

Conference Program

August 30 (Wednesday) < Kihada Hall, Uji Obaku Plaza >

Opening

09:30-09:40 Takashi Morii (Director of IAE, Kyoto University)

Plenary Talk

Chair: Takashi Morii

09:40-10:30 **Prospects of Fusion Energy and Paradigm Shifts in Fusion Science**
Zensho Yoshida
(National Institute for Fusion Science, Japan)

10:30-10:50 - Break - (Kihada Hybrid Space)

Oral Session 1

Chair: Shinji Kobayashi

10:50-11:20 **Understanding Non-normal Fluid Behavior in Fusion Plasmas**
Gunsu S. Yun
(Pohang University of Science and Technology, Korea)

11:20-11:50 **Supervised and Unsupervised Learning Approaches to Complement Numerical Simulations of Fusion Plasmas**
Mitsuru Honda (Kyoto University, Japan)

11:50-12:20 **Accelerator Driven System for Efficient Transmutation of Radioactive Waste**
Fujio Maekawa (Japan Atomic Energy Agency, Japan)

12:20-12:35 - Group Photo -

12:35-14:15 - Lunch -

Student Poster Session 1

14:15-15:15 **Student Poster Preview I**

15:15-16:45 **Student Poster Session I** (Kihada Hybrid Space)

Announcement

16:45-16:55 Yuhei Miyauchi (IAE, Kyoto University, Japan)

16:55-17:30 Break (Kihada Hybrid Space)

Welcome Reception & ZE Poster Session

17:30-19:00 Welcome Reception & ZE Poster Session (Kihada Hybrid Space)

August 31 (Thursday) < Kihada Hall, Uji Obaku Plaza >

Student Poster Session 2

- 09:30-10:30 **Student Poster Preview II**
- 10:30-12:00 **Student Poster Session II** (Kihada Hybrid Space)
- 12:00-13:30 - Lunch –

IAE Session

Chair: Peng Lin

- 13:30-13:50 **Structural Biology Approaches to Biomass Utilization:
Opportunities and Challenges**
Takashi Nagata (IAE, Kyoto University, Japan)

Oral Session 2

Chair: Hideaki Ohgaki

- 13:50-14:20 **Design and Synthesis of One-dimensional van der Waals heterostructures
for Energy Applications**
Rong Xiang (Zhejiang University, China)
- 14:20-14:50 **Mode-selective Phonon Excitation of Semiconductors by MIR-free Electron
Laser**
Kyohei Yoshida (Kumamoto Industrial Research Institute, Japan)
- 14:50-15:20 **Simple Designing Artificial Non-heme Metalloenzymes and Their
Application to Stereoselective Synthesis**
Nobutaka Fujieda (Osaka Metropolitan University, Japan)
- 15:20-15:40 - Break - (Kihada Hybrid Space)

Oral Session 3

Chair: Eiji Nakata

- 15:40-16:10 **Thermoelectric Properties of a Printed Thermoelectric Film**
Koji Miyazaki (Kyushu University, Japan)
- 16:10-16:40 **Ultrafast Laser-induced Surface Complexity Patterns at the Nanoscale**
Jean-Philippe COLOMBIER (The Hubert Curien Laboratory, France)
- 16:40-17:10 **Playing with Thermodynamics and Kinetics in CO₂ Conversion Catalysis**
Atsushi Urakawa (Delft University of Technology, Netherlands)
- 17:10-17:40 **Emerging Breeding Blanket variants for the EU DEMO**
Francisco A. HERNÁNDEZ GONZÁLEZ
(Karlsruhe Institute of Technology, Germany)
- 17:40-17:50 - Break - (Kihada Hybrid Space)

17:50-18:00 **Award Ceremony**

Announcement

18:00-18:10 Yuhei Miyauchi (IAE, Kyoto University, Japan)

Closing

18:10-18:15 Toshiyuki NOHIRA (IAE, Kyoto University, Japan)

Parallel Seminar

September 1 (Friday)

Parallel Seminar I : Symposium on Exploring Carbon Negative Energy Science 2023

< Main Building 5F: W-503E & Online >

Exploring Carbon Negative Energy Science

- 8:55-9:00 **Opening address**
Toshiyuki Nohira (IAE, Kyoto University)
- 9:00-9:20 **Optical science and applications of quantum materials for carbon negative energy science**
Kazunari Matsuda (IAE, Kyoto University)
- 9:20-9:40 **Experimental attempts for the confinement of laser produced relativistic plasmas aiming at a new pass for neutron free nuclear fusion and various applications**
Yasuaki Kishimoto, Ryutaro Matsui* (IAE, *GES, Plasma Science UNIT, Kyoto University)
- 9:40-10:00 **Electrodeposition of Alloys toward Application to Electrocatalysis**
Kazuhiro Fukami (Graduate School of Engineering, Kyoto University)
- 10:00-10:20 **In-situ local pH measurement in the vicinity of the electrode in buffered aqueous solutions for CO₂ electroreduction reaction**
Yuko Yokoyama, Kohei Ihara, Naoya Nishi, and Tetsuo Sakka (Graduate School of Engineering, Kyoto University)
- 10:20-10:40 **Break**
- 10:40-11:00 **Development of Photoinduced Reactions Incorporating CO₂ into Organic Compounds**
Naoki Ishida (Graduate School of Engineering, Kyoto University)
- 11:00-11:20 **Mitigating CO₂ emissions through antifouling and energy saving using magnetic adsorption and desorption**
Hideyuki Okumura (Graduate School of Energy Science, Kyoto University)
- 11:20-11:40 **Low-temperature growth of functionalized GNR with electrochemical on-surface synthesis**
Takahiro Kojima, Hiroshi Sakaguchi (IAE, Kyoto University)
- 11:40-12:00 **Mirror symmetry-broken photoluminescent film for generating circularly polarized light with high light intensity and high polarization degree**
Yutaka Okazaki (Graduate School of Energy Science, Kyoto University)
- 12:00-13:30 **Lunch**
- 13:30-13:50 **Hydrogen evolution efficiency with laser-textured electrodes**
Takashi Nakajima (IAE, Kyoto University)

- 13:50-14:10 **Present Status of KU-FEL and Collaboration Research for Carbon Negative Energy Science**
Hideaki Ohgaki, Heishun Zen, Toshiteru Kii (IAE, Kyoto University)
- 14:10-14:30 **Pyrolysis-Assisted Catalytic Conversion of Lignin for High Yield Production of Aromatic Monomers**
Haruo Kawamoto (Graduate School of Energy Science, Kyoto University)
- 14:30-14:50 **Enzymes in combination with membrane-separation and yeast surface display for better depolymerization of woody biomass**
Masato Katahira (IAE, Kyoto University)
- 14:50-15:20 **Break**
- 15:20-15:40 **Measuring single-cell energetics**
Yasuo Mori (Graduate School of Engineering, Kyoto University)
- 15:40-16:00 **Novel Process for Carbon Fixation Reaction Inspired by Natural Photosynthesis**
Surachada Chuaychob (IAE, Kyoto University)
- 16:00-16:20 **Toward the construction of artificial organelles**
Takashi Morii (IAE, Kyoto University)
- 16:20-16:40 **Study on high-purity carbon nanotube membranes toward solar energy harvesting and utilization**
Yuhei Miyauchi (IAE, Kyoto University)
- 16:40-17:00 **Electrochemical reduction of CO₂ to carbon materials in molten salts**
Toshiyuki Nohira (IAE, Kyoto University)
- 17:00-17:10 **Closing address**
Kazunari Matsuda (IAE, Kyoto University)

Parallel Seminar II : High-Temperature Plasma Dynamics and Structure Formation Based on Magnetic Field Diversity " < North Bldg. No.4 4F: Seminar Room & Online >

- 13:00-13:05 **Welcome Address**
Takashi MORII (IAE, Kyoto University, Japan)
- 13:05-13:20 **Introduction**
Kazunobu NAGASAKI (IAE, Kyoto University, Japan)
- 13:20-13:50 **A new stellarator design activity in “Structure Formation and Sustainability Unit” in NIFS**
Hiroyuki YAMAGUCHI (National Institute for Fusion Science, Japan)
- 13:50-14:20 **Pursuit of Configuration Control Experiment in Heliotron J**
Shinsuke OHSHIMA (IAE, Kyoto University, Japan)
- 14:20-14:50 **Controlling three-dimensional magnetic island appearance by external current drive in the CFQS quasi-axisymmetric stellarator**
X. Su (Southwestern Jiaotong University, China)
- 14:50-15:00 - Photo -
- 15:00-15:20 - Coffee Break -
- 15:20-15:50 **Formation of flux tubes by localized heating in KSTAR**
Gun-Su Yun (POSTECH, Korea)
- 15:50-16:20 **Iota scan experiments in the stellarator Wendelstein 7-X**
Tamara ANDREEVA (Max-Planck Institute fur Plasmaphysik, Germany)
- 16:20-16:35 **Discussion/Summary**
- 16:35-16:40 **Closing**
Shigeru INAGAKI (IAE, Kyoto University, Japan)

ZE Poster Session

- ZE2023A-01 Ionics of super-locally-concentrated electrolytes**
Asahi Ohki, Zelei Zhang, Masayuki Saimura, Takashi Nagata,
Masato Katahira, Kazuhiro Fukami, Atsushi Kitada
- ZE2023A-02 Development and evaluation of Fe₂M type bulk Laves compounds**
Katsumi Itagaki, R. Kasada, Kiyohiro Yabuuchi, Keisuke Mukai
- ZE2023A-03 Structural analysis of lignocellulosic biomass by NMR spectroscopy toward decarbonized society**
Hiroshi Nishimura, Kaori Saito, Naoko Kobayashi, Yuu Iseki,
Yoshiteru Mizukoshi, Yutaka Makimura, Yohei Minami, Tomohiro
Hashizume, Keiko Kondo, Masato Katahira, Takashi Watanabe
- ZE2023A-04 Fermentation of a useful polysaccharide using hydrogen sulfide as energy source**
T. Saito, U. Araki, K. Kondo, M. Katahira, M. Takeda
- ZE2023A-05 Influence of Alloying Elements on Radiation Damage Formation and Hydrogen Isotope Trapping in Tungsten**
Y. Hatano, D. Michizawa, A. Matsumoto, M. Nishimura, K. Yabuuchi
- ZE2023A-06 Visualization of mitochondrial temperature fluctuation towards the development of energy production system mimicking mitochondria**
Reiko Sakaguchi, Takashi Morii
- ZE2023A-07 Determining the conditions of heat treatments for extending the lifetime of nuclear reactors (2)**
Y. Matsukawa, H. Fujieda, K. Yabuuchi, K. Morishita, H. Muta
- ZE2023A-08 Sodium-Storage Properties of Antimony Oxide Anodes Enhanced by Addition of Ceria**
Atsuki Teramae, Hiroyuki Usui, Yasuhiro Domi, Takayuki Yamamoto,
Toshiyuki Nohira, Kazuhiko Matsumoto, Rika Hagiwara, Hiroki Sakaguchi
- ZE2023A-09 Study of the surface modification layer of lithium ion electrolyte for electro dialysis**
Kazuya Sasaki, Yuta Shindo, Keisuke Mukai, Ikuma Takahashi,
Ryuta Kasada
- ZE2023A-10 Photoinduced electron-transfer reactions of photosensitizers bound to the active site of enzyme**
H. Takashima, Y. Sato, E. Nakata
- ZE2023A-11 Constructing fluorescent biosensor for visualizing nuclear localization signal of transcription factor Sp1 involved in regulating metabolic pathway**
Shunsuke Tajima, Eiji Nakata, Takashi Morii, Jun Kuwahara
- ZE2023A-12 Dynamics analysis of the nucleic acids in bio-molecular condensates by NMR**
R. Kurokawa, A. Kawakami, Y. Yamaoki, K. Kondo, T. Sakamoto,
T. Nagata, M. Katahira

- ZE2023A-13 **Novel pulsed terahertz source by super-radiance free electron laser oscillator**
Kazuyuki Sakaue, Heishun Zen, Shigeru Kashiwagi
- ZE2023A-14 **NMR analysis on the binding sites of human origin recognition complex subunit 1 to G-quadruplex structure of DNA**
S. Waga, Y. Yamaoki, A. Eladl, K. Kamba, S. Hoshina, H. Horinouchi, K. Kondo, T. Nagata, M. Katahira
- ZE2023A-15 **Applicaion of mode-selective phonon-excitation method in semiconductors of energy functionality with mid-infrared free-electron laser**
Kan HACHIYA, Rei AKASEGAWA, Kyohei YOSHIDA, Heishun ZEN, Takashi SAGAWA, Hideaki OHGAKI
- ZE2023A-16 **Generation of High intensity THz pulse by superposition of undulator superradiance**
Shigeru Kashiwagi, Heishun Zen, Kazuyuki Sakaue
- ZE2023A-17 **Research on the Control of Cell Growth Mechanism Using Peptides Derived from Viral Proteins**
Hideki Kusuoki, Taiichi Sakamoto, Takashi Nagata
- ZE2023A-18 **Change in hardness by hydrogen charging in tungsten irradiated with Fe and He ions**
K. Sato, K. Furue, K. Ueno, R. Kasada, K. Yabuuchi
- ZE2023A-19 **Observation of a distribution of mode-selectively excited phonon on SiC**
Kyohei Yoshida, Heishun Zen, Kan Hachiya, Hideaki Ohagaki
- ZE2023A-20 **Wavelength-dependent degradation of polyurethane with molecular vibrational excitation**
T. Kawasaki, T. Nagata, H. Zen
- ZE2023A-21 **Anode Properties of Bi-Sb Alloy Electrodes for Alkali-Metal-Ion Batteries**
Yukito Yamasaki, Yasuhiro Domi, Hiroyuki Usui, Takayuki Yamamoto, Toshiyuki Nohira, Hiroki Sakaguchi
- ZE2023A-22 **Determination of 4f-level ionization energies for lanthanide-doped multicomponent oxide crystals by photo-induced plasma absorption spectroscopy using a mid infrared free-electron laser**
M. Kitaura, H. Zen, S. Wataanbe, H. Masai, K. Kamada, K. J. Kim, A. Yoshikawa
- ZE2023A-23 **Analysis of transition from axisymmetric torus to helical axis toroidal plasma**
A. Sanpei, H. Himura, T. Inoue, S. Inagaki, T. Sasaki, Y. Ashida, H. Fujiwara, S. Masamune, K. Nagasaki
- ZE2023A-24 **Hydrogen absorption and desorption properties of beryllium intermetallic compounds**
Jae-Hwan Kim, Taehyun Hwang, Yutaka Sugimoto, Keisuke Mukai, Kiyohiro Yabuuchi, Ryuta Kasada, Masaru Nakamichi

- ZE2023A-25 **Development of Solid-State Emitters Applicable to Luminescent Solar Concentrators**
Masaki Shimizu, Hiroshi Sakaguchi
- ZE2023A-26 **Study of Hydrogen Isotope Separation Technology by Molten Salt**
Hisayoshi Matsushima, Nago Toranosuke, Yutaro Norikawa, Toshiyuki Nohira
- ZE2023A-27 **Evaluation of Irradiation Effects on High-Entropy Compound Superconductors**
N. Oono-Hori, K. Sakurai, A. Yamashita, M. Yamanaka, K. Muroi, Y. Mizuguchi, Y. Hayashi, K. Yabuuchi
- ZE2023A-28 **Irradiation and Material Variables Dependence of Bubbles/Voids Formation in Fusion Reactor Structural Materials**
T. Yamamoto, Y. Wu, K. Yabuuchi, J. Haley, K. Yoshida, A. Kimura, G.R. Odette
- ZE2023A-29 **Irradiation Effects on Ceramics Coatings**
S. Kondo, T. Miyagishi, R. Kasada, K. Yabuuchi
- ZE2023A-30 **Study and experiment of an interaction process between a low-density stacked CNT and a high-power**
R. Matsui, Y. Kishimoto, S. Masuno, M. Hashida, Y. Sakawa, N. Hayashi, S. Tokita, and K. Matsuda
- ZE2023A-31 **NMR analysis of biomolecules for development of novel biomaterials**
Kazuyuki Kumagai, Keisuke Kamba, Li Wan, Takuya Suzuki, Yuto Sekikawa, Kayoko Nagata, Akifumi Takaori-Kondo, Masato Katahira, Takashi Nagata, Taiichi Sakamoto
- ZE2023A-32 **Irradiation damage effect on plasma driven hydrogen isotope permeation for plasma facing materials**
Yasuhisa Oya, Yuzuka Hoshino, Asashi Sanfukuji, Qilai Zhou, Kiyohiro Yabuuchi, Tatsuya Hinoki
- ZE2023A-33 **Investigation on interaction structure and dynamics of room-temperature ionic liquid solvation using pulse-selected MIR free-electron laser**
Sakhorn Rimjaem, Monchai Jitevisate, Hideaki Ohgaki, Heishun Zen
- ZE2023A-34 **Structural Analysis of Cell Wall Lignin for Advanced Biomass Utilization: Precise analysis of differences in lignin structure in each cell wall layer**
Y. Matsushita, T. Fukumura, R. Masano, T. Nishimoto, D. Aoki, K. Fukushima, M. Katahira
- ZE2023A-35 **Chemical approach to surface reaction of ablation on organic material**
Jun Fujioka, Takashi Nakajima, Koichi Tsukiyama, Heishun Zen
- ZE2023A-36 **Development of strong superconducting bulk magnets with high shape-flexibility**
Takanori Motoki, Mirei Semba, Jun-ichi Shimoyama, Toshiteru Kii

- ZE2023A-37 Development of small reactive negative ion source using microwave**
H. Himura, S. Nishio, T. Tomotsu, R. Horie, T. Tanba, and S. Inagaki
- ZE2023A-38 Identification of quadruplexes that can regulate gene expression**
Y. Tanaka, T. Nagata and C. Sugimoto
- ZE2023A-39 Analysis and Design of Electrode/Electrolyte Interface for All Solid State Battery**
Ikuma Takahashi, Eisuke Kaji, Ririko Yoneyama, Tsubasa Watanabe, Kazuya Sasaki, Keisuke Mukai
- ZE2023A-40 Development of a crystalline cellulose degradation system consisting of psychrophilic fungus-type hybrid enzymes.**
M. Horiuchi, S. Kuninaga, I. Saito, M. Katahira, T. Nagata
- ZE2023B-01 Physical properties of heterostructures of atomic layer materials**
M. Maruyama, Y. Gao, R. Kitaura, S. Okada, K. Matsuda
- ZE2023B-02 An Efficient Fabrication of Two-Dimensional Heterostructures**
Junpei Okuda, Yuhei Miyauchi and Ryo Kitaura
- ZE2023B-03 Surface Processing of Semiconductors Using Graphene Nanoribbons**
Kazuhiro Fukami, Hiroshi Sakaguchi
- ZE2023B-04 Development of reduced activation high entropy materials for high energy reactor**
N. Hashimoto, M. Niu, H. Oka, S. Isobe, K. Yabuuchi
- ZE2023B-05 Fabrication and characterization of two-dimensional heterostructures for energy conversion applications**
Wenjin Zhang, Yasuyuki Makino, Tomoya Ogawa, Takahiko Endo, Yusuke Nakanishi, Kenji Watanabe, Takashi Taniguchi, Yuhei Miyauchi, Kazunari Matsuda, Yasumitsu, Miyata
- ZE2023B-06 A small-molecule-based technology for live-cell imaging of energy metabolism**
Shin-ichi Sato, Kohei Toh, Eiji Nakata and Takashi Morii
- ZE2023B-07 High performance nanocarbon material development based on molecularly functionalized carbon nanotubes for zero emission energy society**
T. Shiraki, H. Saeki, R. Saito, K. Shima, H. Nishinakama, Y. Miyauchi
- ZE2023B-08 Highly efficient photochemical reactions induced by optimal laser pulses: Vibrational dynamics manipulation with polarizability interactions**
Yukiyoshi Ohtsuki, Reon Ishii, Tomotaro Namba, Takashi Nakajima, Hiroyuki Katsuki, Kenji Ohmori
- ZE2023B-09 Study of temporal evolution of coherent edge radiation during free-electron laser oscillations**
Norihiro Sei, Heishun Zen, and Hideaki Ohgaki

- ZE2023B-10 **Development of hydrogen-oxidizing bacteria strains with high proliferation capability in low hydrogen concentration condition**
Yasunori Aizawa, Takashi Morii
- ZE2023B-11 **Rooftop PV Hosting Capacity in AC Low Voltage Distribution Systems: Future Perspective in Cambodia**
V. Vai and H. Ohgaki
- ZE2023B-12 **Structural studies on hierarchical molecular architectures created in microfluidic device**
Shota Nomura, Chisako Kanzaki, Eiji Nakata, Munenori Numata
- ZE2023B-13 **Oxidation behavior of mechanically alloyed oxide dispersion strengthened alloy powders**
N.Y. Iwata, Y. Morizono, K. Yabuuchi, A. Kimura
- ZE2023B-14 **AFM/EM imaging of intracellular metals with nanostructures constructed via signal amplification systems**
Ipppei Takashima, Chihiro Ikenaga, Zhimin Yang, Eiji Nakata, Kensuke Okuda, Shin Mizukami
- ZE2023B-15 **Elucidation of the novel competitive function between microorganisms of genus Rhizoctonia by genomic approach**
Yuh Shiwa, Tomijiro Hara, Yumiko Takatsuka, Kenji Yokota
- ZE2023B-16 **Development of an RNA editing oligonucleotide to regulate the biological energy system in the cell**
Masatora Fukuda, Yuki Ogata, Takashi Morii
- ZE2023B-17 **Development of novel guanine-tethered antisense oligonucleotides**
Masaki Hagihara, and Takashi Morii
- ZE2023B-18 **Bactericidal effect of the infrared free electron laser**
T. Toyama, H. Zen, J. Fujioka, K. Watanabe, A. Yoshida, K. Inaba, K. Tsukiyama, F. Yoshino, N. Hamada,
- ZE2023B-19 **Study of minor element addition (Ni, Si) on irradiation hardening of pressure vessel model alloys**
Ken-ichi Fukumoto, Y. Ishida, K. Yabuuchi
- ZE2023B-20 **Gas Ionization with Ultrafast Intense Long-Wavelength Infrared Pulses**
Ryoichi Hajima, Keigo Kawase, Heishun Zen, Hideaki Ohgaki
- ZE2023B-21 **High intensity broadband THz pulse generation using external optical cavity**
Yosuke Honda, Heishun Zen, Takanori Tanikawa
- ZE2023B-22 **Ultra Sensitive Electrochemical Nucleic Acid Sensor**
Kazushige Yamana, Tadao Takada, Takashi Morii
- ZE2023B-23 **Enzyme-free selective structural control of glycan by means of molecular vibrational excitation**
T. Honda, K. Kawanishi, H. Zen, A. Kuno

- ZE2023B-24 **Contribution of infrared laser irradiation to diabetes-related pancreatic dysfunctions**
Akiko Katano-Toki, Kosuke Yoshida, Yuma Shiota,
Heishun Zen, Kazuhiro Nakamura
- ZE2023B-25 **In-situ measurement of periodic nanostructures on semiconductor surface induced by mid-infrared free electron lasers**
M. Hashida, S. Masuno, H. Zen, N. Ozaki, S. Tokita and S. Iwamori
- ZE2023B-26 **Development of 3-dimensional radiative distribution measurement system using incoherent digital holography in Heliotron J**
H. Kawazome, N. Nishino, S. Kado, and T. Miyazaki
- ZE2023B-27 **Development of dispersion strengthened high entropy alloys for high burn-up core materials**
Hiroshi OKA, T. Niino, N. Hashimoto, K. Yabuuchi
- ZE2023B-28 **Optimization of reactive oxygen radical production process by atmospheric pressure plasma irradiation**
H.Matsuura, S.X.N.Bui, T.Nakano, N.Yoshinaga, R.Asada, T.Tsuchido,
J.Sakamoto, Y.Takemura, S.Kado
- ZE2023B-29 **Experimental study on the advanced methods of fault diagnosis and reliability evaluation to be applied for complex energy systems**
Hidekazu Yoshikawa, Kazunori Morishita, Shinji Kobayashi,
Yonezo Tsujikura, Akio Gofuku, Takeshi Matsuoka, Masataka Abe,
Junya Nitta, Yasuaki Kuroe, Deheng Li, Kazuyuki Demachi
- ZE2023B-30 **Raman Spectroscopy of Molten Salts Containing Boron Ions**
Yumi Katasho, Yutaro Norikawa, Tetsuo Oishi and Toshiyuki Nohira
- ZE2023B-31 **Synthesis of apatite-coated surface-modified organic polymer microspheres at ambient temperature and pressure**
Takeshi Yabutsuka, Shigeomi Takai, Kiyohiro Yabuuchi
- ZE2023B-32 **Study of nanomaterials toward efficient and high-performance energy conversion**
S. Konabe and Y. Miyauchi
- ZE2023B-33 **Development of a New Method for Controlling Thermal Radiation by Quantum Metamaterials**
Kana Suzuki, Kio Kumagai, Taishi Nishihara,
Yuhei Miyauchi, Atsushi Sakurai
- ZE2023B-34 **Development of automated algorithms for high-speed camera image analysis**
N. Nishino, H. Ohnishi, H. Kawazome, T. Miyazaki, H. Okada, and S. Kado
- ZE2023B-35 **Study on reaction mechanism of visible light-induced living radical polymerization for highly efficient energy utilization**
Y. Miyake, T. Iwami, K. Tanabe, M. Ogasawara, K. Kanaori, H. Sakaguchi

- ZE2023B-37 High beta plasma formation in advanced heliotron configuration using stochastic acceleration**
M. Yoshikawa, S. Kobayashi, Y. Nakashima, J. Kohagura, S. Kado, T. Fujita, R. Yamato, H. Tazuke, R. Fujita, M. Luo, P. Zhang, A. Miyashita, C. Wang, H. Kato
- ZE2023B-38 Analysis of reaction mechanism of haloacid dehalogenase**
Takashi Nakamura, Eiji Nakata, and Takashi Morii
- ZE2023B-39 Small scale water purifier system for pesticides removal: case study hill tribe at Chang Rai province, Thailand**
Pannipha DOKMAINGAM, Hideaki OHGAKI
- ZE2023B-40 High-efficient plasma current drive by electron cyclotron waves in fusion reactor**
T. Seino, K. Yanagihara, K. Tobita, A. Fukuyama, K. Nagasaki, T. Maekawa, Y. Oda
- ZE2023B-41 Development of New Semiconductor Power Control Devices Aiming for Carbon Neutrality –Manufacture of Perovskite Distar–**
Kensho Okamoto, Ken-ichiro Okamoto, Kazunori Morishita
- ZE2023C-01 Study on emission process and evaluation of light outputs for novel scintillation materials using the one electron beam II**
Shunsuke Kurosawa, Akihiro Yamaji, Heishun Zen, Hideaki Ohgaki
- ZE2023C-02 Development of a method for compoiting Li₂TiO₃ and nanocarbon by microwave irradiation**
S. Takayama, K. Mukai, J. Yagi
- ZE2023C-03 Radial Correlation Analysis on Edge Plasma Turbulence in a Toroidal Plasma and its Dependence on Plasma Configuration**
Yoshihiko NAGASHIMA, Shinsuke OHSHIMA, Shigeru INAGAKI, and Akihide FUJISAWA
- ZE2023C-04 Deuterium desorption on heavy ion irradiated tungsten using isothermal desorption method and their optimization**
N. Ashikawa, K. Kasai, Y. Torikai, A. Taguchi, Y. Hayashi, K. Yabuuchi
- ZE2023C-05 Role of irradiation defects in the formation of plasma induced surface structures on tungsten**
Mingzhong Zhao, S. Masuzaki, K. Yabuuchi
- ZE2023C-06 Study of ion irradiation effects on oxide dispersion strengthened ferritic steel**
Jingjie Shen, Kiyohiro Yabuuchi
- ZE2023C-07 Lithium Migration Phenomena in Graphite - SiO Composite during Relaxation**
Shigeomi Takai, Jiawei Fu, Takashi Morii, Takeshi Yabutsuka, Takeshi Yao
- ZE2023C-08 Intracellular calcification of Corynebacterium matruchotti by FEL irradiation**
T. Kono, T. Sakae, H. Okada, Y. Hayakawa, T. Sakai, H. Zen, T. Kii, H. Ohgaki

Student Poster Session

- ZE2023P1-01 **Ultraviolet-Emitting Materials for OLED Application: Design, Synthesis, and Photophysical Properties of 2', 5'-Dioxy-p-Terphenyls**
A. Okusa, K. Nishimura, T. Sakurai, M. Shimizu
- ZE2023P1-02 **The bioactivities of microwave solvolysis lignin from woody biomass — anti-multidrug-resistant bacterial activity and anti-novel coronavirus activity**
Yumi Okabe, Eriko Ohgitani, Osam Mazda, Takashi Watanabe
- ZE2023P1-03 **Effect of modification on the aptamer that binds to IgG1**
Akari Endo, Azumi Ito, Masahiro Sekiguchi, Tomoki Sakamoto, Masato Katahira, Takashi Nagata, Takeshi Ishikawa, Kenji Yamagishi, Taiichi Sakamoto
- ZE2023P1-04 **CeO₂/Sb₂O₃ Composite Anodes for Na-Ion Batteries**
Atsuki Teramae, Hiroyuki Usui, Yasuhiro Domi, Takayuki Yamamoto, Toshiyuki Nohira, Kazuhiko Matsumoto, Rika Hagiwara, Hiroki Sakaguchi
- ZE2023P1-05 **Electronic structure of covalent networks of triangular graphene flakes embedded in hBN**
H. Zhang, M. Maruyama, Y. Gao, and S. Okada
- ZE2023P1-06 **Effect of Difference in Charge Carriers on Charge-Discharge Properties of Bi-Sb Alloy Electrodes**
Yukito Yamasaki, Yasuhiro Domi, Hiroyuki Usui, Takayuki Yamamoto, Toshiyuki Nohira, Hiroki Sakaguchi
- ZE2023P1-07 **Electronic structure of multilayer graphene under an external electric field**
N. Sultana, Y. Gao, M. Maruyama, S. Okada
- ZE2023P1-08 **Development of unique antisenses that selectively stabilize guanine-quadruplex structures in mRNA.**
Yuri Sohma, and Masaki Hagihara
- ZE2023P1-09 **Exciton effects at high temperatures in the transmittance spectra of single-walled carbon nanotube membranes**
Kaichi Teranishi, Taishi Nishihara, Yuhei Miyauchi
- ZE2023P1-10 **Enhancing Ethanol Fermentation of Glucose and Acetate through Comprehensive Metabolic Engineering of *Saccharomyces cerevisiae***
Mohamed O. Mohamed, Sadat Mohamed Rezk Khattab, Keiko Kondo, Takashi Nagata, Takashi Watanabe, Masato Katahira
- ZE2023P1-11 **Enhancing Cellulose Degradation of Sugarcane Trash: The Boosting Effect of LPMO9 from Wood Rot Fungus on Enzymatic Activity**
Y. Yagi, E. Oga, K. Kondo, H. Okano, T. Watanabe, T. Nagata, M. Katahira

- ZE2023P1-12 **Role of nuclear transmuted Re on hydrogen isotope permeation by HD mixed plasma**
Yuzuka Hoshino, Masato Nakayama, Azusa Matsumoto, Yuji Hatano, Tatsuya Hinoki, Kiyohiro Yabuuchi, Yasuhisa Oya
- ZE2023P1-13 **Irradiation effects on high entropy cuprate superconductor thin films**
K. Sakurai, N. Oono, A. Yamashita, M. Yamanaka, Y. Mizuguchi, K. Yabuuchi
- ZE2023P1-14 **Construction of an assembly of CO₂ fixation enzymes on a DNA scaffold**
H. Konishi, H. Dinh, P. Lin, E. Nakata, H. Atomi, T. Morii
- ZE2023P1-15 **Improvement of Temperature Profile and Heat Transport on NBI Plasma of Heliotron J Using High-Intensity Gas Puffing**
CY. Wang, S. Kobayashi, K. Nagasaki, DC. Qiu, MY. Luo, PF. Zhang, K.Y. Watanabe, R. Seki, A. Miyashita, Y. Kondo, K. Inoshita, S. Inagaki, F. Kin, T. Minami, S. Kado, S. Ohshima, S. Konoshima, T. Mizuchi, H. Okada
- ZE2023P1-16 **Assembly of the functional proteins located on DNA nanostructures**
S. XIAN, E. Nakata, T. Morii
- ZE2023P1-17 **Statistical assessment of athermal point defect production in iron during neutron irradiation**
Liangfan Zhu, Yuting Chen, Baopu Wang, Kazunori Morishita
- ZE2023P1-18 **Lead concentration dependence on Tritium Recovery for Li₂TiO₃-Li₄SiO₄-xPb Mixed Ceramic Materials**
Asahi Sanfukuji, Qilai Zhou, Makoto I. Kobayashi, Yasuhisa Oya
- ZE2023P1-19 **Observation of up-hill gradient particle transport in magnetized toroidal plasma**
R. Matsutani, T. Minami, N. Kenmochi, D. Qiu, G. Motojima, S. Kado, S. Kobayashi, S. Ohshima, F. Kin, S. Konoshima, H. Okada, K. Takeuchi, S. Inagaki, K. Nagasaki
- ZE2023P1-20 **Rich dynamics and structures in the plasma boundary layer triggered by instantaneous energy input by high power-laser — An approach of laboratory astrophysics —**
K. Kondo, R. Matsui, Y. Kishimoto
- ZE2023P1-21 **Development of high bioactivity Zr-Ti alloy by incorporation of apatite nuclei**
Yuwei Wu, Shigeomi Takai, Takeshi Yabutsuka
- ZE2023P1-22 **Compact separator applied to reactive negative ion source using microwave**
S. Nishio, T. Okada, H. Himura, T. Kanki, T. Tomotsu, R. Horie, T. Tanba, and S. Inagaki
- ZE2023P1-23 **Profile reconstruction for elucidating the spatial structure of impurity spectra using EUV spectroscopy on Heliotron J**
C. Feng, S. Kado, S. Inagaki, T. Minami, S. Ohshima, F. Kin, S. Kobayashi, A. Ishizawa, Y. Nakamura, H. Okada, S. Konoshima, T. Mizuchi, A. Iwata, F. Cai, R. Matsutani, K. Nagasaki

- ZE2023P2-01 **Construction of yeast co-displaying xylanase and feruloyl esterase for an efficient biomass degradation**
A. Phienluphon, K. Kondo, T. Nagata, M. Katahira
- ZE2023P2-02 **Electrodeposition of Crystalline Si Film in Molten $\text{KF-KCl-K}_2\text{SiF}_6$ Using Thin Liquid Zn**
Wataru Moteki, Yutaro Norikawa, Toshiyuki Nohira
- ZE2023P2-03 **Preparation of p-n Junction Si Films by Si Electrodeposition in Molten KF-KCl**
Zhengyang Hou, Wataru Moteki, Yutaro Norikawa, Toshiyuki Nohira
- ZE2023P2-04 **Construction of an artificial CO_2 fixation compartment using DNA nanostructure as a scaffold**
Hui Yang, Peng Lin, Eiji Nakata, and Takashi Morii
- ZE2023P2-05 **Fabrication and optical properties of high-purity carbon nanotube membrane without far-infrared absorption**
Z. Liu, T. Nishihara, A. Takakura, Y. Miyauchi
- ZE2023P2-06 **Investigating the Solution Structure and Binding Mechanism of the SAP domain of hnRNP U.**
Chaithanya P Kunjiveedu, Keisuke Kanba, Takashi Nagata, Masato Katahira
- ZE2023P2-07 **EV Transition: Consideration of Local Socio-Environmental Impacts from Mining and Recycling**
Muhammad Hasan Imaduddin, Madhuri Pal, Qinan Maulana Binu Soesanto, Shaoning Zhang, Jiawei Fu, Hairui Ma, Jordi Cravioto, Hideaki Ohgaki, Chen Qu
- ZE2023P2-08 **Effect of Modulated ECH on Energetic-Particle-Driven MHD Instability in Heliotron J**
Yao ZHONG, Kazunobu NAGASAKI, Zhibin WANG, Shinji KOBAYASHI, Shigeru INAGAKI, Takashi MINAMI, Shinichiro KADO, Shinsuke OHSHIMA, Fumiyoshi KIN, Chenyu WANG, Yuji NAKAMURA, Shigeru KONOSHIMA, Toru MIZUUCHI, Hiroyuki OKADA, Nikolai MARUSHCHENKO
- ZE2023P2-09 **Effect of O^{2-} Ion Concentration on Electrodeposition of W Films in Molten CsF-CsCl**
Haochen Wang, Yutaro Norikawa, Toshiyuki Nohira
- ZE2023P2-10 **Mechanisms for the Generation of Large-Size Clusters in Cascade Collisions: Insights from Molecular Dynamics Simulations**
Yuting Chen, Kazunori Morishita
- ZE2023P2-11 **Determination of the complex refractive index spectra of single-structure-enriched carbon nanotube membrane toward solar energy harvesting and utilization**
H. Wu, T. Nishihara, A. Takakura, K. Matsuda, T. Tanaka, H. Kataura, Y. Miyauchi
- ZE2023P2-12 **Low-Temperature growth of Functionalized GNR with Electrochemical on-surface synthesis**
Cheng Yingbo, Kojima Takahiro, Sakaguchi Hiroshi

- ZE2023P2-13 **Analysis of Socioeconomic Linkages in Economy-Energy-Emission Nexus Control Systems for Robustness against Economic Stochasticity in India**
Soumya Basu, Hideyuki Okumura, Keiichi Ishihara
- ZE2023P2-14 **Study of Magnetic Ripple Effect on Impurity Transport in Edge Region of Heliotron J Based on EMC3-ERIENE Simulation**
F. Cai, S. Kado, G. Kawamura, R. Matoike, S. Ohshima, T. Minami, S. Inagaki, F. Kin, S. Kobayashi, A. Ishizawa, Y. Nakamura, H. Okada, S. Konoshima, T. Mizuuchi, Y. Feng, H. Frerichs, K. Nagasaki
- ZE2023P2-15 **Approaching Net Zero Solar PV Systems for Decentralized Application in An Industrial Community**
Allen Lemuel Gonzales Lemence, Wu Yuwei, Wei Siwei, Wang Yanlin, Soumya Basu, Yutaka Okazaki, Takashi Sagawa
- ZE2023P2-16 **Demonstration of a single-photon emission in artificial $WSe_2/CrCl_3$ van der Waals heterostructure**
Yubei Xiang, and Kazunari Matsuda
- ZE2023P2-17 **NMR analysis of the sequence-specific RNA-binding protein Musashi1 involved in the translation control of downstream target RNAs**
Wei Hsun Tu, Takao Imai, Takashi Nagata, Masato Katahira
- ZE2023P2-18 **Energy-Efficient Strategies to Tackle Marine Plastic Wastes**
Rei Akasegawa, Dong Luo, Kouki Kimura, Yoon Hnin Bo Ju, Yushiro Yamashita, Pengcheng Qiu, Kimi Ueda, Harifara Rabemanolontsoa and Benjamin McLellan
- ZE2023P2-19 **Investigating macropinocytosis dynamics: development of a multiple-target detectable sensor based on DNA nanostructure**
Mashal Asif, Eiji Nakata, Yuya Shibano, Khongurzul Gerelbaatar, Takashi Morii

Kyoto University Uji Campus

【North Bldg. No.4 4F】
Sept. 1 Parallel Seminar II

【W-503E】 Sept. 1 Parallel Seminar I

【Kyoto Univ. Cafeteria】
Lunch

Keihan-Uji Line
Obaku Station

JR Nara Line
Obaku Station

【Restaurant Kihada】
Lunch

【Kihada Hall】

- Aug. 30 Plenary
- Aug. 30 Oral Session I
- Aug. 30 Student Poster Preview I
- Aug. 31 Student Poster Preview II
- Aug. 31 IAE Session
- Aug. 31 Oral Session II
- Aug. 31 Oral Session III
- Aug. 31 Award Ceremony

【Hybrid Space】

- Aug. 30 Student Poster Session I
- Aug. 30 Welcome Reception & ZE Poster Session
- Aug. 31 Student Poster Session II

