

# Conference Program

Oral Session < online Zoom Webinar >

**September 15 (Tuesday)**

## Opening

09:00-09:10 Yasuaki KISHIMOTO (Director of IAE, Kyoto University)

## Plenary Talk

Chair: Yasuaki KISHIMOTO

09:10-10:00 **Future Technologies Opened by Low-temperature Plasma Sciences**  
Masaru HORI  
(Nagoya University, Japan)

10:00-10:15 - Break -

## Session 1

Chair: Toshiyuki NOHIRA

10:15-10:45 **Insights on the Premise of Growing Crystalline Silicon Solar Cells on the Benchtop**  
Stephen MALDONADO  
(University of Michigan, USA)

10:45-11:10 **Fuel Cell Research for Carbon Recycling Society**  
Hironori NAKAJIMA (Kyushu University, Japan)

11:10-11:40 **Probing the unique electrical and optical properties in one-dimensional carbon nanotubes and nanoribbons**  
Sihan ZHAO (University of California at Berkeley, USA)

11:40-13:10 - Break -

## Session 2

Chair: Takashi NAGATA

13:10-13:35 **Degradation of Cellulose Aggregate by using Infrared Free Electron Laser**  
Takayasu KAWASAKI (Tokyo University of Science, Japan)

13:35-14:05 **Bioethanol: Current Status and Perspectives**  
Sadat Mohamed Rezk KHATTAB  
(Kyoto University, Japan, Al-Azhar University, Egypt)

14:05-14:30 **Fundamental characteristics of biomass pyrolysis to improve pyrolysis-based technologies**  
Haruo KAWAMOTO (Kyoto University, Japan)

14:30-15:00 - Break -

## Poster Session

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15:00-16:00      **Research Activities on Zero-Emission Energy Network < Remo >**

16:00-16:30      - Break -

## Session 3

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Chair: Tatsuya HINOKI

16:30-16:55      **The Role of D-Li Neutron Sources in Fusion Materials Research and Development**

Takeo MUROGA (National Institute for Fusion Science, Japan)

16:55-17:25      **Unlocking Reductions in the Construction Costs of Nuclear: A Practical Guide for Stakeholders**

Antonio VAYA SOLER (OECD Nuclear Energy Agency, France)

17:25-17:40      - Break -

## Session 4

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Chair: Takashi MINAMI

17:40-18:05      **JT-60SA, the project and the current status**

Shunsuke IDE

(National Institutes for Quantum and Radiological Science and Technology, Japan)

18:05-18:35      **Towards thermonuclear fusion with the stellarator Wendelstein 7-X**

Marcin JAKUBOWSKI (Max Planck Institute for Plasma Physics, Germany)

## Closing Remarks

18:35-18:45      Toshiyuki NOHIRA (IAE, Kyoto University, Japan)

Satellite Meeting < online Zoom >

**September 16 (Wednesday)**

Satellite Meeting : Symposium on Exploring Broadband Energy Science 2020

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

Exploring Broadband Energy Science

- 13:00-13:05      **Opening address**  
Toshiyuki NOHIRA (IAE, Kyoto University)
- 13:05-13:30      **Optical Physics and Potential Applications in Atomically thin Materials for Light Energy Utilization**  
Kazunari MATSUDA (IAE, Kyoto University)
- 13:30-13:55      **Confinement of high energy density plasma using structured medium irradiated by high intensity laser based on "ultra-broadband energy science"**  
Yasuaki KISHIMOTO (IAE, GES, Plasma UNIT, Kyoto University)
- 13:55-14:20      **Macroporous SiC formation in anodization triggered by irradiation-induced lattice defects**  
Kazuhiro FUKAMI (Graduate School of Engineering, Kyoto University)
- 14:20-14:45      **Thermodynamic characteristics of laser ablation plasma in water and the analysis of clustering reactions**  
Tetsuo SAKKA (Graduate School of Engineering, Kyoto University)
- 14:45-15:10      **Nanostructured Metal Sulfides for Solar Cells to Improve the Photovoltaic Performance**  
Takashi SAGAWA (Graduate School of Energy Science, Kyoto University)
- 15:10-15:25      - Break -
- 15:25-15:50      **Low temperature on-surface growth of graphene nanoribbons**  
Takahiro KOJIMA (IAE, Kyoto University)
- 15:50-16:15      **What can we learn from the detection of bubbles?**  
Takashi NAKAJIMA (IAE, Kyoto University)
- 16:15-16:40      **Present Status and Future Perspective in KU-FEL**  
Hideaki OHGAKI (IAE, Kyoto University)
- 16:40-17:05      **Utilization of woody biomass with fungal enzymes**  
Masato KATAHIRA (IAE, Kyoto University)
- 17:05-17:30      **Novel reaction characteristics of spatially organized assembly of enzymes**  
Takashi MORII (IAE, Kyoto University)
- 17:30-17:55      **Electrodeposition of Crystalline Silicon Films in Molten Salts for Photovoltaic Applications**  
Toshiyuki NOHIRA (IAE, Kyoto University)
- 17:55-18:00      **Closing address**  
Kazunari MATSUDA (IAE, Kyoto University)

**Poster Session : Research Activities on Zero-Emission Energy Network**

- ZE2020A-01 **Photoinduced electron-transfer reactions of metal complexes as photosensitizers bound to the active site of enzyme**  
H. Takashima, K. Kimori, E. Nakata
- ZE2020A-02 **Influence of Alloying Elements on Radiation Damage Formation and Hydrogen Isotope Trapping in Tungsten**  
Y. Hatano, J. Wang, H. Hirose, T. Hinoki
- ZE2020A-03 **Elucidation of the energy production system in mitochondria by intracellular thermosensors**  
R. Sakaguchi, T. Morii, Y. Mori
- ZE2020A-04 **Feasibility study and development of novel technique of measuring transverse velocity field using optical vortex emitted from photonic crystal laser**  
M. Kitazawa, K. Kitamura, A. Sanpei, H. Himura, S. Kado
- ZE2020A-05 **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
- ZE2020A-06 **Effects of Magnetic Field and Metal Nanoparticles on Photocurrents of Dye-Metal Nanoparticle Composite Films**  
H. Yonemura, R. Shigiyama, M. Motomizu, H. Sakaguchi
- ZE2020A-07 **Factors affecting the adsorption of  $\beta$ -1,4-glucosaminoglycan onto cellulose**  
K. Kondo, R. Tominaga, R. Usami, T. Murakami, M. Katahira, M. Takeda
- ZE2020A-08 **Hydrogen and helium mixed plasma irradiation effects on tungsten materials with rhenium**  
Y. Ueda, B.D. Hattingh, H.T. Lee, T. Hinoki
- ZE2020A-09 **Protonic Function Search by Novel Synthesis of Ammonium Solvate Ionic Liquid**  
A. Kitada, K. Kawata, K. Fukami, M. Saimura, T. Nagata, M. Katahira
- ZE2020A-10 **Interaction analysis between cellulase carbohydrate-binding module and lignin by ultra-high sensitivity NMR for biorefinery**  
T. Watanabe, Y. Tokunaga, T. Nagata, K. Kondo, M. Katahira
- ZE2020A-11 **Study on Optimization of Alloying Elements of Tungsten Alloys for Improved Irradiation Tolerance**  
S. Nogami, A. Hasegawa, K. Yabuuchi, R. Kasada
- ZE2020A-12 **Development of thermal diffusivity evaluation method using miniature specimens at elevated temperature**  
M. Akiyoshi, T. Hinoki
- ZE2020A-13 **Chemical state analysis of borocarbides**  
N. Mizumoto, R. Kasada, H. Yu, S. Kondo, K. Yabuuchi

- ZE2020A-14 **Structural analysis of FUS/TLS protein upon binding to promotor-associated non coding RNA**  
N. Hamad, R. Yoneda, H. Watanabe, Y. Yamaoki, K. Kondo, T. Uchihashi, T. Nagata, M. Katahira, R. Kurokawa
- ZE2020A-15 **Study of formation process of solute clusters in stainless steel model alloys with ion irradiation**  
K. Fukumoto, K. Yabuuchi
- ZE2020A-16 **High-Fluence Irradiation Behavior of Reduced Activation Fusion Reactor Materials**  
T. Nozawa, M. Ando, H. Tanigawa, J-H. Yu, T. Hinoki, Y. Hayashi, O. Hashitomi, Y. Morisada, H. Fujii
- ZE2020A-17 **Generation and sustainment of high-energy density plasmas via the interaction between high power laser and structured medium**  
Y. Kishimoto, S. Inoue, Y. Fukuda, Y. Sakawa, K. Fukami, T. Pikuz, R. Matsui, N. Uehara, Y. Ihara, H. Sakaguchi
- ZE2020A-18 **The Reaction Mechanism of InSb Anode for Na-Ion Batteries**  
H. Usui, Y. Domi, N. Takada, T. Yamamoto, T. Nohira, K. Matsumoto, R. Hagiwara, H. Sakaguchi
- ZE2020A-19 **Photocarrier dynamics of environmentally-friendly semiconductor Mg<sub>2</sub>Si crystal studied by IR pump-probe experiments**  
M. Kitaura, H. Zen
- ZE2020A-20 **Development of hyper-efficient degradation method of biomass-related compounds by using mid-infrared free electron laser**  
T. Kawasaki, H. Zen
- ZE2020A-21 **Investigation of carotenoid synthesis and microbiome changes in shrimp gut upon feeding shrimp with combined pigmented and non-pigmented Bacillus spores**  
Nguyen Thi Van Anh, Y. Takatsuka, Pham Thi Thu Huong, Phan Tuan Nghia, Nguyen Hoa Anh, K. Yokota, T. Ohira, F. Yamane, T. Hara
- ZE2020A-22 **Analysis of transition from axisymmetric torus to helical axis toroidal plasma**  
A. Sanpei, H. Himura, Y. Ishida, T. Inoue, T. Inoue, S. Masamune, K. Nagasaki, H. Okada, S. Kado
- ZE2020A-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, S. Miura, E. Akahoshi, R. Endoh, S. Nakazawa, R. Norizuki, K. Yabuuchi
- ZE2020A-24 **Effect of high energy He ion implantation on hydrogen isotope behavior in tungsten**  
F. Sun, A. Koike, S. Yamazaki, T. Wada, K. Ashizawa, M. Zhao, T. Hinoki, Y. Oya
- ZE2020A-25 **Solvate structure analysis of fluoride ion by NMR spectroscopy**  
K. Matsumoto, Z. Chen, Y. Tonouchi, M. Saimura, T. Nagata, M. Katahira, R. Hagiwara

- ZE2020A-26 **The effects of dangling-bond on anodic dissolution of ceramics**  
S. Kondo, K. Seki, Y. Maeda, H. Yu, K. Fukami, R. Kasada, T. Hinoki
- ZE2020A-27 **Irradiation effect of oxide particles in oxide dispersion strengthened (ODS) alloys**  
N. Oono, K. Tominaga, O. Hashitomi, K. Yabuuchi
- ZE2020A-28 **Development of High Temperature Ductile ODS Steels for Advanced Nuclear System**  
N.Y. Iwata, Y. Morizono, S. Suzuki, K. Yabuuchi, A. Kimura
- ZE2020A-29 **Room Temperature Phosphorescence of 2,5-Dioxyterephthalates**  
M. Shimizu, R. Hirakawa, H. Sakaguchi
- ZE2020A-30 **High-speed polarization switching using superradiant THz undulator radiation**  
S. Kashiwagi, H. Saito, H. Zen
- ZE2020A-31 **Thermal control of phase change material using graphite powder**  
M. Shibahara, T. Hinoki
- ZE2020A-32 **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
- ZE2020A-33 **Elucidation of change in element density distribution in solid lithium electrolyte during electro dialysis by rf-GD-OES analysis**  
K. Sasaki, K. Shin-mura, R. Takemura, H. Takahashi, K. Mukai, R. Kasada, T. Hoshino
- ZE2020A-34 **Synergistic effects of electronic excitation and displacement damage in oxide/nitride ceramics**  
H. Tomonaka, A. Maruo, K. Yasuda, S. Matsumura
- ZE2020A-35 **Clarification of hydrogen retention behavior for beryllium and beryllides**  
J.H. Kim, K. Mukai, M. Nakamichi, R. Kasada, K. Yabuuchi, S. Konishi
- ZE2020A-36 **Electrochemical Potassiation/Depotassiation Properties of Various Antimony-Based Electrodes**  
K. Kuritani, Y. Domi, H. Usui, T. Yamamoto, T. Nohira, H. Sakaguchi
- ZE2020A-37 **Effect of annealing on the irradiation produced microstructures during annealing and its application for the LWR sever accident analysis**  
T. Hashimoto, K. Takahashi, S. Jitsukawa, T. Hinoki
- ZE2020A-38 **Development of a high peak power and quasi-monochromatic compact THz laser and its applications**  
K. Sakaue, Y. Koshihara, Y. Tadenuma, S. Otsuka, H. Zen, H. Ohgaki
- ZE2020A-39 **Characterization of the interaction between human origin recognition complex subunit 1 and DNAs**  
S. Waga, Y. Yamaoki, A. Eladl, S. Hoshina, H. Horinouchi, O. Eladl, K. Kondo, T. Nagata, M. Katahira

- ZE2020A-40 **Highly Sensitive Electrochemical Detection of DNA Using Nanopillar Electrodes**  
K. Yamana, T. Takada, K. Maenaka, T. Morii
- ZE2020A-41 **Improvement of the Small-scale Biogas Plant for a Household in a Rural Village**  
V. Vai, C. Chhith, S. Eng, C. Hel, O. Eth, L. Bun, H. Ohgaki
- ZE2020B-01 **Design of physical property and functionality of atomic layered materials**  
S. Okada, K. Matsuda, M. Maruyama, Y. Gao
- ZE2020B-02 **NMR analysis for the development of artificial RNAs to control biomolecular functions**  
K. Kumagai, T. Suzuki, Y. Sekikawa, K. Kamba, L. Wan, K. Nagata, A. Takaori-Kondo, M. Katahira, T. Nagata, T. Sakamoto
- ZE2020B-03 **The study of mechanism evaluation of material degradation in irradiation damage microstructure of tungsten for divertor**  
K. Tougou, M. Fukui, K. Fukumoto, K. Yabuuchi
- ZE2020B-04 **Observation of temporal evolution of coherent edge radiation during free-electron laser oscillations**  
N. Sei, H. Zen, H. Ohgaki
- ZE2020B-05 **High spatial resolution near-field imaging of excitons in atomically thin layered materials**  
M. Sakai, K. Matsuda
- ZE2020B-06 **Research and development of enzymatic activity control using VHH antibody**  
A. Takaori-Kondo, T. Nagata
- ZE2020B-07 **Elucidation of correlation between G-quadruplex-based gene expression regulation and their structure.**  
Y. Tanaka, T. Nagata, T. Ogino
- ZE2020B-08 **Spatially resolved measurement of atomic emission line spectra using NIR Zeeman spectroscopy**  
T. Shikama, Y. Ueno, T. Chatani, S. Kado, H. Kawazome, H. Okada, L. Matsuoka, T. Minami, S. Kobayashi, S. Oshima, A. Ishizawa, Y. Nakamura, S. Konoshima, T. Mizuuchi, K. Nagasaki, M. Hasuo
- ZE2020B-09 **Quantitative relationship between plasma-produced reactive radical amount and biological/chemical reaction promotion**  
H. Matsuura, B. Ouanthavinsak, N.T. Tran, H. Min, S.X.N. Bui, R. Asada, M. Furuta, T. Tsuchido, J. Sakamoto, Y. Takemura, S. Kado
- ZE2020B-10 **Highly Efficient Photochemical Reactions Induced by Optimal Laser Pulses: Machine-learning approach**  
T. Namba, M. Yoshida, T. Nakajima, Y. Ohtsuki
- ZE2020B-11 **Electrochemical surface finishing of SiC electrode by controlling the lattice defects: Comparison in the effect of defect formation between DuET and FEL**  
K. Fukami, Y. Maeda, H. Zen

- ZE2020B-12 **Supramolecular reactions: toward discrete microstructures and their self-assemblies in microspace**  
C. Kanzaki, M. Numata, E. Nakata, T. Hinoki
- ZE2020B-13 **Radiation damage in explosion-bonded Cu/SS materials**  
X. Yi, Y. Li, D. Geng, W. Han, F. Wan, S. Ohnuki, K. Yabuuchi
- ZE2020B-14 **NMR analysis of the three-dimensional solution structure of the sequence-specific RNA-binding protein Musashi1 involved in translation control of the downstream target RNA**  
W. Hsun Tu, K. Kamba, T. Nagata, M. Katahira, T. Imai
- ZE2020B-15 **Nondestructive evaluation of residual elastic strain distribution around the interface between non-irradiated areas and ion irradiated area**  
Yang Subing, Y. Nakagawa, T. Shibayama, Y. Hayahsi, T. Hinoki
- ZE2020B-16 **Development of multi-channel spectroscopic system for turbulence measurement**  
A. Fujisawa, S. Ohshima
- ZE2020B-17 **Ultrasound-enhanced cellular internalization of bioactive molecules**  
T. Ohtsuki, A. Harada, E. Nakata
- ZE2020B-18 **Development of a new scheme concerning shock acceleration of ions and experiment utilizing a structured medium**  
R. Matsui, Y. Kishimoto, S. Inoue, Y. Fukuda, Y. Sakawa, T. Pikuz, K. Fukami, N. Uehara, Y. Ihara, K. Matsuda
- ZE2020B-19 **Development of reduced activation high entropy materials for high energy reactor**  
N. Hashimoto, T. Fukushi, E. Wada, H. Oka, K. Yabuuchi, O. Hashitomi
- ZE2020B-20 **Development of HeI image reconstruction technique using neural network in Heliotron J**  
H. Kawazome, S. Kado, R. Matoike, S. Ohshima
- ZE2020B-21 **Time-series data analysis of Heliotron-J plasma by statistical modeling**  
S. Inagaki, K. Nagasaki, G.M. Weir, T. Minami, S. Kado, S. Kobayashi, S. Yamamoto, S. Ohshima, H. Okada, T. Mizuuchi, M. Sasaki
- ZE2020B-22 **Study on impurity behaviors and materials corrosion in liquid metals for advanced nuclear systems**  
T. Oda, J. Han, J. Gil, J. Yagi
- ZE2020B-23 **Mechanical Property of Ion-irradiated RAFMs by Ultra Micro-tensile Test**  
M. Ando, T. Nozawa, H. Tanigawa, K. Yabuuchi, Y. Hayashi, O. Hashitomi
- ZE2020B-24 **He and H Occupying Interstitial and Substitutional Sites in Pyrochlore-type Oxides**  
B. Tsuchiya, Y. Hayashi, T. Hinoki
- ZE2020B-25 **Strengthening and improvement of ductility by precipitation control for low-activation vanadium alloy for fusion reactors**  
J.J. Shen, T. Nagasaka, M. Tokitani, T. Muroga, R. Kasada, K. Yabuuchi



- ZE2020B-26 Analysis of reaction mechanism of haloacid dehalogenase**  
T. Nakamura, S. Nakano, E. Nakata, T. Morii
- ZE2020B-27 Effect of hydrogen on surface hardness in ion-irradiated tungsten**  
K. Sato, A. Kiyohara, R. Kasada, K. Yabuuchi
- ZE2020B-28 Effect of ion irradiation on the microstructure and irradiation hardening of tungsten-rhenium alloys**  
T. Miyazawa, A. Hasegawa, S. Nogami, K. Yabuuchi
- ZE2020B-29 Irradiation impact on the microstructural evolution in Ferritic alloy**  
Y. Watanabe, K. Morishita, Y. Chen
- ZE2020B-30 Analysis of radiation induced nano-clusters in RPV steels**  
H. Watanabe, K. Tanaka, T. Yamamoto, K. Yabuuchi
- ZE2020B-31 Study of periodic nanostructures on semiconductors produced by mid-infrared free electron lasers**  
M. Hashida, Y. Tanaka, C. Hosokawa, H. Zen, T. Nagashima, N. Ozaki, S. Inoue, S. Sakabe
- ZE2020B-32 Preparation and characterization the enzyme immobilization by entrapment within a bio-polymer hydrogel network**  
A. Khankhuan, T. Hara, Y. Takatsuka, T. Jamnongkan
- ZE2020B-33 Study of nanomaterials toward efficient and high-performance energy conversion**  
S. Konabe, Y. Miyauchi
- ZE2020B-34 Control of electric current and heat flux using single particle diodes toward energy harvesting**  
N. Yonekura, T. Nakajima
- ZE2020B-35 Study of Hydrogen Isotope Separation Technology by Molten Salt**  
K. Harada, Y. Norikawa, H. Matsushima, T. Nohira
- ZE2020B-36 Development of the crystalline cellulose degradation system consisting of the psychrophilic fungus-type hybrid enzymes**  
M. Horiuchi, S. Kuninaga, I. Saito, M. Katahira, T. Nagata
- ZE2020B-37 Developmental research on microbial community structure analysis and biopest applications in medicinal plant cultivation**  
M. Ueno, Y. Gondo, S. Matsumoto, T. Hara, Y. Takatsuka
- ZE2020B-38 Study of the suitability of different types of battery for rural electrification and its impact to the quality of life of the communities**  
Nasrudin Abd Rahim, Hang Seng Che, Chia Kwang Tan, H. Ohgaki, J. Cravioto Caballero
- ZE2020B-39 Study for electron-hole plasma on semiconductor surface at mid-infrared region**  
K. Kawase, R. Hajima, H. Zen
- ZE2020B-40 Development of high-speed camera image analysis method using magnetic field information**  
N. Nishino, H. Okada, H. Kawazome, T. Suzuki

- ZE2020B-41 **Microstructures and Mechanical Properties of 10Cr-2W ODS Steels for High Temperature Service Applications**  
S. Noh, K. Yabuuchi
- ZE2020B-42 **R&D of BN/CNTs heat dissipation sheets as heat transfer II**  
K. Shimoda, H. Yoshihara, T. Hinoki
- ZE2020B-43 **Feasibility and lithium analysis on the anion doped oxide - organic nano composite for energy utilization and lithium**  
S. Takayama, J. Yagi
- ZE2020B-44 **Transport analysis for neutral beam heated plasmas in advanced heliotron configuration**  
M. Yoshikawa, S. Kobayashi, Y. Nakashima, J. Kohagura, T. Iijima, Y. Ariizumi, Y. Takeda, H. Okada, S. Ohshima, S. Murata, K. Tokuhara, M. Luo, R. Fukushima
- ZE2020B-45 **A small-molecule-based technology for live-cell imaging of energy metabolism**  
S. Sato, H. Hakariya, E. Nakata, T. Morii
- ZE2020B-46 **Development of RNA editing technology for gene regulation involved in an intracellular energy production and utilization**  
M. Fukuda, K. Nose, Y. Tomita, T. Morii
- ZE2020B-47 **Processing of organic-inorganic hybrid materials by infrared free electron laser**  
J. Fujioka, S. Hoshino, H. Zen, K. Tsukiyama
- ZE2020B-48 **On-site, rapid, qualitative DNA/RNA detection in resource-poor settings**  
M. Hagihara, T. Morii
- ZE2020B-49 **Investigation of current-induced electronic phase in devices based on strongly correlated electron systems**  
H. Narita, S. Yonezawa, A. Miyake, Y. Otani, T. Hinoki, Y. Hayashi, N. Kikugawa, F. Nakamura, Y. Maeno
- ZE2020B-50 **Behavior of hydrogen on the surface of fusion reactor materials by computer simulations.**  
H. Iwakiri, S. Fujita, K. Morishita, Y. Watanabe
- ZE2020B-51 **Characterization of crystalline structure on LIPSS surface induced by intense mid-infrared laser light**  
N. Ozaki, D. Kamibayashi, H. Zen, M. Hashida
- ZE2020B-52 **Development of valleytronic devices using the layered material and nitride semiconductor**  
S. Mouri, Y. Komichi, T. Araki, K. Shinokita, Y. Miyauchi, K. Matsuda
- ZE2020B-53 **Supramolecular assembling regulation of bacterial cell division protein FtsZ on DNA nanostructures**  
A. Onoda, K. Oshita, E. Nakata, T. Morii, T. Hayashi

- ZE2020B-54 Development of an short nucleic acid that regulate transient protein interactions**  
Y. Katsuda, S. Sato, E. Nataka, T. Morii
- ZE2020B-55 Structural identification and biological activity of fengycin, cyclic lipopeptide, derived from Bacillus subtilis YAE51**  
T. Tsurumi, T. Fujimaki, Y. Takatsuka, T. Hara, K. Yokota
- ZE2020C-01 Control of Inner Structure of Apatite Microcapsules Fabricated by Biomimetic Method**  
T. Yabutsuka, K. Nakanishi, S. Takai, T. Hinoki
- ZE2020C-02 Determination of the free energy of the late-blooming phase (2)**  
Y. Matsukawa, Y. Homma, M. Yamaguchi, H. Muta, Y. Ohishi, Y. Kobayashi, K. Yabuuchi
- ZE2020C-03 The effect of ion beam irradiation on the properties of heavily doped nanocrystals**  
M. Sakamoto, T. Hinoki
- ZE2020C-04 Study on neutron imaging techniques for inspection of fusion blanket modules with DD neutron source**  
T. Tanaka, K. Mukai, J. Yagi, S. Konishi
- ZE2020C-05 Analysis of electroretinograms from the crayfish's compound eyes stimulated by mid-infrared of KU-FEL**  
F. Shishikura, H. Zen, Y. Hayakawa, T. Sakai, Y. Sumitomo, T. Kii, H. Ohgaki
- ZE2020C-06 Signal amplification method for the detection of intracellular zinc**  
I. Takashima, Y. Inoue, N. Matsumoto, A. Takagi, E. Nakata, K. Okuda
- ZE2020C-07 Mechanism of Cycle Performance Improvement for Mechanochemically Activated  $\text{LiMn}_2\text{O}_4$**   
S. Takai, T. Morii, T. Yabutsuka, J. Kang, T. Yao
- ZE2020C-08 Study on emission process of scintillation material using the one electron beam and Dark Matter Search with a neutron source**  
S. Kurosawa, H. Zen, K. Fushimi, H. Ohgaki
- ZE2020C-09 Study of experiment and simulation for the synergistic effect of displacement damage and helium on irradiation hardening behavior**  
E. Wakai, Y. Yabuuchi, T. Wakui, H. Noto
- ZE2020C-10 Deuterium reduction of tungsten Heavy ion irradiation**  
N. Ashikawa, G. Kikuchi, Y. Torikai, M. Kobayashi, T. Hinoki
- ZE2020C-11 Depth profile measurements of hydrogen isotopes of damaged tungsten**  
M. Yajima, N. Yoshida, S. Masuzaki, N. Ohno, T. Kuwabara, T. Hinoki
- ZE2020C-12 Development of laser nanoprocessing technique by using short-range surface plasmons excited with few-cycle laser pulses**  
G. Miyaji, K. Matsuda

- ZE2020C-13 **Carbon dioxide gas fixation by laser irradiation response to calculus forming bacteria**  
T. Kono, T. Sakae, H. Okada, Y. Hayakawa, T. Sakai, H. Zen, T. Kii, H. Ohgaki
- ZE2020C-14 **Statistical Analysis on Plasma Fluctuation Data in Heliotron-J**  
Y. Nagashima, S. Oshima, A. Fujisawa, S. Inagaki
- GCOE-A **A Framework for Understanding the Influence of Gender Roles on Appliance Purchasing Behavior of Urban Middle Class in Developing Nations**  
L. Seniorita, S.M. Dumlao, K.K.K. Murthy, C. Qu, J. Cravioto, H. Ohgaki
- GCOE-B **An impact of COVID-19 on energy consumption in Japan and energy system fitting to the new lifestyle**  
P. Lin, S. Meng, E. Ahmadi, S. Zhang, M. Takada, K. Ishihara
- GCOE-C **Japan's post-Fukushima, 2011 and Future Energy Landscape**  
K. Ali, S. Mostafa, Z. Zhang, T. Sagawa