

Conference Program

Oral Session I < Kihada Hall, Obaku Plaza >

September 4 (Wednesday)

Opening

09:30-09:45 Yasuaki KISHIMOTO (Director of IAE, Kyoto University)

Session 1

Chair: Yasuaki KISHIMOTO

Plenary Talk

09:45-10:35 **Active Approach Forward for Comfortable World**
Akira FUJISHIMA
(Tokyo University of Science, Japan)

10:35-11:00 **Sodium Secondary Batteries Using Ionic Liquid Electrolytes for Energy Storage**
Toshiyuki NOHIRA (IAE, Kyoto University, Japan)

11:00-11:20 - Coffee Break - (Kihada Hybrid Space)

Session 2

Chair: Yasuaki KISHIMOTO

11:20-11:45 **Current policies and issues, and strategies in the future on energy and climate change response**
Keigo AKIMOTO
(Research Institute of Innovative Technology for the Earth, Japan)

11:45-11:55 **Introduction to the Institute of Refrigeration and Cryogenics, and our group's research**
Xiaohong HAN (Zhejiang University, China)

11:55-12:10 - Group Photo -

12:10-13:10 - Lunch -

Session 3

Chair: Toshiyuki NOHIRA

13:10-13:40 **Optical anisotropy of handed carbon nanotubes assembled with chiral flavin helix and its application for Hg(II) sensor**
Sang Yong JU (Yonsei University, Republic of Korea)

13:40-14:05 **Solid State Ionics Devices for Use of Renewable Energy ~Device Development Based on Synchrotron X-Ray Operand Measurements~**
Koji AMEZAWA (Tohoku University, Japan)

14:05-14:30 **Novel Application of Hydrogen Energy Devices for Hydrogen Isotope Separation**
Hisayoshi MATSUSHIMA (Hokkaido University, Japan)

14:30-14:55 **Unique metabolism of the Archaea**
Haruyuki ATOMI (Kyoto University, Japan)

14:55-15:15 - Coffee Break - (Kihada Hybrid Space)

Session 4

Chair: Takashi MINAMI

15:15-15:45 **Transport and turbulence in the scrape-off layer and divertor of the National Spherical Torus Experiment**
Filippo SCOTTI (Lawrence Livermore National Laboratory, USA)

15:45-16:10 **Progress of research on edge/divertor plasmas and plasma-wall interactions in fusion experimental devices**
Suguru MASUZAKI (National Institute for Fusion Science, Japan)

16:10-16:35 **Progress of the divertor-relevant experiments in the tandem mirror GAMMA 10/PDX**
Masayuki YOSHIKAWA (University of Tsukuba, Japan)

16:35-16:55 - Coffee Break - (Kihada Hybrid Space)

Panel Discussion: - Beyond the Decade of Zero Emission Energy -

Moderator: Satoshi KONISHI

16:55-17:55 **Panel Discussion** < Kihada Hall >

17:55-18:05 - Break -

18:05-20:05 - Reception - (Kihada Hybrid Space)

Oral Session II < Kihada Hall, Obaku Plaza >

September 5 (Thursday)

Session 5

Chair: Takashi NAGATA

09:30-10:00 **Fungal biodiversity as a source of enzymes for the conversion of biomass into biofuels**
Jean-Guy BERRIN
(INRA - Biodiversité et Biotechnologie Fongiques, France)

10:00-10:25 **Function of cyclic lipopeptides derived from Bacillus spp. in biological control against plant diseases**
Kenji YOKOTA (Tokyo University of Agriculture, Japan)

10:25-11:40 **Poster Session** < Kihada Hybrid Space >

11:40-13:00 - Lunch-

Session 6

Chair: Kazunori MORISHITA

13:00-13:30 **Roles of Nuclear Technology for Future Global Society**
Naoto SEKIMURA (The University of Tokyo, Japan)

13:30-14:00 **Development and qualification of accident-tolerant fuel cladding materials: the H2020 IL TROVATORE approach**
Konstantina LAMBRINO (SCK·CEN, Belgium)

14:00-14:25 **Barrier strength factor of irradiation defects in metals and alloys from dynamic deformation process using in-situ TEM observation in tensile test**
Ken-ichi FUKUMOTO (University of Fukui, Japan)

14:25-14:45 - Coffee Break - (Kihada Hybrid Space)

Session 7

Chair: Hideaki OHGAKI

14:45-15:15 **In situ Fabricated Polymer-Metal/Semiconductor Nanocomposite Thin Films and their Multifaceted Applications**
T. P. Radhakrishnan (University of Hyderabad, India)

15:15-15:40 **Plasmon-enhanced photochemistry; nanoprocessing and energy conversion**
Kosei UENO (Hokkaido University, Japan)

15:40-16:05 **Visualizing defect complexes in multicomponent oxide scintillators using MIR-FEL and LCS γ -ray pulses**
Mamoru KITAURA (Yamagata University, Japan)

Closing Remarks

16:05-16:15 Toshiyuki NOHIRA (IAE, Kyoto University, Japan)

Parallel Seminar

September 6 (Friday)

Parallel Seminar I : Topical Seminar on "Physics, Diagnostics and Analysis of Magnetic Fusion Divertor Plasmas" < North Bldg. No.4 4F: Seminar Room >

- 10:00-10:05 **Welcome Address**
Yasuaki KISHIMOTO (IAE, Kyoto University, Japan)
- 10:05-10:20 **Introduction**
Shinichiro KADO (IAE, Kyoto University, Japan)
- 10:20-10:50 **Recent topics on edge/divertor plasmas and plasma-wall interactions in LHD**
Suguru MASUZAKI (National Institute for Fusion Science, Japan)
- 10:50-11:20 **Volumetric Recombination under Existence of Energetic Electron and Ion in DT-ALPHA**
Atsushi OKAMOTO (Nagoya University, Japan)
- 11:20-11:50 **Plasma detachment and its response to particle exhaust in the GAMMA 10/PDX tandem mirror**
Kunpei NOJIRI (University of Tsukuba, Japan)
- 11:50-12:20 **Spatial distribution characteristics of detached plasma in divertor simulation experimental module of GAMMA 10/PDX**
Takaaki IJIMA (University of Tsukuba, Japan)
- 12:20-13:10 - Lunch -
- 13:10-13:50 **Intrinsic impurity sources and edge transport in NSTX discharges with lithium wall conditioning**
Filippo SCOTTI (Lawrence Livermore National Laboratory, USA) Invited
- 13:50-14:20 **Studies on plasma-lithium surface interactions in LTX- β using optical emission spectroscopy of diatomic molecules**
Taiichi SHIKAMA
(Kyoto University, Japan)
- 14:20-14:50 **Peripheral plasma fluctuation measurement by fast camera in Heliotron J**
Nobuhiro NISHINO
(Hiroshima University, Japan)
- 14:50-15:00 - Photo -
- 15:00-15:20 - Coffee Break -
- 15:20-15:50 **Electron temperature and density measurements by the dual-pass Thomson scattering system in GAMMA 10/PDX**
Masayuki YOSHIKAWA (University of Tsukuba, Japan)

- 15:50-16:20 **Carbon impurity flow measurements in the divertor region of LHD and the local plasma parameters estimation**
Arseniy KUZMIN (Kyoto University, Japan)
- 16:20-16:35 **Discussion/Summary**
- 16:35-16:40 **Closing**
Shinichiro KADO (IAE, Kyoto University, Japan)

Parallel Seminar II

< Main Building 2F: N-273E >

- 10:00-12:00 **Discovery of fungal carbohydrate-active enzymes to unlock the deconstruction of lignocellulosic biomass**
Jean-Guy BERRIN
(INRA - Biodiversité et Biotechnologie Fongiques, France)

Parallel Seminar III : Symposium on Exploring Broadband Energy Science 2019

< Main Building 5F: N-571E >

Exploring Broadband Energy Science

- 13:00-13:05 **Opening address**
Hiroshi SAKAGUCHI (IAE, Kyoto University)
- 13:05-13:30 **Optical Physics in Extreme Low-dimensional Materials for Light Energy Utilization**
Kazunari MATSUDA (IAE, Kyoto University)
- 13:30-13:55 **Self-organized helical nanostructure as a target material for high-power laser irradiation**
Kazuhiro FUKAMI (Graduate School of Engineering, Kyoto University)
- 13:55-14:20 **Capturing colloidal particles dispersed in water by optical tweezers for LIBS measurements**
Tetsuo SAKKA (Graduate School of Engineering, Kyoto University)
- 14:20-14:45 **Induced chirality on monoatomic anions detected by middle UV-transparent molecular assembled nanohelices**
Yutaka OKAZAKI (Graduate School of Energy Science, Kyoto University)
- 14:45-15:10 **Creation of Molecular Nanocarbons via a Solution Synthesis**
Shunpei NOBUSUE (IAE, Kyoto University)
- 15:10-15:35 **Developing a technique to detect and size individual nanoobjects in bulk water using a laser: probing the hydrogen bubbles during electrolysis**
Takashi NAKAJIMA (IAE, Kyoto University)
- 15:35-16:00 **Present Status and User Applications in KU-FEL**
Hideaki OHGAKI (IAE, Kyoto University)
- 16:00-16:25 **Acquisition of a series of proteins useful for utilization of woody biomass and their integration**
Masato KATAHIRA (IAE, Kyoto University)
- 16:25-16:50 **Artificial metabolic reactions by spatially organized enzymes**
Takashi MORII (IAE, Kyoto University)
- 16:50-17:10 **Sodium Secondary Batteries Using Ionic Liquid Electrolytes for Energy Storage (Tentative)**
Toshiyuki NOHIRA (IAE, Kyoto University)
- 17:15-17:30 **Future perspectives of the solar energy research projects**
Kazunari MATSUDA (IAE, Kyoto University)

Poster Session

- ZE31A-01 **Improvement of Protonic Properties of Hydronium Solvate Ionic Liquids**
A. Kitada, K. Fukami, M. Saimura, T. Nagata, M. Katahira
- ZE31A-02 **Development of standard methods for ion-irradiation experiments on nuclear energy materials**
R. Kasada, S. Kondo, Y. Liu, H. Yu, K. Yabuuchi
- ZE31A-03 **Study of formation process of solute clusters in stainless steel with ion irradiation**
K. Fukumoto, A. Kimura
- ZE31A-04 **Aggregative property of glucosaminoglycan prepared from a sulfur-oxidizing bacterium, *Thiothrix nivea***
K. Kondo, R. Tomonaga, M. Kato, H. Mori, R. Usami, T. Murakami, M. Katahira, M. Takeda
- ZE31A-05 **Crystal Growth of Silicon from Liquid Si-Zn Alloy for the Production of Solar-Grade Silicon**
K. Yasuda, R. Haraguchi, Y. Ma, T. Nohira
- ZE31A-06 **Photoinduced Electron-Transfer Reactions of Metal Complexes as Photosensitizers bound to the Active Site of Enzyme**
H. Takashima, N. Kato, E. Nakata
- ZE31A-07 **Degradation Mechanism of Sn_4P_3 Negative Electrode by Sodiation and Desodiation**
H. Usui, Y. Domi, R. Yamagami, T. Yamamoto, T. Nohira, R. Hagiwara, H. Sakaguchi
- ZE31A-08 **Charge–Discharge Properties of Sn-P Negative Electrode in an Ionic–Liquid Electrolyte for K–Ion Battery**
E. Nakabayashi, Y. Domi, H. Usui, T. Yamamoto, T. Nohira, H. Sakaguchi
- ZE31A-09 **Effects of Magnetic Field and Metal Nanoparticles on Photocurrents of Dye-Metal Nanoparticle Composite Films**
H. Yonemura, D. Aira, K. Ezoe, H. Sakaguchi
- ZE31A-10 **Substitution Pattern Effect of Bis(diarylphosphinyl)bis(silyl-methoxy)benzenes on Luminescent Properties**
M. Shimizu, S. Nagano, H. Sakaguchi
- ZE31A-11 **Development of a compact THz laser and its applications using energy-chirping-cell attached rf electron gun**
K. Sakaue, Y. Koshiba, S. Otsuka, Y. Tadenuma, H. Zen
- ZE31A-12 **Development of hyper-efficient degradation method of biomass-related compounds by using mid-infrared free electron laser**
T. Kawasaki, H. Zen

- ZE31A-13 **Development of thermal diffusivity evaluation method using miniature laminated specimens.**
M. Akiyoshi, T. Hinoki
- ZE31A-14 **Valence electric structures of oxidation resistant beryllides**
J.-H. Kim, M. Nakamichi, R. Kasada, K. Mukai, K. Yabuuchi, S. Konishi
- ZE31A-15 **Theoretical Analysis of Plasma Flow Velocity Measurement by Optical Vortex Beams**
M. Kitazawa, K. Kitamura, H. Himura, S. Kado
- ZE31A-16 **Stability of oxide particles in oxide dispersion strengthened (ODS) alloys under irradiation**
N. Oono-Hori, S. Ukai, K. Yabuuchi, O. Hashitomi, A. Kimura
- ZE31A-17 **Mode-selective phonon excitation in semiconductors of energy functionality with mid-infrared free-electron laser**
K. Hachiya, R. Akasegawa, K. Yoshida, H. Zen, T. Sagawa, H. Ohgaki
- ZE31A-18 **Photoenergy Conversion System Based on Hybrid DNA/Inorganic Nanomaterials**
K. Yamana, T. Takada, M. Nakamura, T. Morii
- ZE31A-19 **Development of Radiation Measurement Method for the Detection of special nuclear materials with IEC Device**
T. Misawa, Y. Kitamura, Y. Takahashi, X. Xiao, S. Konishi, K. Mukai
- ZE31A-20 **Electrodeposition of Si Films in Molten Salts for Low-cost Manufacturing of Solar Cells**
X. Yang, K. Yasuda, T. Nohira
- ZE31A-21 **Analysis of transition from axisymmetric torus to helical axis toroidal plasma**
A. Sanpei, S. Masamune, H. Himura, E. Kai, Y. Masamichi, K. Nagasaki, H. Okada
- ZE31A-22 **Synergistic Effects of Electronic Excitation and Displacement Damage in Oxide/Nitride Ceramics**
S. Yoshioka, K. Yasuda, S. Matsumura, N. Ishikawa, E. Kobayashi, K. Yabuuchi
- ZE31A-23 **Combined effect of high-temperature irradiation with heavy ion and helium on hydrogen permeation behavior in functional coating for fusion reactor blanket**
T. Chikada, K. Nakamura, K. Kimura, E. Akahoshi, R. Endoh, S. Nakazawa, K. Yabuuchi
- ZE31A-24 **Valence electron structure of Li-containing ceramic breeder for fusion application**
K. Sasaki, K. Shinmura, R. Takemura, R. Kasada, K. Mukai, T. Hoshino
- ZE31A-25 **Effects of Alloying on Deuterium Retention in Fe-Ion Irradiated W**
Y. Hatano, J. Wang, H. Hirose, T. Hinoki

- ZE31A-26 **Development of Organic-Inorganic Hybrid Thin-Films towards Efficient Organic Thin-Film Solar Cells**
T. Akiyama, H. Sakaguchi
- ZE31A-27 **Development of High Ductile ODS Ferritic Steel for Advanced Energy System**
N.Y. Iwata, Y. Morizono, S. Suzuki, K. Yabuuchi, A. Kimura
- ZE31A-28 **High-Fluence Irradiation Behavior of Reduced Activation Fusion Reactor Materials**
H. Tanigawa, M. Ando, D. Hamaguchi, T. Hinoki, Y. Morisada, H. Fujii
- ZE31A-29 **Modeling and Experimental Study on Damage Rate Effects on Bubbles/Voids Formation in Fusion Reactor Structural Materials**
T. Yamamoto, Y. Wu, K. Yabuuchi, G.R. Odette, O. Hashitomi, A. Kimura
- ZE31A-30 **Effect of high energy He ion implantation on hydrogen isotope behavior in tungsten**
Y. Oya, M. Nakata, A. Koike, S. Yamazaki, T. Wada, M. Zhao, F. Sun, T. Hinoki
- ZE31A-31 **Hydrogen isotope retention of tungsten under repeated plasma irradiation**
Y. Ueda, H.T. Lee, H.B. Dane, R. Kawahara, T. Hinoki
- ZE31A-32 **Effect of proton irradiation on the microstructural development of tungsten materials**
T. Miyazawa, S. Nishimura, A. Hasegawa, S. Nogami, K. Yabuuchi
- ZE31A-33 **The role of lattice defects in ceramics on the corrosion**
S. Kondo, Y. Hao, R. Kasada, K. Yabuuchi, T. Hinoki
- ZE31A-34 **Behavior of irradiation produced defect clusters during annealing and its application for the LWR severe accident analysis**
T. Hashimoto, J. Ueno, T. Suzuki, A. Suda, K. Matsukata, K. Takahashi, S. Jitsukawa, T. Hinoki
- ZE31A-35-1 **Improvement of strength and ductility by precipitation control for low-activation vanadium alloy for fusion reactors**
J.J. Shen, T. Nagasaka, K. Saito, G. Yamazaki, S.N. Jiang, A. Kimura, K. Yabuuchi
- ZE31A-35-2 **Microstructural analysis on the multi-component system alloy formed at the bonding interface of dissimilar-metals joint of V-base and Ni-base alloys**
S.N. Jiang, J.J. Shen, T. Nagasaka, H.Y. Fu, K. Hokamoto, R. Kasada, K. Yabuuchi
- ZE31A-36 **Maximizing Energy Production from a Household Grid-Connected PV System in Phnom Penh, Cambodia**
V. Vai, O. Eth, L. Bun, H. Ohgaki

- ZE31A-37 **Interaction analysis between cellulase carbohydrate-binding module and lignin by ultra-high sensitivity NMR for biorefinery**
T. Watanabe, Y. Tokunaga, S. Ohshiro, H. Nishimura, T. Kishimoto, M. Nakamura, K. Kondo, T. Nagata, M. Katahira
- ZE31A-38 **Facile synthesis of highly crystalline poly(3-hexylthiophene) particles**
Y.H. Koo, W.Y. Cha, J.-Y. Lee, W.-S. Kim, K. Matsuda, J.H. Park
- ZE31B-01 **Development of a novel technology for gene expression regulation**
Y. Katsuda, S. Sato, E. Nakata, T. Morii
- ZE31B-02 **Study of Hydrogen Isotope Separation Technology by Molten Salt**
K. Harada, Y. Norikawa, H. Matsushima, T. Nohira
- ZE31B-03 **Identification and characterization of novel antimicrobial cyclic lipopeptides derived from Bacillus sp.**
T. Tsurumi, T. Fujimaki, Y. Takatsuka, T. Hara, K. Yokota
- ZE31B-04 **Thermal properties of sugar alcohol phase change material**
M. Shibahara, T. Hinoki
- ZE31B-05 **Natural Convection Heat Transfer from a Vertical Single Cylinder with Eccentric Grid Spacer in Liquid Sodium**
K. Hata, Q. Liu, T. Nakajima
- ZE31B-06 **Analysis of high-speed camera data based on magnetic flux information**
N. Nishino, A. Nagato, H. Okada, H. Kawazome
- ZE31B-07 **Highly Efficient Photochemical Reactions Induced by Optimal Laser Pulses: Machine-learning-enabled optimization approaches**
T. Namba, M. Yoshida, Y. Arakawa, T. Nakajima, Y. Ohtsuki
- ZE31B-08 **Effect of the orientation of poly(lactic acid)/zinc oxide electrospun fibers on the antimicrobial properties**
A. Khankhuan, W. Kuratsameethong, N. Waiyakoon, M. Sukwilai, C. Kongmueang, B. Damrongsak, T. Hara, Y. Takatsuka, T. Jamnongkan
- ZE31B-09 **Development of RNAs that bind to the Vif - CBF β - CUL 5 - ELOB - ELOC complex**
K. Kumagai, T. Suzuki, Y. Sekikawa, K. Kamba, L. Wan, K. Nagata, A. Takaori-Kondo, M. Katahira, T. Nagata, T. Sakamoto
- ZE31B-10 **Higher vibronic excited states of bridging cyanides in prussian blue realized by ultrashort pulse trains from a mid-infrared free electron laser**
M. Kitaura, A. Ohnishi, M. Ishizaki, H. Zen
- ZE31B-11 **Development of HeI image reconstruction technique using neural network in Heliotoron J**
H. Kawazome, S. Kado, R. Matoike, H. Fujiyama, S. Ohsima, N. Nishino

- ZE31B-12 **Behavior of hydrogen on the surface of fusion reactor materials by computer simulations**
H. Iwakiri, T. Yamashiro, K. Morishita, T. Nakasuji, Y. Watanabe
- ZE31B-13 **Study of electron bunch shape for high-power FEL oscillations using coherent edge radiation**
N. Sei, H. Zen, H. Ohgaki
- ZE31B-14 **Development of single-electron irradiation technique for microscopic track structure study**
Y. Uozumi, Y. Yamaguchi, K. Yoshida, Y. Fukuda, R. Imamura, H. Ohgaki, T. Kii, H. Zen
- ZE31B-15 **Observation of fine plasma structure measured with digital ECE**
S. Inagaki, K. Nagasaki, G.M. Weir, T. Minami, S. Kado, S. Kobayashi, S. Yamamoto, S. Ohshima, H. Okada, T. Mizuuchi, Y. Nagashima, M. Sasaki
- ZE31B-16 **Analysis of radiation induced nano-clusters in RPV steels**
H. Watanabe, K. Tanaka, T. Yamamoto, A. Kimura, K. Yabuuchi
- ZE31B-17 **Analysis of reaction mechanism of haloacid dehalogenase**
T. Nakamura, T. Kozawa, S. Nakano, E. Nakata, T. Morii
- ZE31B-18 **Creation of polysaccharide microsheets in microflow**
A. Kaneyoshi, M. Numata, E. Nakata, T. Hinoki
- ZE31B-19 **R&D of BN/CNTs Heat Dissipation Sheets as Heat Transfer**
K. Shimoda, H. Yoshihara, T. Hinoki
- ZE31B-20 **Development of functional RNA for site-directed RNA editing applicable to regulation of intracellular energy system**
M. Fukuda, K. Nose, T. Morii
- ZE31B-21 **Study on the microbial community structure in medical plant and its application to biological pesticides**
M. Ueno, Y. Gondo, S. Matsumoto, T. Hara, Y. Takatsuka
- ZE31B-22 **Cooperative effects of Bacillus spores on growth, astaxanthin level, and immunity in white-leg shrimp**
A.T.V. Nguyen, T.T. Nguyen, H.T. Nguyen, H.T.T. Pham, A.H. Nguyen, T.N. Phan, T. Hara, Y. Takatsuka
- ZE31B-23 **Production and transport control of reactive radicals with atmospheric pressure plasma**
H. Matsuura, T.T. Nguyen, H. Muraoka, O. Bounyang, R. Asada, M. Furuta, T. Tsuchido, J. Sakamoto, Y. Takemura, S. Kado
- ZE31B-24 **Confirmation of the process of internalization by using ultrasound-enhanced cell-internalization**
A. Harada, E. Nakata, T. Ohtsuki

- ZE31B-25 **Nondestructive evaluation of residual elastic strain on non-irradiated areas by defects caused by ion irradiation**
Y. Subing, Y. Nakagawa, T. Shibayama, S. Kondo, T. Hinoki
- ZE31B-26 **Defect Formation Energies Due to Hydrogen and Helium-dopants on Interstitial Sites in a Pyrochlore-Type $Y_2Ti_2O_7$ Oxide**
B. Tsuchiya, Y. Hayashi, T. Hinoki
- ZE31B-27 **Measurement of the ablation threshold fluence of materials interacted with intense THz waves and mid-infrared laser**
M. Hashida, C. Hosokawa, Y. Tanaka, H. Zen, S. Inoue, S. Sakabe
- ZE31B-28 **Ion-irradiation response of *Explosion-Jointed* Cu-SS**
S. Ohnuki, X. Yi, W. Han, F. Wan, K. Yabuuchi, A. Kimura
- ZE31B-29 **Effect of hydrogen on surface hardness in ion-irradiated tungsten**
K. Sato, H. Yamashita, A. Kiyohara, Q. Xu, R. Kasada, K. Yabuuchi
- ZE31B-30 **Short Antisense-Induced RNA Folding for Specific Gene Regulation**
M. Hagihara, T. Morii
- ZE31B-31 **Development of quadruplex-based gene expression regulation method**
Y. Tanaka, T. Nagata, T. Ogino
- ZE31B-32 **Fabrication of 2D-3D hybrid quantum well structure towards energy conversion devices**
S. Mouri, Y. Komichi, U. Ooe, T. Araki, K. Shinokita, Y. Miyauchi, K. Matsuda
- ZE31B-33 **Physical properties of heterostructures of 2D materials**
S. Okada, M. Maruyama, Y. Gao, K. Matsuda
- ZE31B-34 **Supramolecular assembling regulation of bacterial cell division protein FtsZ on DNA nanostructures**
A. Onoda, K. Oshita, E. Nakata, T. Morii, T. Hayashi
- ZE31B-35 **Development of intracellular thermosensors for the understanding of energy production in mitochondria**
R. Sakaguchi, T. Morii, Y. Mori
- ZE31B-36 **Spatially resolved measurement of helium atom 2^3S - 2^3P emission line intensity using near-infrared Zeeman spectroscopy**
T. Shikama, S. Kado, H. Okada, S. Yamamoto, H. Kawazome, L. Matsuoka, T. Minami, S. Kobayashi, S. Ohshima, Y. Nakamura, A. Ishizawa, S. Konoshima, T. Mizuuchi, K. Nagasaki, Y. Ueno, M. Hasuo
- ZE31B-37 **Research for improving the efficiency of elimination in titanium hydride particles**
Y. Kajimura, H. Tamiya, J. Yagi, S. Takayama

- ZE31B-38 **A small-molecule-based technology for live-cell imaging of energy metabolism**
S. Sato, H. Hakariya, E. Nakata, T. Morii
- ZE31B-39 **Continuous degradation of azo dyes using a hybrid azoreductase including NADPH regeneration system**
M. Horiuchi, T. Nagata, M. Katahira, Y. Kobashigawa, Y. Suzuki, M. Ochiai
- ZE31B-40 **Digital Imaging Spectrometry for Visible Spectra in Fusion Plasma Based on the Atomic / Molecular Process**
M. Irie, M. Irie, S. Kado
- ZE31B-41 **Electrochemical nanopore formation on SiC by defect engineering**
K. Fukami, H. Zen, M. Kinoshita
- ZE31B-42 **Study of nanomaterials toward efficient and high-performance energy conversion**
S. Konabe, Y. Miyauchi
- ZE31B-43 **Study of high-performance plasmas using neutral beam injection in advanced heliotron configuration**
M. Yoshikawa, S. Kobayashi, Y. Nakashima, T. Iijima, S. Islam, S. Yamashita, T. Yoshimoto, T. Hara1, S. Jang, H. Okada, S. Yamamoto, S. Ohshima, S. Cho, T. Nishide, H. Yamashita, M. Luo, M. Yorozyua
- ZE31B-44 **Numerical modeling of irradiation damage in RAFM steel for nuclear fusion application**
Y. Watanabe, K. Morishita, T. Nakasuji, Y. Chen
- ZE31B-45 **Protein Design and Engineering Toward the Functional Biomaterials**
Y. Suzuki, G. Cardone, D. Restrepo, P.D. Zavattieri, T.S. Baker, F.A. Tezcan, E. Nakata
- ZE31B-46 **Effect of non-condensable gas on cooling performance of passive core cooling system**
Y. Yamamoto, M. Mori, K. Morishita, T. Nakasuji, X. Ruan
- ZE31B-47 **Mechanical Property of Ion-irradiated RAFMs by Ultra Micro-tensile Test**
M. Ando, H. Tanigawa, Yu Ju-Hyeon, T. Nozawa, K. Yabuuchi, O. Hashitomi, A. Kimura
- ZE31B-48 **Study on Rural Electrification by Renewable Energy in Sarawak and it's Impact on QOL**
N.A. Rahim, T.C. Kwang, H.S. Che, H. Ohgaki
- ZE31B-49 **Generation of high energy density plasma state by the interaction between highly ordered silicon rod array target and high power laser**
Y. Kishimoto, R. Matsui, N. Uehara, H. Sakaguchi, K. Fukami, Y. Fukuda

- ZE31B-50 **Development of multi-channel spectroscopic system for turbulence measurement**
A. Fujisawa, S. Ohshima
- ZE31B-51 **Iontronic devices using dynamic heterogeneous phase**
N. Yonekura, T. Nakajima
- ZE31B-52 **Development of reduced activation high entropy materials for high energy reactor**
N. Hashimoto, Y. Toramoto, Y. Ono, T. Fukushi, M. Zushi, K. Yabuuchi, O. Hashitomi
- ZE31C-01 **Development of novel laser nanoprocessing technique by using Bessel-like few-cycle laser pulses**
G. Miyaji, R. Saito, Y. Shimoji, K. Matsuda
- ZE31C-02 **Development of Lignin- and Cellulose-Binding Peptide for Wood Biomass Valorization**
H. Takaya, Y. Nakatani, K. Hayashi, E. Nakata, T. Morii, M. Nakamura
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