

Program of PSA-24

Time/Place	Nov. 18 (Mon)		Nov. 19 (Tue)		Nov. 20 (Wed)		Nov. 21 (Thu)		Nov. 22 (Fri)	
	PSA-24 (Eng)		PSA-24 (Eng)	KoSSA (Kor)	PSA-24 (Eng)	KoSSA (Kor)	PSA-24 (Eng)	KoSSA (Eng)	PSA-24 (Eng)	
	Capri Room		Capri Room	Grand Ballroom I	Capri Room	Grand Ballroom I	Capri Room	Grand Ballroom I	Capri Room	Capri Room
08:00-09:00	Registration		Registration		Registration		Registration		Registration	
09:00-09:20	Opening Ceremony				Plenary Lecture 3. Sung-Chan Jo		Hyun-Wook Lee Hyejun Kim		Jaekyung Hyun Jun-ichiro SAMESHIMA Maciej Mazur	
09:20-10:05	Plenary Lecture 1. Donald Baer		Satoka AOYAGI In-Hui Hwang Satoshi TOYODA		Yeonjin Yi Kyung-Tae Ko Jeongjin Kim Siwoo Noh		Yunseok Kim Ikbum Park			
10:05-10:50	Plenary Lecture 2. Ian Gilmore				Break		Break		Break	
10:50-11:10	Break		Break		Break		Break		Break	
11:10-12:10 (S1)	David Cant Wonja Min		Chales Clifford Si-Young Choi Daniel Khaykelson		Richard Morris Hwi Je Woo Chanwon Jung Dongchul Ihm Pyuck-Pa Choi		Un Jeong Kim Sooji Nam Seokjoon Yun Yoon Mi Choi		Tanguy Terlier HeeJin Lim	
12:10-13:30	Luncheon Seminar (Thermo Fisher Scientific)		Luncheon Seminar (Ametek Korea)		Luncheon Seminar (KRATOS)		Masahiro Terashima Hyun-Woo Gong Hongjin Park Alireza Razazzadeh		Dong Hyeon Kim Jungcheon Jahng Young-Jun Yu	
13:30-14:30 (S1)	Hidehiko NONAKA Seung Mi Lee		John Sader Tsutsumi Kenichi Young Min Kim Benedikt Paul Klein SeHo Kim		Young Heon Kim Ju-Young Kim Jungjae Park		Photo & Luncheon Seminar (Park Systems)		Closing Ceremony	
14:30-14:45	Break		Break		Break		Excursion			
14:45-16:15 (S2)	Aleksander Jablonski Hiroschi Shinotsuka Yongho Seo		Wooyoung Jung Yoshiyuki Yamashita Yongsup Park Adam Bushell		Kyeryung Kim Myoung Choul Choi Yun Jung Jang Kyungsu Park					
16:15-16:30	Break		Break		Break					
16:30-17:30 (S2)	Samuel Bertolini Manhee Lee				Poster Session (even numbers)					
17:30-17:45	Break				Break					
17:45-19:35 (S3)	Alex Henderson Sven Tougaard Stanislav Cichon Sang-Joon Cho				Break					
			Poster Session (odd numbers)		Banquet					

Blue : Invited Speaker (30 min)
Black: Oral Speaker (20 min)

	PSA-24
	KoSSA
	PSA-24+KoSSA

- S1. Standardization and pre-standardization
- S2. Theory and simulation
- S3. Data analysis and treatment
- S4. Novel techniques and instrumentations
- S5. Applications I (device and materials)
- S6. Applications II (energy)
- S7. Applications III (bio and organic)
- S8. Electron Spectroscopy (Korean only)
- S9. Electron Microscopy (Korean only)
- S10. Ion Beam Technology (Korean only)
- S11. Photon Beam Technology (Korean only)
- S12. Nano Scientific Symposium Korea (NSSK)

Proceedings

Nov. 18 (Mon), 2024

Registration

08:00-19:00

Opening Remark

09:00-09:20

Kyung Joong Kim (Chair, 9th International Symposium on Practical Surface Analysis (PSA-24))

Plenary Talk 1

O-01 | 09:20-10:05

Donald Baer (Pacific Northwest National Laboratory)**

A Perspective on XPS Challenges, Needs and Opportunities

Plenary Talk 2

O-02 | 10:05-10:50

Ian Gilmore (National Physical Laboratory)**

Evolution and Revolution in Secondary Ion Mass Spectrometry

S1. Standardization and Pre-standardization

(11:10-14:30)

O-03 | 11:10-11:40

David Cant* (National Physical Laboratory)

A Roadmap to HAXPES Standardisation

O-04 | 11:40-12:10

Wonja Min* (HB Solution)

Standardization of Medium Energy Ion Scattering Spectrometry

★Luncheon Seminar

12:10-13:30

O-05 | 13:30-14:00

Hidehiko NONAKA* (Tsukuba University)

Standardization Activities in ISO TC 201 (Surface Chemical Analysis)

O-06 | 14:00-14:30

Seung Mi Lee* (Korea Research Institute of Standards and Science)

Quantitative Analysis of Binary Alloy Films by Surface Analysis

Break

14:30-14:45

S2. Theory and Simulation

(14:45-17:30)

O-07 | 14:45-15:15

Aleksander Jablonski* (Polish Academy of Sciences)

Parameters Needed for Simulations of Electron Transport in Condensed Matter

O-08 | 15:15-15:45

Hiroshi Shinotsuka* (National Institute for Materials Science (NIMS))

Innovative Sample Structure Prediction Using Bayesian Estimation and XPS Simulator

O-09 | 15:45-16:15

Samuel Bertolini Da Silva Oliveira* (Université Catholique de Louvain)

Molecular Dynamics Simulations of Gas Cluster Induced Protein Desorption, Transfer and Soft/reactive Landing

Break

16:15-16:30

O-10 | 16:30-17:00

Yongho Seo* (Sejong University)

Smart Algorithm for Three-Dimensional AFM Imaging of High Aspect Ratio Nanostructures

O-11 | 17:00-17:30

Manhee Lee* (Chungbuk National University)

Nondestructive Nanoscopy through Bifurcation-Controlled Nonlinear Dynamics of Micro-Cantilever

Break

17:30-17:45

S3. Data Analysis and Treatment

(17:45-19:35)

O-12 | 17:45-18:15

Alex Henderson* (The University of Manchester)

Towards a Common Data File Format for Hyperspectral Images

O-13 | 18:15-18:45

Sven Tougaard* (University of Southern Denmark, DK-5230 Odense M, Denmark)

XPS/HAXPES, and NAP-XPS, for Characterization of Nano-Structured Materials

O-14 | 18:45-19:05

Stanislav Cichon (Institute of Physics, the Czech Academy of Sciences)

Surface composition of Sc and ScN by XPS

O-15 | 19:05-19:35

Sang-Joon Cho* (Institute of Physics, the Czech Academy of Sciences)

Surface Composition of Sc and ScN by XPS

Nov. 19 (Tue), 2024

S3. Data Analysis and Treatment

(09:00-10:20)

O-16 | 09:00-09:30

Satoka AOYAGI* (Seikei University)

Data-driven Analysis of Spectrum and Image Data

O-17 | 09:30-09:50

In-Hui Hwang (POSTECH)

X-ray Emission Spectroscopy Data Processing and Analysis Using Artificial Intelligence

O-18 | 09:50-10:20

Satoshi TOYODA* (Scienta Omicron Japan)

Towards advanced interface visualization in multi layer stacks: Big data and simulation approaches using angle-resolved XPS

Break

10:30-10:50

S4. Novel Techniques and Instrument

(10:50-15:30)

O-19 | 10:50-11:20

Chales Clifford* (National Physical Laboratory)

Scanning Probe Microscopy: from Research to International Standards

O-20 | 11:20-11:50

Si-Young Choi* (POSTECH)

TBD

O-21 | 11:50-12:10

Daniel Khaykelson (Weizmann Institute of Science)

Structural Insights into Non-Crystalline (“Amorphous”) Thin Silicone-Nitride Films

★Luncheon Seminar

12:10-13:30

O-22 | 13:30-14:00

John Sader* (Caltech)

Suspended Microchannel Resonators

O-23 | 14:00-14:20

Tsutsumi Kenichi (JEOL Ltd.)

Applications of New Hyper Spectral Map Method by Auger Electron Spectroscopy

O-24 | 14:20-14:50

Young-Min Kim* (Sungkyunkwan University)

Machine Learning-assisted Electron Spectroscopic Imaging for Chemical Analysis of Energy-related Materials

O-25 | 14:50-15:10

Benedikt Paul Klein (Korea Basic Science Institute)

Practical Determination of the Transmission Function of a Near Ambient Pressure Hemispherical Electron Analyzer

O-26 | 15:10-15:30

SeHo Kim (Korea University)

Designing Energy Materials Guided by 3D Atomic-Resolution Tomography

Break

15:30-15:40

S5. Applications I (Device and Materials)

(15:40-17:20)

O-27 | 15:40-16:10

Wooyoung Jung* (SK hynix)

Innovative Applications of Surface Analysis for 3D Semiconductor Structures

O-28 | 16:10-16:30

Yoshiyuki Yamashita (NIMS)

Photoelectron Holographic Study of Atomic Site Occupancy of the Si Dopant in k-Ga₂O₃(001)

O-29 | 16:30-16:50

Yongsup Park (Kyung Hee University)

Interface Energy Level Offset in Organic Solar Cells Measured by UPS and IPES and Its Correlation with Voc and CT Energy

O-30 | 16:50-17:20

Adam Bushell (Thermo Fisher Scientific)

TBD

Break

17:20-17:30

★Poster Session

17:30-19:20

S8. Electron Spectroscopy

(09:00-10:50)

O-31 | 09:00-09:30

Yeonjin Yi* (Yonsei University)

Electronic Structure of Halide Perovskites: Insights from Photoelectron Spectroscopy Measurement Techniques

O-32 | 09:30-10:00

Kyung-Tae Ko* (Korea Basic Science Institute)

Investigation on Electronic Structure of Exotic Layered Chalcogenide Materials

O-33 | 10:00-10:30

Jeongjin Kim* (Pohang Accelerator Laboratory, POSTECH)

Probing the Surface Electronic Structure and Reaction Intermediate using Synchrotron-Based AP-XPS

O-34 | 10:30-10:50

Siwoo Noh (Korea University/ PAL)

Recent Advances in Soft and Tender X-ray Photoemission Spectroscopies at the Pohang Accelerator Laboratory

Break

10:50-11:00

S9. Electron Microscopy

(11:00-14:50)

O-35 | 11:00-11:30

Sung-Dae Kim* (Pukyong National University)

Understanding Dislocation Dynamics in Advanced Steels via Transmission Electron Microscopy

O-36 | 11:30-11:50

Jiwon Park (Korea Research Institute of Chemical Technology)

대기 중 단일 입자의 모양 및 성분 분석

O-37 | 11:50-12:10

Jung In Yeo (Chung-Ang University)

Gate-dependent Interactions between Fe Atoms on Graphene

★ **Luncheon Seminar**

12:10-13:30

O-38 | 13:30-14:00

Young Heon Kim* (Chungnam National University)

In situ and Operando Transmission Electron Microscopy Study of One-dimensional InAs-based Compound Semiconductor Nanowires

O-39 | 14:00-14:30

Youngung Jeong* (Changwon National University)

Recent Advancements in Elasto-visco-plastic Self-consistent Model and its Application to Various Polycrystal Metals

O-40 | 14:30-14:50

Jungjae Park (Research Institute of Industrial Science & Technology)

Real-Time Investigation of Corrosion Behaviors in Zn-Mg-Al Alloys Using Liquid-Phase TEM

Break

10:50-11:00

S10. Ion Beam Technology

(15:10-16:50)

O-41 | 15:10-15:40

Kyeryung Kim* (Korea Atomic Energy Research Institute)

Status and Utilization of Tandem Accelerator-Based Ion Beam Analysis System of KAERI

O-42 | 15:40-16:00

Myoung Choul Choi (Korea Basic Science Institute)

Development of Gas Cluster Ion Beam and Application to the Surface Processing in X-ray Mirror

O-43 | 16:00-16:30

Jang Yun Jung* (Korea Institute of Science and Technology)

Effect of Ag Incorporation on CIGS Solar Cells Using Surface Analytical Techniques

O-44 | 16:30-16:50

Kyungsu Park (HB SOLUTION)

Advantages of Non-Destructive Depth Profile Analysis Using TOF-MEIS Over Destructive Method

Break

16:50-17:30

★**Poster Session**

17:30-19:20

Nov. 20 (Wed), 2024

Plenary Talk 3

O-45 | 09:00-09:50

Sung-Chan Jo (Samsung Display)**

Advanced Surface Analysis for the Perspective in Display/Semiconductor Industry

Break

09:50-10:10

S5. Applications I (Device and Materials)

(10:10-12:10)

O-46 | 10:10-10:40

Richard Morris* (IMEC)

Atom Probe Tomography: Application and Challenges within the Semiconductor Field

O-47 | 10:40-11:00

Hwi Je Woo (Korea Research Institute of Standards and Science)

Nano Imaging of Ultrafast Exciton Dynamics in 2-Dimensional Materials with s-SNOM

O-48 | 11:00-11:20

Chanwon Jung (Pukyong National University)

Investigation of 3D Atomic Distributions in Functional Materials through Atom Probe Tomography

O-49 | 11:20-11:50

Dongchul Ihm* (Samsung Electronics)

Advancements and Challenges in Surface Metrology and Inspection for the 3D Integration Era

O-50 | 11:50-12:10

Pyuck-Pa Choi (Korea Advanced Institute of Science and Technology)

Characterization of Colloidal Pd Nanoparticles using Atom Probe Tomography

★ **Luncheon Seminar**

12:10-13:30

S6. Applications II (Energy)

(13:30-15:10)

O-51 | 13:30-14:00

Yige Sun* (University of Oxford)

Mapping Li Concentration Gradients Across Battery Cathodes

O-52 | 14:00-14:20

Adam Roberts (Kratos Analytical Ltd.)

Using High-throughput XPS Analysis in Determining Na-Fe-Mn-O Cathode Materials Chemistry

O-53 | 14:20-14:50

Takahiro Suzuki* (Cataler Corporation)

Investigation on XPS Charge Neutralization Method for Carbon-Based Battery Materials

O-54 | 14:50-15:10

Tanguy Terlier (Rice University)

Novel Strategies for the Characterization of the Next-generation Energy Storage Materials by ToF-SIMS: from an In-situ Exploration to an Operando Measurement

Break

15:10-15:30

★ **Poster Session**

15:30-18:20

S11. Photon Beam Technology

(10:10-15:00)

O-55 | 10:10-10:40

Un Jeong Kim* (Dongguk University)

Optical Properties of Low Dimensional investigated by Light-Matter Interactions

O-56 | 10:40-11:10

Sooji Nam* (Electronics and Telecommunications Research Institute)

Analysis of Tellurium/Indium Zinc Tin Oxide Heterostructures and Their Device Applications

O-57 | 11:10-11:40

Seokjoon Yun* (University of Ulsan)

Bottom-up Synthesis of 2D Materials for Future Electronics

O-58 | 11:40-12:00

Yoon Mi Choi (Korea research Institute of Chemical Technology)

Molecular-level structural understanding of temperature induced phase transitions in bromine functionalized metal organic framework

★Luncheon Seminar

12:10-13:30

O-59 | 13:30-14:00

Kwangseuk Kyhm* (Pusan National University)

Ultrafast Spectroscopy and Microscopy on Nanostructures

O-60 | 14:00-14:30

Chaejeong Heo* (Sungkyunkwan University)

Label-free Spectroscopic Detection of Biomolecules for Diagnosing Alzheimer's Disease

O-61 | 14:30-15:00

Jung hwa Seo* (University of Seoul)

Photoelectron Spectroscopic Study of the Interfacial Electronic Structures of Metal-Ion Containing Polyelectrolytes on ITO Substrates



Break

15:10-15:30

★ **Poster Session**

15:30-18:20

Nov. 21 (Thu), 2024

S6. Applications II (Energy)

(09:00-12:10)

O-62 | 09:00-09:30

Hyun-Wook Lee* (Ulsan National Institute of Science and Technology)

Observation of the Nucleation and Growth of Lithium Metal Dodecahedra in Anode-free Lithium Batteries

O-63 | 09:30-09:50

Hasmat Khan (Pusan National University)

Surface Engineering and Regulation of a Photoelectrode for Solar Rechargeable Zn-Air Batteries

O-64 | 09:50-10:10

Hyejun Kim (Sungkyunkwan University)

The Solidification Effect of Using Benzenesulfonyl Fluoride Assistants for Liquid Electrolyte in Lithium-Sulfur Batteries

Break

10:20-10:40

O-65 | 10:40-11:10

Masahiro Terashima* (ULVAC PHI)

Chemical State and Energy Band Structure Analysis for Interface Modification in All-Solid-State Battery Materials

O-66 | 11:10-11:30

Hyun-Woo Gong (Korea Institute of Science and Technology)

Unveiling the Longevity Mechanism of Si/Graphite Composite Anodes in Sulfide-based All Solid-State Batteries: Interplay of Nanostructure Evolution and Interface Stability

O-67 | 11:30-11:50

Hongjin Park (Chungnam National University)

Single-Atom Platinum Catalyst for CO Oxidation on Multi-Component Vanadia/Titania Support

O-68 | 11:50-12:10

Alireza Razazzadeh (Pusan National University)

Ru-Based High Entropy Oxide as Acid Stable Electrocatalyst for Oxygen Evolution Reaction

★**Photo & Luncheon Seminar**

12:10-13:30

★**Excursion**

13:30-18:20

S12. Nano Scientific Symposium Korea (NSSK)

(09:00-15:20)

O-69 | 09:00-09:30

Yunseok Kim* (Sungkyunkwan University)

Improved Sensitivity of Atomic force Microscopy Images by Machine Learning

O-70 | 09:30-10:00

Jungchul Lee* (Korea Advanced Institute of Science and Technology)

Unconventional Micro-/Nanofabrication via High Temperature Annealing

O-71 | 10:00-10:20

Ikbun Park (Korea Research Institute of Chemical Technology)

Ultra-sensitive and Nanoscale Imaging of Individual Biomarkers in a Single Neuronal Cell Using Force-Based AFM

Break

10:20-10:40

O-72 | 10:40-11:10

Dong Hyeon Kim* (HanYang University)

The Nanoscale Lattice Deformations in Two-dimensional Materials

O-73 | 11:10-11:40

Junghoon Jahng* (Korea Research Institute of Standards and Science)

TBD

O-74 | 11:40-12:10

Young-Jun Yu* (Chungnam National University)

Charge Trapping Memory Based on 2D Materials Heterostructures

★Photo & Luncheon Seminar

12:10-13:30

O-75 | 13:30-14:00

Eunpa Kim* (Samsung)

TBD

O-76 | 14:00-14:30

Sangmin An* (Jeonbuk National University)

Atomic Force Microscope-based Analysis of the Nanoscale Materials and Fabrication of the Microscale Probes

O-77 | 14:30-15:00

Manhee Lee* (Chungbuk National University)

TBD

O-78 | 15:00-15:20

Taesung Lee (Oxford Instruments)

Tip Displacement Detection Technology AFM Using Quadrature Phase Differential Interferometry

Nov. 22 (Fri). 2024

S7. Applications III (Bio and Organics)

(09:00-11:40)

O-79 | 09:00-09:30

Jaekyung Hyun* (Sungkyunkwan University)

Unraveling of Complex Poxvirus Structure using Cryo-Electron Microscopy

O-80 | 09:30-10:00

Jun-ichiro SAMESHIMA* (Toray Research Center, Inc.)

Mass Imaging Analyses for Practically Utilized Polymers and Bio Materials

O-81 | 10:00-10:20

Maciej Mazur* (University of Warsaw)

Arrays of Spherical Cap Particles: Fabrication of Substrates for Cell Cultures by Dewetting of Thin Polymer Films

Break

10:20-10:40

O-82 | 10:40-11:10

Tanguy Terlier* (Rice University)

Multiplexing Analysis Using Microarray by ToF-SIMS: a High Throughput Exploration Tool for Rapid Chemical Screening

O-83 | 11:10-11:40

HeeJin Lim* (Korea Basic Science Institute)

Time-of-flight secondary ion mass spectrometry imaging of biological samples

Closing Ceremony