹, SONG Moojune¹, CAO VAN Phuoc², YOU Mujin¹, YANG Jiseok¹, LEE Geun-Hee¹, JI Yubin¹, SOON Youngseon¹, LEE Donghyeon³, KIM Sanghoon³, JEONG Jong-Ryul², PARK Albert Min Gyu¹, KIM Kab-Jin^{*1} (¹Department of Physics, KAIST, ²Department of Material Science and Engineering, Chungnam National University, ³Department of Physics and Energy Harvest Storage Research , University of Ulsan)

P2-ap.212*

Time-resolved detection of ultrafast magnetization switching driven by spin-orbit torque /

SHIN Ji ho¹, SEONGHYUB Lee², CHOE Sug Bong^{*1} (¹Department of Physics, Seoul National University, ²Center for spintronics, KoreaInstituteofScienceandTechnology)

P2-ap.213*

Coherent Coupling between Propagating Magnons and Standing Phonons on Chip / SONG

Moojune¹, SOON Youngseon¹, CAO VAN Phuoc², YOU Mujin¹, JEONG Jong-Ryul², PARK Albert Min Gyu¹, KIM Kab-Jin^{*1} (¹Department of Physics, KAIST, ²Department of Material Science and Engineering, Chungnam National University)

P2-ap.214*

Magnetostriction via tetragonal distortion in bcc Fe & fcc Ni. / YOO Minjae¹, KIM Bomin¹,

HYUNJU LEE¹, NGUYEN Quynh Anh Thi¹, RHIM Sonny^{*1} (¹Department of Physics, University of Ulsan)

P2-ap.215

Large Piezoelectricity in Thermally Annealed Mn-doped (K,Na)NbO₃ Nanofibers / CHO

Hyunjung¹, KOUH Taejoon^{*1} (¹Department of Nano and Electronic Physics, Kookmin University)

P2-ap.216

Unveiling the impact of Bi-doping on the electronic transport and stability of MAPbBr₃ single crystals / YOUN Sarah Su-O¹, KIM Gee Yeong², JO William^{*1} (¹Department of Physics, Ewha

Womans University, ²Advanced Photovoltaics Research Center, KIST)

P2-ap.217

Mitigation of stress-induced charge degradation in flexible Cu(In,Ga)Se₂ solar cells through alkali treatment / PARK Ha Kyung¹, YIM Kanghoon², LEE Jiyeon¹, CHO Yunae³, JEONG Inyoung³,

SHIN Donghyeop³, GWAK Jihye³, KIM Kihwan³, JO William^{*1} (¹Department of Physics, Ewha Womans University, ²Computational Science and Engineering Laboratory, KIER, ³Photovoltaic Laboratory, KIER)

P2-ap.218*

Enhancing Photovoltaic Performance in Organic Cation Mixed Perovskite Solar Cells through Multiple Thermal Co-evaporation / GIM Yeonsoo¹, PARK Ha Kyung¹, JO William^{*1} (¹Department of Physics, Ewha Womans University)

P2-ap.219

Multiphysics Simulation of Lunar-Resilient Glass for Thermal and Impact Resistance / PARK Inkyu^{*1}, JUNG Saeyoung¹ (¹University of Seoul)

P2-ap.220

Molecular dynamics simulations of amorphous monolayer carbon / HONG SukLyun^{*1}, SON Shinwon¹ (¹Sejong University)

[P2-st] Statistical Physics

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-st.001

General protocol for predicting outbreaks of infectious diseases in social networks / PARK Jeong-Man^{*1}, KWON Sungchul¹ (¹Physics, The Catholic University of Korea)

P2-st.002

Epidemic spreading with mutation / SEO Haechan¹, YOOK Soon Hyung^{*1} (¹Department of Physics, Kyung Hee University)

P2-st.003*

Market Dynamics Through the Lens of Social Media Writers / OH Gab jin^{*1}, YOON Jinjoo¹ (¹Chosun University)

P2-st.004

Discerning Braess' Paradox in the Power Grids Through Strategic Shortcuts / CHOI Yunju¹, LEE Daekyung², KIM Heetae^{*1} (¹Department of Energy Technology, KENTECH, ²Institute of Sustainable Earth and Environmental Dynamics(SEED), Pukyong National University)

P2-st.005*

Can network analysis help locate renewable power sources for a stable power grid? / JO Geuna¹, NOH Gyeongmin¹, KIM Heetae^{*1} (¹Department of Energy Engineering, KENTECH)

P2-st.006*

Finding important words: Network analysis of a Korean dictionary / LEE Hae Seong^{*1}, KIM Beom Jun¹ (¹Department of Physics, Sungkyunkwan University)

P2-st.007*

Opinion dynamics model in collaborative learning / SEO Jibeom¹, KIM Beom Jun^{*1} (¹Sungkyunkwan University)

P2-st.008*

Mapping Academic Disciplines via Higher-Education Curriculum Data / GIM Gahyoun¹, SEO Jibeom², LEE Sang Hoon^{*1}, KIM Beom Jun² (¹Department of Physics, Gyeongsang National University, ²Department of Physics, Sungkyunkwan University)

P2-st.009*

한국의 불평등한 병원 분포 / JiYU Park^{*1}, EUN Lee¹ (¹Department of Scientific Computing, Pukyong National University)

P2-st.010*

An analysis of the relationship between postdoctoral experiences and faculty appointments. / LEE Eun^{*1}, PARK Chihyun¹ (¹Department of Scientific Computing, Pukyong National University)

P2-st.011

Hierarchy and inequality of faculty hiring in South Korea / JUNG Woojin², LEE Eun^{*1} (¹Scientific Computing, Pukyong National University, ²School of Electrical Engineering, KAIST)

P2-st.012

Unraveling Researcher Mobility Patterns: A Temporal and Network Analysis Across Global / Regional Connection / KIM Young Jin^{*1}, AHN Sejung¹, KWON Taehoon¹, LEE Jungwoo¹, PARK Jinseo¹, EUM Soohong², DUDEK Jonathan² (¹Center for Global R&D Data Analysis, KISTI, ²Centre for Science and Technology Studies, Leiden University)

P2-st.013*

Quantifying the impact of Vocational Education and Training on the Singapore labor market with text embedding and similarity-based networks / LEE Hyeongjae¹, HONG Inho^{*1,2}

(¹Graduate School of Data Science, Chonnam National University, ²Center for Humans and Machines, Max Planck Institute for Human Development)

P2-st.014

Unraveling the copying practices, “Urakai”, in Korean digital media through similarity-based network analysis / GOH Woori^{1,2}, LEE Hyeongjae¹, HONG Inho^{*1,3} (¹Graduate School of Data Science, Chonnam National University, ²Digital News Office, Kwangju Broadcasting Company, ³Center for Humans and Machines, Max Planck Institute for Human Development)

P2-st.015*

Unveiling Regional Variations in Urban Consumption Patterns: An Analytical Approach Using Credit Card Transaction Data / BONG Woori¹, KWON Okyu², OH Gab jin^{*1} (¹Chosun University, ²nims, NIMS)

P2-st.016

Analysis of a social encounter contact survey in South Korea: contact matrix and disease transmission / CHAE MINKYUNG¹, LEE Jonggul¹, KIM Jong-Hoon², HWANG Dong-Uk¹, NAH Kyeongah³, KIM Minsoo¹, SON Woo-Sik^{*1} (¹Research team for transmissin dynamics of infectious diseases, NIMS, ²Infection transmission modeling, International Vaccine Institute, ³Busan Center for Medical Mathematics, NIMS)

P2-st.017

Heterogeneous scaling of the mean first-passage time of random walks in fractal media / CHUN Hyun-Myung^{*1}, HWANG Sungmin², KAHNG Byungnam³, RIEGER Heiko^{4,5}, NOH Jae Dong⁶ (¹School of Physics, KIAS, ²N/A, Capital Fund Management, ³Center for Complex Systems Studies and KENTECH Institute for Grid Modernization, KENTECH, ⁴Center for Biophysics and Department of Theoretical Physics, Saarland University, ⁵N/A, Leibniz-Institute for New Materials INM, ⁶Department of Physics, University of Seoul)

P2-st.018

Numerical Approach for the Autocorrelation Function in Odd Diffusive System / RANA Shubhashis¹, PARK Jong Min^{*1} (¹JRG - Thermodynamics of microscopic nonequilibrium systems, Asia Pacific Center for Theoretical Physics)

P2-st.019

Investigation of probabilistic approaches in Antarctic ice shelf disintegration / KANG Hyuk^{*1}, KWON Okyu¹, PARK In-Woo^{2,3}, JIN Emilia Kyung² (¹NIMS, ²Unit of Ice Sheet and Sea Level Changes, KOPRI, ³School of Earth and Environmental Sciences, Seoul National University)

P2-st.020*

Breakable Polymer Networks: Breakage Dynamics and Tracer Diffusion / KIM YEONGJIN¹, METZLER Ralf^{2,3}, JEON Jae-Hyung^{*1,2} (¹Department of Physics, POSTECH, ², APCTP, ³Institute of Physics and Astronomy, University of Potsdam)

P2-st.021

Comparison of dielectric behavior of ferroelectric nematic liquid crystal with nematic liquid crystal in confined systems / ZULFIQAR Wafa¹, YU Jeong Seon², LEE Jae Hoon¹, 김종현^{*1,2} (¹Physics, Chungnam National University, ²Institute of Quantum Systems, Chungnam National University)

P2-st.022

A computational approach for multiple TMS-induced brain dynamics / LEE Haejeong¹, KANG Jiyoung^{*1} (¹Department of Scientific Computing, Pukyong National University)

P2-st.023

Accelerating Long-Range Coulomb Interaction Energy Calculations Using Machine Learning / PARK Pyeong Jun^{*1}, JANG Eunjin¹ (¹School of Liberal Arts and Sciences, Korea National University of Transportation)

P2-st.024

체세포 유전자와 생식세포 유전자 돌연변이 염기서열 생성형 AI 모델 연구 / SON Seung-Woo^{*1,2}, KIM Youngmin², LEE Mi Jin¹ (¹Department of Applied Physics, Hanyang University, ²Artificial Intelligence, Hanyang University)

P2-st.025*

Working principles of classical and quantum reservoir computers: physics-based analysis beyond conventional machine learning approaches / KIM Hyeongmo^{1,2}, HAN Kyungreem^{*1} (¹Brain Science Institute, KIST, ²Department of Physics & Astronomy, Seoul National University)

P2-st.026*

Characterization of quantum recurrent neural network models: dynamics and computational performance / PAIK Joonho^{1,2}, HAN Kyungreem^{*1} (¹Brain Science Institute, KIST, ²Department of Physics & Astronomy, Seoul National University)

P2-st.027

An information-theoretic framework for the optimization of reservoir computers / WOO Junhyuk¹, LEE Suyoun^{*2}, HAN Kyungreem^{*1} (¹Brain Science Institute, KIST, ²Post-Silicon Semiconductor Institute, KIST)

P2-st.028*

Field Disorder and Universality Classes in the Transverse-Field Ising Ferromagnet: A Two-Dimensional Investigation / KIM Heejeong¹, BAEK Seung Ki^{*2} (¹Department of Physics, Pukyong National University, ²Department of Scientific Computing, Pukyong National University)

P2-st.029

The study of the three-state Potts model on a simple-cubic lattice based on its density of states / LEE Jae Hwan¹, KIM Jin Min¹, KIM Seung-Yeon^{*2} (¹Department of Physics and OMEG Institute, Soongsil University, ²School of Liberal Arts and Sciences, Korea National University of Transportation)

P2-st.030

Study of the Ising Model with a Ratio of 20:9 between the Nearest-Neighbor and Next-Nearest-Neighbor Interactions / KIM Seung-Yeon^{*1} (¹School of Liberal Arts and Sciences, Korea National University of Transportation)

[P2-te] Physics Teaching

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-te.001*

가상실험을 활용한 탐구기반 양자물리학 교육 프로그램의 개발 / LEE Taegyong¹, KANG Nam-Hwa^{*1} (¹Physics Education Department, Korea National University of Education)

P2-te.002

대규모 인원의 평가를 위한 온라인 시험 플랫폼의 개발과 특성 소개 / PARK Seonhwa¹, KANG DongYel^{*2} (¹Department of Firearms & Optics, Daeduk University, ²School of Basic Sciences, Hanbat National University)

P2-te.003

과학 및 물리학 교과서의 탐구 활동에 포함된 과학 실천 요소 / KANG Eunju^{*1}, PARK Jong Ho² (¹Chinju National University of Education, ²Department of Science Education, Chinju National University of Education)

[P2-pl.1] Plasma: Nuclear Fusion & Accelerator and Beam

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-pl.101

텅스텐 디버터 업그레이드 이후 KSTAR 플라즈마의 유효전하량 분포 / JANG Juhyeok^{*1}, SEO Dongcheol¹, LEE Jong Ha¹, KIM Hajin¹, JUHN June Woo¹, LEE Kwan Chul¹, LEE Kyu-Dong¹, NAM Yong Un¹ (¹Plasma Diagnostic Research Team, KFE)

P2-pl.102*

Development of a mm-wave interferometer for density measurements in the expander region of the KAIMIR device / BAEK Gwangwoon¹, OH Donggeun¹, CHOE Mingi¹, LEE Kyu-Dong², SEO Seongheon², SUNG Choongki^{*1} (¹Nuclear and Quantum Engineering, KAIST, ²Plasma Diagnostics Research Team, KFE)

P2-pl.103*

Accelerating Magnetohydrodynamics Equilibrium Solutions Using Neural Networks / NA Yong Su^{*1}, SEO Jaemin², HYEONGJUN Noh¹ (¹Nuclear Engineering, Seoul National University, ²Department of Physics, Chung-Ang University)

P2-pl.104

불순물 모니터링을 위한 VSS 진단장치 성능개선 / SEO Dongcheol^{*1}, JANG Juhyeok¹ (¹Korea Institute of Fusion Energy)

P2-pl.105

Analysis of scattered light from divertor Thomson laser beam dump in KSTAR / LEE Jong Ha^{*1,2}, KIM Hajin¹, PARK Geunhyeong^{1,2} (¹KSTAR research center, Korea Institute of Fusion Energy, ²KFE school, UST)

P2-pl.106

Recent progress of KSTAR Thomson scattering diagnostic in 2023 / LEE Jong Ha^{*1,2}, KIM Hajin¹, PARK GeunHyeong^{1,2}, KIM Young-Gi³, KIM Jung-Hwa⁴, LEE Jongmin⁴ (¹KSTAR research center, Korea Institute of Fusion Energy, ²KFE school, University of Science and Technology, ³Institute of plasma technology, Korea Institute of Fusion Energy, ⁴Department of Nuclear Engineering, Seoul National University)

P2-pl.107

Singularity at the Transition Period of Neoclassical Tearing Mode in KSTAR / YEOM Jun-Ho^{*1} (¹KSTAR Research Center, Korea Institute of Fusion Energy)

P2-pl.108*

Ion Cyclotron Resonance Heating Modeling for Tokamak Plasma with 4-D Fokker-Planck

Code / JEONG Yunho^{*1}, LEE Hyeonjun¹, LEE Jungpyo¹ (¹Department of Nuclear Engineering, Hanyang University)

P2-pl.109

SOLPS-ITER 를 이용한 K-DEMO 디버터 플라즈마 분리 현상 분석 / CHOI Min-Hyeok^{*1}, PARK Jae-

Sun², KWON Sungjin¹ (¹Divertor Research Team, KFE, ²Power Exhaust and Particle Control Group, Oak Ridge National Laboratory)

P2-pl.110

Operation and Development of PAL-XFEL Operation Monitoring System / NAM Inhyuk^{*1}, HEO

Hasoo¹, KIM Gyujin¹, JANG Jaemyeong¹, KIM Dooha¹, ON Sungmin¹, KWON Yeongho¹, PARK Jonghyeon¹ (¹PAL-XFEL, Pohang Accelerator Laboratory)

P2-pl.111

Nanosecond laser pulse train generation method with timing and power density controls /

NAM Inhyuk^{*1}, MIN Chang-Ki¹, HA Tae Kyun¹, PARK Sung Ju¹, GO Namseok¹, BYEON Woojun¹ (¹PAL-XFEL, Pohang Accelerator Laboratory)

P2-pl.112

Electron beam modulation using Flat dechirper / YANG HAERYONG^{*1}, CHO Myung Hoon¹,

MOON Kook-Jin¹, SUNG Chang-Kyu¹, SHIM Chi Hyun¹, HEO Hoon¹, NAM Inhyuk¹ (¹PAL-XFEL, Department of Accelerator, Pohang Accelerator Laboratory)

P2-pl.113

Study for Longitudinal Phase Space Measurement of Electron Beam using Wakefield at PAL-XFEL

/ SUNG Chang-Kyu¹, NAM Inhyuk¹, KIM Seongyeol¹, CHO Myung Hoon^{*1} (¹Pohang Accelerator Laboratory)

P2-pl.114*

Extraction of Highly Charged Argon Ions using UNIST-EBIT / HAN Je Hwan¹, PARK Sung Nam¹,

COSGUN Emre¹, SHIN Bok Kyun², YOO Kyoung Hun³, CHUNG Moses^{*4} (¹Department of Physics, UNIST, ²Pohang Accelerator Laboratory, Pohang Accelerator Laboratory, ³Institute for Rare Isotope Science, IBS, ⁴Department of Physics, Pohang University of Science and Technology (POSTECH))

P2-pl.115

A magnetic field measurement system for a nonlinear kicker / CHOI YOONGEOL^{*1}, KIM Dong Eon¹, JUNG Young Gyu¹, AN Sukho¹, KIM Min-Jae¹, KIM Beom Jun¹, JEONG Seong Hun¹ (¹Pohang Accelerator Laboratory)

P2-pl.116

Fabrication and tuning of S-band RF gun / KIM KwangHoon^{*1} (¹Pohang Accelerator Laboratory)

P2-pl.117

Design of Magnet Power Supplies (MPS) for Booster Ring in the 4GSR accelerator. / KIM Min-Jae^{*1}, AN Sukho¹, JEONG Seong Hun¹, CHOI YOONGEOL¹, JUNG Young Gyu¹, KIM Dong Eon¹, LEE Wol Woo¹, KIM Beom Jun¹ (¹Magnet Power Supply, Pohang Accelerator Laboratory)

P2-pl.118

Electron Bunch Spacing with a Laser Heater at PAL-XFEL / YANG HAERYONG^{*1}, NAM Inhyuk¹, SHIM Chi Hyun¹, CHO Myung Hoon¹ (¹PAL-XFEL, Department of Accelerator, Pohang Accelerator Laboratory)

P2-pl.119

Korea 4GSR 전자석 Status / KIM Dong Eon^{*1}, JUNG Young Gyu¹, HAHN Garam¹ (¹Pohang Accelerator Laboratory)

P2-pl.120

Operation Status of 80 MW Klystron and 200 MW Modulator for PAL-XFEL# / PARK Soung Soo^{*1} (¹Accelerator Laboratory, POSTECH)

P2-pl.121

Recent results of beam dynamics simulations at the RAON SCL2 / JIN Hyunchang^{*1}, JUNG Yoochul¹ (¹IRIS, IBS)

P2-pl.122*

차세대 방사광 가속기를 위한 최적화 알고리즘을 활용한 고성능 전자석의 Pole 형상 최적화 / KIM Donghyeok¹, AHN Geunpil¹, HWANG Ji-Gwang^{*1} (¹Gangneung Wonju National University)

P2-pl.123

Electron bunch shaping by laser heater for attosecond XFEL / MOON Kook-Jin^{*1}, CHO Myung Hoon¹, SHIM Chi Hyun¹, YANG HAERYONG¹, KWON Seong-Hoon¹, KIM Seongyeol¹, SUNG Chang-Kyu¹, NAM Inhyuk¹ (¹Accelerator control team, Pohang Accelerator Laboratory)

P2-pl.124*

Non-linear optimization for increasing dynamic aperture and lifetime of Korea-4GSR lattice

/ CHUNG Moses^{*1}, KIM JunHa^{1,3}, KIM Jaehyun², LEE Jaeyu², JANG Gyeongsu² (¹Department of Physics, UNIST, ²PLS-II Accelerator Department, Pohang Accelerator Laboratory, ³4GSR project Headquarters, Pohang Accelerator Laboratory)

[P2-pl.2] Plasma: Laser & Basic Plasma, Application, Processing and Diagnostics

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-pl.201

Enhancing Compact Light Sources through Laser-Accelerated Electron Beam Dynamics in a

Ring-Type Dipole / PARK Seong Hee^{*1}, KIM Keon Ho¹, CHO Hee Jin¹, LEE Hyeon Woo¹, SHIN Sang Yun¹ (¹Department of Accelerator Science, Korea University)

P2-pl.202

Diagnostics of laser-ablated plasma by the femtosecond grid image refractometry / YU

Hyungyu¹, LEE Hyeonwoo¹, KIM Suho¹, LEE Chunghwa¹, SUK Hyyong^{*1} (¹Dept. of Physics and Photon Science, GIST)

P2-pl.203*

Application of differential interferometry for plasma density diagnostics in a capillary gas cell

/ SUK Hyyong^{*1}, ROH Kyungmin¹, KIM Hyunil Benjamin¹, JEON Seong-jin¹, LEE Hyeonwoo¹, LEE Youngmin¹ (¹Dept. of Physics and Photon Science, GIST)

P2-pl.204*

Development of Laser-processed Aluminum Targets for Overdense Plasma / SUK Hyyong^{*1},

KIM Suho¹, LEE Hyeonwoo¹, ROH Kyungmin¹, LEE Chunghwa¹ (¹Dept. of Physics and Photon Science, GIST)

P2-pl.205*

Understanding the relation between transition radiation and ultrafast plasma surface

dynamics in intense laser-solid interaction / LEE Kyungbae^{1,2}, KIM Chul Min^{1,2,3}, CHO Byoung Ick^{*1,2} (¹GIST, ²Center of Relativistic Laser Science, Institute for Basic Science, ³Division of Ultra-Intense Laser and Applications, APRI)

P2-pl.206*

Measurement of coherent transition radiation from thin-foil targets irradiated by intense

laser pulses / NAM Jeongwoo¹, LEE Changhoo^{1,2}, LEE Kyungbae^{1,2}, LEE Hyeonjin^{1,2}, LEE Gysang^{1,2}, SOHN Janghyeob¹, CHO Byoung Ick^{*1,2} (¹GIST, ²Center for Relativistic Laser Science, Institute for Basic Science)

P2-pl.207*

Charge-neutral electron-positron beam production from bremsstrahlung gamma rays / NOH Youhwan^{1,2}, SONG Jaehyun^{1,2}, MIRZAIIE Mohammad^{2,3}, HOJBOTA Calin Ioan², KIM Hyeong-il^{1,2}, LEE Seongmin^{1,2}, WON Junho^{1,2}, SONG Hoon^{1,2}, SONG Chiwan^{1,2}, RYU Chang-Mo², NAM Chang Hee^{1,2}, BANG Woosuk^{*1,2} (¹Department of Physics and Photon Science, GIST, ²Center for Relativistic Laser Science, IBS, ³Advanced Photonics Research Institute, GIST)

P2-pl.208*

Electron-positron generation by irradiating various solid materials with laser-accelerated electrons / KIM Hyeong-il¹, WON Junho¹, SONG Jaehyun¹, SONG Chiwan¹, NOH You Hwan¹, LEE Seongmin¹, BAE Leejin², RYU Chang-Mo³, NAM Chang Hee¹, BANG Woosuk^{*1} (¹Department of Physics and Photon Science, GIST, ²Division of Ultra-Intense Laser and Applications, APRI, ³Department of Physics, Pohang University of Science and Technology (POSTECH))

P2-pl.209*

Development of a smoothed particle hydrodynamics code for simulating laser-driven inertial confinement of plasmas / JUNG Min Ki¹, NA Yong Su¹, HAHN Sang June^{*2} (¹Department of Nuclear Engineering, Seoul National University, ²Department of Physics, Chung-Ang University)

P2-pl.210*

Simulations of tin plasmas driven by various laser conditions for enhanced extreme ultraviolet light sources / SOHN Jang Hyeob¹, JEONG Inki², CHO Byoung Ick^{1,3}, HAHN Sang June^{*2} (¹Department of Physics and Photon Science, GIST, ²Department of Physics, Chung-Ang University, ³Center for Relativistic Laser Science, Institute for Basic Science)

P2-pl.211

Adding Collision Calculation to PIC Code for Developing Plasma-based Laser Compression Technology / KIM Seungyun¹, HUR Min Sup^{*1} (¹Physics, UNIST)

P2-pl.212*

Analysis of low temperature plasma flow in the presence of the magnetic X-point using the Particle-In-Cell simulation / AHN Bin¹, JEONG Hoiyun¹, PARK Jihye¹, GHIM Young Chul^{*1} (¹KAIST)

P2-pl.213

헬륨 대기압 플라즈마 제트내 활성입자의 분광학적 특성 / JUNG Jaehoon¹, LEE Wonwook^{*1}, OH Cha-Hwan¹ (¹Department of Physics, Hanyang University)

P2-pl.214*

Measurement of Pease-Braginskii current and radiative properties of high-energy-density (HED) copper plasma from X-pinch experiment / CHUNG Kyoung-Jae^{*1}, CHOI YeongHwan¹ (¹Seoul National University)

P2-pl.215*

Electron-ion energy relaxation times up to 100 eV in warm dense aluminum and gold / BANG Woosuk^{*1}, LEE Seongmin¹, KIM Chul Min², SONG Chiwan¹, NOH You Hwan¹, KIM Hyeongil¹ (¹Department of Physics and Photon Science, GIST, ²Advanced Photonics Research Institute, APRI)

P2-pl.216

Accurate Equations of State Near Critical Points via Optimized Soft-Sphere Parameters / JEONG Inki¹, HAHN Sang June¹, YOON Young-Gui^{*1} (¹Chung-ang University)

P2-pl.217*

Measurement of a spatial density distribution of oxygen atom in capacitively-coupled plasma using the optical emission spectroscopy
/ SUK Hyyong^{*1}, KIM Hyunil Benjamin¹, YU Hyungyu¹, JEON Seongjin¹, KIM Jihyun² (¹Dept. of Physics and Photon Science, GIST, ²Advanced technology center, Semiconductor research center, Wonik IPS)

P2-pl.218

Conceptual design of 1-D Thomson scattering system for enhancing the Ar collisional-radiative model / KIM Young-Gi^{*1}, LEE Hyunyeong¹, PARK Seungil¹, SONG Mi Young¹ (¹Division of Plasma-Bio Convergence, KFE)

P2-pl.219

Comparison of electron temperature and density with and without a Faraday shield in an argon cylindrical Inductively Coupled Plasma (ICP) / GHIM Young Chul^{*1}, KANG Jin Wook¹ (¹KAIST)

P2-pl.220

Evaluation of Ripple Currents Loss in AC Loss of KSTAR PF Coils / KIM Mu Yong¹, LEE Hyun Jung^{*1}, KWON Giili¹, NAM Seokho¹, KIM Hyun Wook¹, CHU Yong¹, KIM Kwang Pyon¹, PARK Kaprai¹ (¹KFE)

P2-pl.221*

Development of 2.5D Cylindrical Coordinate PIC Simulation for Inductively Coupled Plasma /
KIM Jungmin*¹ (¹Nuclear engineering, Hanyang University)

P2-pl.222

Design on measurement system of SEY change along the low energy electron dose / LEE Hyunyeong*¹, KIM Young-Gi¹, SONG Mi Young¹ (¹Division of Plasma Convergence Research, KFE)

[P2-at] Atomic & Molecular Physics

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-at.001*

Optical transfer cavity for laser frequency anchoring / PARK Seonghyeon¹, KIM Kiwoong*¹
(¹Dept. of Physics, Chungbuk National University)

P2-at.002

High resolution spectroscopy of radioactive formaldehyde / KIM Yonghee*¹, CHA Yongho¹, LEE Lim¹, KIM Taek-Soo¹, KO Kwang-Hoon¹ (¹Quantum Optics Research Division, Korea Atomic Energy Research Institute)

P2-at.003

Performance evaluation of vapor cell oven for SERF magnetometer / LEE Minhwan^{1,2}, PARK Sanghyun^{1,2}, RYU Younguk^{1,2}, BAEK Jaeuk^{1,3}, LEE Sanglok^{1,3}, MOON Geol*^{1,2} (¹Department of Physics, Chonnam National University, ²Center for Quantum Technologies, Chonnam National University, ³Time and Frequency Group, KRISS)

P2-at.004*

Characterization of long-term stabilization of PM fiber with thermal dynamic control / PARK Sanghyun^{1,2}, BAEK Jaeuk¹, LEE Minhwan^{1,2}, MOON Geol*^{1,2} (¹Department of Physics, Chonnam National University, ²Center for Quantum Technologies, Chonnam National University)

P2-at.005*

Parametric resonance of ¹³³Cs cold atoms in a magneto-optical trap / MOON Geol*¹, KHAN Sibghat Ullah¹, BAEK Jaeuk^{1,2}, LEE Minhwan¹, PARK Sanghyun¹ (¹Department of Physics, Chonnam National University, ²Time and Frequency Group, KRISS)

P2-at.006

Theoretical and experimental study of modulation transfer spectroscopy for non-cycling transitions of $^{87,85}\text{Rb}$ D1 Lines

/ KHAN Shabraz¹, HASSAN Aisar-ul¹, NOH Heung-ryoul², KIM Jin-Tae^{*1} (¹Dept. of Photonic Eng., Chosun University, ²Dept. of Physics, Chonnam National University)

P2-at.007*

Optical Frequency Stabilization via Optical Cavity and Stable RF Reference / LEE Dongyeon², KIM Junki^{*1,2} (¹SAINT, Sungkyunkwan University, ²Department of NanoEngineering, Sungkyunkwan University)

P2-at.008*

Towards the creation of bosonic Na^{41}K dipolar molecules in their absolute ground state / LEE Sungjun¹, CHANG JaeRyeong¹, KIM Yoonsoo¹, JANG Seokmin¹, KIM Sooshin¹, LIM Younghoon¹, PARK Jee Woo^{*1} (¹Department of Physics, POSTECH)

P2-at.009*

Microscopic observation of long-range tunneling in optical lattice with locally manipulated potentials / CHOI Jae Yoon^{*1}, LEE Byungjin¹, KWON Kiryang¹, HUR Junhyeok¹ (¹Physics Department, KAIST)

P2-at.010

Critical Dynamics of Trapped Bose Gases / RABGA Tenzin¹, LEE YangHeon¹, SHIN Yong-il^{*1,2} (¹Department of Physics and Astronomy, Seoul National University, ²Institute of Applied Physics, Seoul National University)

P2-at.011

Floquet engineering of one-dimensional stroboscopic topological bands with two-way sd resonant coupling / PARK Junyoung¹, BAE Dalmin¹, KIM Myeonghyeon¹, KWAK Hanuel², KWON Junhwan¹, SHIN Yong-il^{*1} (¹Department of Physics and Astronomy, Seoul National University, ²Department of Physics, Columbia University)

P2-at.012

Yb-atom tweezer array at KRISS / OH Seungtaek^{1,2}, SONG Yunheung^{*1}, JUNG Haejun^{1,3}, HAN Jeong Ho¹, MUN Jongchul^{*1} (¹Ultracold Atom Quantum Research Team, KRISS, ²Graduate School of Quantum Science And Technology, KAIST, ³Department of Physics, KAIST)

P2-at.013*

Coherent control of trapped 171Yb^+ for quantum entanglement / CHOI Taeyoung^{*1}, KIM Hyerin¹, YOO Jieun¹, KIM Hyunsoo¹, LEE HYE IN¹ (¹Department of Physics, Ewha Womans University)

P2-at.014*

Experimental setup to coherently drive Raman transition of 171Yb^+ qubit by locking beatnote / YOO Jieun¹, KIM Hyerin¹, LEE HYE IN¹, KIM Hyunsoo¹, CHOI Taeyoung^{*1} (¹Department of Physics, Ewha Womans University)

P2-at.015*

Quantum walk in the two-mode phase space and the Bloch sphere with a trapped ion / CHOI WonHyeong^{1,2}, KANG Jiyong^{1,2}, JEON Honggi^{1,2}, KIM Jaeun^{1,2}, KIM Kyunghye^{1,2}, YOU Jaehun^{1,2}, KIM Taehyun^{*1,2,3,4,5} (¹Computer Science and Engineering, Seoul National University, ²Automation and System Research Institute, Seoul National University, ³Inter-university Semiconductor Research Center, Seoul National University, ⁴Institute of Computer Technology, Seoul National University, ⁵Institute of Applied Physics, Seoul National University)

P2-at.016

Simultaneous Trapping of Two Optical Pulses in an Atomic Ensemble as Stationary Light Pulses / KIM U-Shin^{*1}, KIM Yoon-Ho¹ (¹POSTECH)

P2-at.017

Hardware efficient decomposition of the Laplace operator and its application to the Helmholtz and the Poisson equation on quantum computer / BAE Jaehyun^{*1}, YOO Gwangsu¹, NAKAMURA Satoshi², OHNISH Shota², KIM Dae Sin¹ (¹Innovation Center, Samsung Electronics, ²Process TCAD Lab, Samsung Device Solutions R&D Japan)

P2-at.018*

Pushing single atoms into an optical cavity / LEE Dowon^{*1}, KIM Donggeon¹, HA Taegyul¹, KIM Keumhyun¹, LEE Moonjoo¹ (¹Department of Electrical Engineering, POSTECH)

P2-at.019*

Towards a quantum network node with trapped ions and two optical cavities / WON Jongcheol^{*1}, MOON Youngil¹, HAN Sangsoo¹, KIM Donggeon¹, PARK Byung-tak¹, HA Taegyul¹, LEE Dowon¹, LEE Moonjoo¹ (¹Electrical & Electronic Engineering, POSTECH)

P2-at.020*

Theoretical study of exceptional line with an atom-cavity system / HA Taegyul^{*1}, KIM Jinuk²,

PARK Byungtak¹, JEONG Eunchul¹, LEE Down¹, KIM Donggeon¹, LEE Moonjoo¹ (¹Department of Electrical Engineering, POSTECH, ²Quantum Technology Institute, KRISS)

P2-at.021*

Portable and Miniaturized Quantum Magnetometer with Flux Concentrator based on Diamond NV Center / LEE Donghun^{*1}, PARK Jaebum¹, PARK Chanhu¹, CHOI Woo kyoung¹ (¹Physics, Korea University)

P2-at.022

Ac field sensing with a doubly dressed spin state in an ensemble of diamond NV centers. / GHIMIRE Santosh¹, SHIM Jeong Hyun^{*1} (¹Quantum Magnetic Imaging Team, KRISS)

P2-at.023

광자의 시간 조절을 위한 다경로 원자-빛 상호작용과 느린빛 연구 / JEONG Taek^{*1}, JO Yonggi¹, KIM Jihwan¹, LEE Su-Yong¹, KIM Zaeill¹, IHN Yong Sup¹, KIM Duk Y.¹ (¹Advanced Defense Science & Technology Research Institute, Agency for Defense Development)

[P2-se] Semiconductor Physics: Energy Materials and Semiconductor Applications

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-se.001

Phototransistor with improved optoelectronic characteristics and low-power operation via IGZO/IZO heterostructure / KIM Yu Bin¹, KANG Seong Jun^{*1,2} (¹ 정보전자신소재공학과, Kyung Hee University, ²Integrated Education Institute for Frontier Science & Technology (BK21 Four), Kyung Hee University)

P2-se.002*

Stabilizing Polyoxometalates for Enhanced OER Performance Using a Porous Manganese Oxide Support / ZUBAIR Muhammad¹, KANG Dae Joon^{*1} (¹Sungkyunkwan University)

P2-se.003

Patterning of metal oxide thin film by pulsed laser annealing / MAENG Jin Young², SONG Jong Hyun^{*1,2} (¹Chungnam National University, ²Department of Physics, Chungnam National University)

P2-se.004*

High efficient p-i-n perovskite solar cell via defect passivation

/ ENKHBAYAR Enkhjargal¹, OTGONTAMIR Namuundari¹, KIM SeongYeon², LEE Jinho¹, KIM JunHo*¹ (¹Incheon National University, ²Division of Energy Technology, Daegu Gyeongbuk Institute of Science and Technology)

P2-se.005

Fabrication and characterization of Cu(In_{1-x}Al_x)(S,Se)₂ solar cells / KIM JunHo*¹, HONG Tae Ei¹, JUNG Hae Hoon¹ (¹Incheon National University)

P2-se.006

Fabrication of Cd-free Zn(O, S) buffer layer by chemical bath deposition for CIGSSe thin film solar cells / RAHMAN Md. Matiur¹, OTGONTAMIR Namuundari¹, HONG Tae Ei¹, KIM JunHo*¹ (¹Incheon National University)

P2-se.007

Preparation of (Zn,Sn)O buffer layer by spray pyrolysis technique for CIGSSe thin film solar cells / MANOHARAN Avinash¹, RAHMAN Md Matiur¹, HONG Tae Ei¹, OTGONTAMIR Namuundari¹, KIM JunHo*¹ (¹Incheon National University)

P2-se.008*

Valley and spin filter using multi magnetic barriers on a TMDC nanoribbon / YANG Seokjin^{1,2}, DAEHAN Park¹, KIM Namme*¹, KIM HEESANG^{1,2} (¹Physics, Soongsil University, ²OMEG Institute, Soongsil University)

P2-se.009*

All-inorganic quantum-dot light-emitting diode utilizing changes in oxygen vacancy concentration based on annealing temperature of HfO_x / YUN Jung Min¹, KANG Seong Jun*^{1,2} (¹정보전자신소재공학과, Kyung Hee University, ²Integrated Education Institute for Frontier Science & Technology (BK21 Four), Kyung Hee University)

P2-se.010*

Optimal Design of Semiconducting Distributed Bragg Reflectors for Low Threshold Perovskite Laser Devices / JUN Yejin*¹, ROH Kwangdong¹ (¹Physics, Ewha Womans University)

P2-se.011*

Controlling quantum confined Stark effect for highly efficient light-emitting diodes / JEONG Minwoo¹, NAHM Ho-Hyun², KIM Yong-Hyun*^{1,2} (¹Graduate School of Semiconductor Technology, KAIST, ²Department of Physics, KAIST)

P2-se.012*

QTF-AFM guided 3D printing of fluorescent dye and in situ Raman spectroscopy / BAE Yeonju², AN Sangmin^{*1,2} (¹Department of Physics, Institute of Photonics and Information Technology, Jeonbuk National University, ²Department of Energy-AI Convergence Engineering, Jeonbuk National University)

P2-se.013

그래핀 전극과 그래핀 양자점 중간층을 이용한 LaVO₃ 광검출기 특성 연구 / SHIN DongHee^{*1}, KIM DoHoon² (¹Department of Smart Sensors Engineering, Andong National University, ²Department of Physics, Andong National University)

P2-se.014*

육각형 질화붕소 사용으로 암전류를 감소시켜 성능이 향상된 WS₂/LaVO₃ 이종 접합 광검출소자 / SHIN DongHee^{*1}, LEE Taegun² (¹Department of Smart Sensors Engineering, Andong National University, ²Department of Physics, Andong National University)

P2-se.015

LaVO₃ 두께 변화에 따른 MoS₂/LaVO₃ 이종 접합 광검출소자 / SHIN DongHee^{*1}, LEE JunHyeok² (¹Department of Smart Sensors Engineering, Andong National University, ²Department of Physics, Andong National University)

P2-se.016

Graphene/WS₂/LaVO₃ heterojunction structure for self-powered photodetector / SHIN DongHee^{*1} (¹Department of Smart Sensors Engineering, Andong National University)

P2-se.017

Large-area copper-based halide film for X-ray imaging / HAN Inah¹, CHO SangEun¹, NOH Samkyu¹, KIM Hyungsang¹, IM Hyun Sik^{*1} (¹Dongguk University)

P2-se.018*

Charge Transfer Analysis at the Interface of Perovskite/Organic Semiconductor Bulk Hetero Junction Structure / KIM Kyungsik¹, KIM Giseong², KIM Jihan², LEE Jinho^{*1,2} (¹Department of Intelligent Semiconductor Engineering, Incheon National University, ²Department of Physics, Incheon National University)

P2-se.019

CsPbBr₃ 나노결정의 특성 개선 및 전도성 고분자 혼합물의 분석 / KWAK Seoyoung¹, SHIM Jahyun¹, KIM Jungyun¹, CHO SangEun¹, NOH Samkyu¹, KIM Hyungsang¹, IM Hyun Sik^{*1} (¹Dongguk University)

P2-se.020*

Exploration of involving the use of Cu-substituted NiWO₄ thin-film as a p-type oxide material for device applications / KIM Inseo^{*1}, LEE Kimoon¹ (¹Department of Physics, Kunsan National University)

P2-se.021

Positive Aging Dynamics in InP Quantum-Dot Light-Emitting Diodes / JOE Sung-yoon^{*1}, LEE JongMin¹, YOON Beomhee², LEE Hyunho² (¹School of Semiconductor. Display Technology, Hallym University, ²Nano Device Application Center, Kwangwoon University)

P2-se.022

Investigating the capacitance of the junctions using photoreflectance spectroscopy / ZEINALVANDFARZIN Behnam¹, KIM Jong Su^{*1}, LEE Sang Jun² (¹Yeungnam University, ²Division of Interdisciplinary Materials Measurement Institute, Korea Research Institute of Standards and Science)

P2-se.023

Interface effect analysis of MQW LED using I-V measurement / KIM Jong Su^{*1}, GO Jiseong¹, PARK Gyound Du¹, LEE Jonghun¹, LEE Sang Jun², KIM Dongwan², NGUYEN Phuc Dinh² (¹Yeungnam University, ²Semiconductor and Display Metrology Group, KRISS)

P2-se.024

Substrate effect of GaN and GaAs wafers on remote epitaxy through 2D materials: Ab initio study / SUNG Dongchul¹, KIM Hyunseok², KIM Jeehwan², HONG SukLyun^{*1} (¹Sejong University, ²Department of Mechanical Engineering, MIT)

[P2-as] Astrophysics

Poster Exposure Period : April 25, 09:00 ~ April 25, 18:00

Presentation (mandatory): April 25, 11:30-13:00

Room: Exhibition Hall

P2-as.001

Limits on the mass of compact objects in Horava-Lifshitz gravity / SON Edwin J.^{*1} (¹NIMS)

P2-as.002*

Data augmentation and machine learning models for atomic structure characterization for

coating material candidates of gravitational wave detectors / JU Jeonghyeon¹, KIM Minhyo¹,
LEE Kyung-ha^{*1} (¹Physics, Sungkyunkwan University)

P2-as.003*

The impact of cosmic ray collisions on Ultra-Fast Flash Observatory / KIM Minseo¹, WON
Eunil¹, HONG Gihan¹ (¹Department of Physics, Korea University)

P2-as.004*

**Study of Optical Properties in the Antarctic Ice Using Simulated Images of the IceCube
Upgrade Camera System** / RODAN Steven Thomas^{*1}, PAK Minje¹, LEE Jiwoong¹, ROTT Carsten¹
(¹Physics, Sungkyunkwan University)

P2-as.005

**Probing Optical Properties of the IceCube Neutrino Detector Medium with a Novel Camera
System** / RODAN Steven Thomas^{*1}, SEO Minyeong¹, LEE Jiwoong¹, KIM Yoonyoung¹, CHOI
Seowon¹, PAK Minje¹, OH Yubin¹, ROTT Carsten^{1,2} (¹Physics, Sungkyunkwan University, ²Physics,
University of Utah)

P2-as.006

Review of Earth's Spin Rotation Prediction Models / NA Sung-Ho^{*1} (¹Natural Science Research
Institute, Chungnam National University)

P2-as.007

Adaptive mesh refinement technique for numerical (magneto-)hydrodynamics / KIM Jinho^{*1}
(¹Center for Theoretical Astronomy, KASI)