

| [TA1] UST-KAERI |                                                                                        |
|-----------------|----------------------------------------------------------------------------------------|
| Date / Time     | September 8 (Tue.), 2026 / 13:00~17:15                                                 |
| Place           | Room A (Grand Hall)                                                                    |
| Chairpersons    | Part 1: Mr. Seok Min Yoon, Mr. Daeuk Kang<br>Part 2: Ms. Malaika Sada, Mr. Joonha Park |

**[TA1\_1] [Invited]** **13:10~13:35**

**From Data Assimilation to Machine Learning: Surrogate Modeling from Limited Experimental Data**

Nguyen Huu Tiep, Jae-Yong Lee, Hae-Yong Jeong

*Sejong University*

**[TA1\_2]** **13:35~13:50**

**Self-Consistent Collisional-Radiative Modeling Coupled with Optical Emission Spectroscopy for Low-Temperature Xenon Plasma Diagnostics**

Sakshi Patwal<sup>1,2</sup>, Kil-Byoung Chai<sup>1,2</sup>

<sup>1</sup>Korea Atomic Energy Research Institute, <sup>2</sup>University of Science and Technology

**[TA1\_3]** **13:50~14:05**

**Carbon Nanofoam-Assisted Enhancement in Laser Driven Proton Acceleration**

Adnan Tariq<sup>1,2</sup>, Malaika Sada<sup>1,2</sup>, Kitae Lee<sup>1,2</sup>, Hana Kim<sup>3</sup>

<sup>1</sup>University of Science and Technology, <sup>2</sup>Korea Atomic Energy Research Institute, <sup>3</sup>Institute for Basic Science

**[TA1\_4]** **14:05~14:20**

**Predicting Heavy Ion Radiation-Induced Oxidative Base Lesions and Clustered DNA Damage Using Geant4-DNA**

Tu Minh Khuong<sup>1,2</sup>, Sangyong Lim<sup>1,2</sup>

<sup>1</sup>Korea Atomic Energy Research Institute, <sup>2</sup>University of Science and Technology

**[TA1\_5]** **14:20~14:35**

**A Novel Surface-Based Photoluminescence Chip for the Sensitive Detection of Transition Metal Ions**

Abrar Hussain<sup>1,2</sup>, Sang Hyun Park<sup>1,2</sup>

<sup>1</sup>Korea Atomic Energy Research Institute, <sup>2</sup>University of Science and Technology

**[TA1\_6]** **14:35~14:50**

**Column Transport Experiments: Montmorillonite Colloid Effects on Eu(III) Migration under Gyeongju LILW Repository Conditions**

Yeajin Kim<sup>1,2</sup>, Kyeong-min Lee<sup>1,2</sup>, So Yeon Chun<sup>2</sup>, Hyeonjin Eun<sup>3</sup>, Youngbeom Kim<sup>2</sup>, Sang-Ho Lee<sup>2</sup>, Jong-Il Yun<sup>3</sup>, Hee-Kyung Kim<sup>1,2</sup>

<sup>1</sup>University of Science and Technology, <sup>2</sup>Korea Atomic Energy Research Institute, <sup>3</sup>Korea Advanced Institute of Science and Technology

**[TA1\_7]** **14:50~15:05**

**Dispersion Stability of Illite Colloids and Adsorption Behavior of Eu(III), Sr(II), and U(VI) under Gyeongju Disposal Conditions**

Kyeong-Min Lee<sup>1,2</sup>, Yeajin Kim<sup>1,2</sup>, Youngbeom Kim<sup>2</sup>, Sang-Ho Lee<sup>1,2</sup>, Hee-Kyung Kim<sup>1,2</sup>

<sup>1</sup>University of Science and Technology, <sup>2</sup>Korea Atomic Energy Research Institute

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| <b>[TA1_8] [Invited]</b>                                                                                                                                                                                                                                                   | <b>15:20~15:45</b> |
| <b>Physical AI and the Humanoid Race</b>                                                                                                                                                                                                                                   |                    |
| Jongwon Park<br><i>Korea Atomic Energy Research Institute</i>                                                                                                                                                                                                              |                    |
| <b>[TA1_9]</b>                                                                                                                                                                                                                                                             | <b>15:45~16:00</b> |
| <b>Flow-Demand-Based Control of Mobile Hydraulic Systems for Unstructured Tasks</b>                                                                                                                                                                                        |                    |
| Gaeun Shin <sup>1,2</sup> , Jinyi Lee <sup>1</sup> , Jongwon Park <sup>1</sup><br><sup>1</sup> <i>Korea Atomic Energy Research Institute, </i> <sup>2</sup> <i>University of Science and Technology</i>                                                                    |                    |
| <b>[TA1_10]</b>                                                                                                                                                                                                                                                            | <b>16:00~16:15</b> |
| <b>Development of a Redundant DOF Wrist and Elevation/Posture-Adjustment Mechanism for Multi-Purpose Nuclear Disaster Response Robots</b>                                                                                                                                  |                    |
| Seongjin Park <sup>1</sup> , Jinyi Lee <sup>2</sup> , Ki Hong Im <sup>2</sup> , Jongwon Park <sup>1,2</sup><br><sup>1</sup> <i>University of Science and Technology, </i> <sup>2</sup> <i>Korea Atomic Energy Research Institute</i>                                       |                    |
| <b>[TA1_11]</b>                                                                                                                                                                                                                                                            | <b>16:15~16:30</b> |
| <b>Development of Reversible Hydrogel Coatings for Low-Temperature Radioactive Surface Decontamination</b>                                                                                                                                                                 |                    |
| Ye-won Jeong <sup>1,2</sup> , Hyung-Ju Kim <sup>1,2</sup> , Sung-Wook Kim <sup>2</sup> , Chan Woo Park <sup>2</sup> , Hee-Man Yang <sup>1,2</sup><br><sup>1</sup> <i>University of Science and Technology, </i> <sup>2</sup> <i>Korea Atomic Energy Research Institute</i> |                    |
| <b>[TA1_12]</b>                                                                                                                                                                                                                                                            | <b>16:30~16:45</b> |
| <b>AI-Assisted PSD with Gamma/Neutron Scintillation Detector for Safeguards Monitoring of Pyroprocessing Electrorefiner</b>                                                                                                                                                |                    |
| Minkyu Kim <sup>1,2</sup> , Seonkwang Yoon <sup>2</sup> , Byung-Hee Won <sup>2</sup> , Chaehun Lee <sup>1,2</sup><br><sup>1</sup> <i>Korea Atomic Energy Research Institute, </i> <sup>2</sup> <i>University of Science and Technology</i>                                 |                    |
| <b>[TA1_13]</b>                                                                                                                                                                                                                                                            | <b>16:45~17:00</b> |
| <b>Investigation and Enhancement of Skin Deposition Dose Model in Level 3 Probabilistic Safety Assessment</b>                                                                                                                                                              |                    |
| Jia Hao Tang <sup>1,2,3</sup> , Sung-yeop Kim <sup>1,2</sup><br><sup>1</sup> <i>Korea Atomic Energy Research Institute, </i> <sup>2</sup> <i>University of Science and Technology, </i> <sup>3</sup> <i>Singapore Nuclear Research and Safety Institute</i>                |                    |
| <b>[TA1_14]</b>                                                                                                                                                                                                                                                            | <b>17:00~17:15</b> |
| <b>Sensitivity Analysis of Building Wake Effects on Atmospheric Dispersion Modeling Using RCAP</b>                                                                                                                                                                         |                    |
| Waad Saleh <sup>1,2,3</sup> , Sung-yeop Kim <sup>1,2</sup><br><sup>1</sup> <i>Korea Atomic Energy Research Institute, </i> <sup>2</sup> <i>University of Science and Technology, </i> <sup>3</sup> <i>Alexandria University</i>                                            |                    |