

Categories	Reference number	Title of Research Project	Affiliation	Principle Researcher	Key Person in IAE
Planned joint research	ZE2022A-01	NMR approach toward elucidation of superflat aluminum electrodeposition mechanism	The University of Tokyo	Atsushi Kitada	Masato Katahira
Planned joint research	ZE2022A-02	Development of Interface Design for Improvement of High Temperature Oxidation Properties of High Melting Point Diborides	Tohoku University	Ryuta Kasada	Keisuke Mukai
Planned joint research	ZE2022A-03	Photoinduced electron-transfer reactions of photosensitizers bound to the active site of enzyme	Nara Women's University	Hiroshi Takashima	Eiji Nakata
Planned joint research	ZE2022A-04	Deactivation of SIC Unpaired Electrons by Hydrogen Termination and the Effects on Anti-corrosion	Tohoku University	Sosuke Kondo	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-05	Evaluation of irradiation resistance of high entropy compound superconductors	Yokohama National University	Naoko Oono	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-06	Elucidation of redox status-dependent mitochondrial temperature fluctuation towards the development of energy production system mimicking mitochondria	University of Occupational and Environmental Health	Reiko Sakaguchi	Takashi Morii
Planned joint research	ZE2022A-07	Study on development of compound-based anode for K-ion battery and on compatibility with ionic liquid electrolyte	Tottori University	Yasuhiro Domi	Takayuki Yamamoto
Planned joint research	ZE2022A-08	Development of anode/electrolyte interface for advanced Na-ion battery	Tottori University	Hiroki Sakaguchi	Toshiyuki Nohira
Planned joint research	ZE2022A-09	Fermentation of cellulase-aminating reagent via carbon fixation	Yokohama National University	Minoru Takeda	Masato Katahira
Planned joint research	ZE2022A-10	NMR analysis on regulation of the RNA-binding protein TLS-induced phase separation via methylated RNA	Saitama Medical University	Riki Kurokawa	Masato Katahira
Planned joint research	ZE2022A-11	Irradiation damage effect on plasma driven hydrogen isotope permeation for plasma facing materials	Shizuoka University	Yasuhisa Oya	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-12	Combined effect of irradiation and corrosion on hydrogen isotope permeation behavior in functional coatings for fusion reactor blanket	Shizuoka University	Takumi Chikada	Kiyohiro Yabuuchi

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Planned joint research	ZE2022A-13	Study of the surface modification layer of lithium ion electrolyte for electro dialysis	Hirosaki University	Kazuya Sasaki	Keisuke Mukai
Planned joint research	ZE2022A-14	Development of a low-density stacked CNT targets and generation of high-pressure gas by the high-power laser irradiation	Kyoto University	Ryutaro Matsui	Kazunari Matsuda
Planned joint research	ZE2022A-15	Structure control of persistent materials by molecular vibrational excitation	High Energy Accelerator Research Organization	Takayasu Kawasaki	Heishun Zen
Planned joint research	ZE2022A-16	Structural analysis of lignocellulosic biomass by NMR spectroscopy toward decarbonized society	Kyoto University	Hiroshi Nishimura	Masato Katahira
Planned joint research	ZE2022A-17	Applicaion of mode-selective phonon-excitation method in semiconductors of energy functionality with mid-infrared free-electron laser	Kyoto University	Kan Hachiya	Hideaki Ohgaki
Planned joint research	ZE2022A-18	In-vitro investigation of safety and carotenoid-synthesis of Bacillus strains isolated from shrimp gut by whole genome sequencing for development of biomaterials applied in shrimp aquaculture	VNU University of Science, Vietnam National University, Hanoi	Nguyen Thi Van Anh	Yumiko Takatsuka
Planned joint research	ZE2022A-19	Generation of High intensity THz pulse by superposition of undulator superradiant	Tohoku University	Shigeru Kashiwagi	Heishun Zen
Planned joint research	ZE2022A-20	Precision analysis of high-reactive β -1 structure in lignin for advanced biomass utilization	Tokyo University of Agriculture and Technology	Yasuyuki Matsushita	Masato Katahira
Planned joint research	ZE2022A-21	Mid-infrared spectroscopy of Zintl-phase NaMgX (X=Bi,Sb) using Free-electron laser	Yamagata University	Mamoru Kitaura	Heishun Zen
Planned joint research	ZE2022A-22	Structural basis of DNA recognision by the replication initiator ORC	Japan women's University	Shou Waga	Masato Katahira
Planned joint research	ZE2022A-23	Study on optimization of alloying elements of tungsten alloys for improved irradiation tolerance	Tohoku University	Shuheii Nogami	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-24	Analysis of transition from axisymmetric torus to helical axis toroidal plasma	Kyoto Institute of Technology	Akio Sanpei	Kazunobu Nagasaki

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Planned joint research	ZE2022A-25	Dependence of the hardness increase caused by hydrogenation on irradiation temperature in ion-irradiated tungsten	Kagoshima University	Koichi Sato	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-26	Identification of quadruplexes that can regulate gene expression	Yokohama National University	Yoichiro Tanaka	Takashi Nagata
Planned joint research	ZE2022A-27	Development of Solid-State Emitters Applicable to Luminescent Solar Concentrators	Kyoto Institute of Technology	Masaki Shimizu	Hiroshi Sakaguchi
Planned joint research	ZE2022A-28	Study for the development of functional peptides controlling cell proliferation mechanism using NMR method	National Institute of Infectious Diseases	Hideki Kusunoki	Takashi Nagata
Planned joint research	ZE2022A-29	Determining the conditions of heat treatments for extending the lifetime of nuclear reactors	Kumamoto University	Yoshitaka Matsukawa	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-30	Development of strong superconducting bulk magnets with high shape-flexibility	Aoyama Gakuin University	Takanori Motoki	Toshiteru Kii
Planned joint research	ZE2022A-31	Research on enzyme-free structural alteration of glycan by infrared free electron laser	High Energy Accelerator Research Organization	Takashi Honda	Heishun Zen
Planned joint research	ZE2022A-32	Generation and sustainment of high-energy density plasmas via the interaction between high power laser and structured medium	Kyoto University	Yasuaki Kishimoto	Hiroshi Sakaguchi
Planned joint research	ZE2022A-33	NMR analysis of artificial biomolecules that regulate the function of biomolecules	Chiba Institute of Technology	Taiichi Sakamoto	Takashi Nagata
Planned joint research	ZE2022A-34	Study of Hydrogen Isotope Separation Technology by Molten Salt	Hokkaido University	Hisayoshi Matushima	Toshiyuki Nohira
Planned joint research	ZE2022A-35	Irradiation and Material Variables Dependence of Bubbles/Voids Formation in Fusion Reactor Structural Materials	University of California Santa Barbara	Takuya Yamamoto	Kiyohiro Yabuuchi
Planned joint research	ZE2022A-36	Experimental verification of hydrogen adsorption and desorption behavior for advanced neutron multipliers	National Institutes for Quantum and Radiological Science and Technology	Jae-Hwan KIM	Keisuke Mukai

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Planned joint research	ZE2022A-37	Fabrication of functional organic thin films using infrared free electron pulsed laser deposition method	Tokyo University of Science	Takashi Nakajima	Heishun Zen
Planned joint research	ZE2022A-38	Analysis and Design of Electrode/Electrolyte Interface for All Solid State Battery	Chiba Institute of Technology	Ikuma Takahashi	Keisuke Mukai
Planned joint research	ZE2022A-39	Development of the crystalline cellulose degradation system consisting of the psychrophilic fungus-type hybrid enzymes.	Health Sciences University of Hokkaido	Masataka Horiuchi	Takashi Nagata
Planned joint research	ZE2022A-40	Analysis of processing mechanism in high polymer material by using infrared free electron laser	Tokyo University of Science	Jun Fujioka	Heishun Zen
Planned joint research	ZE2022A-41	Study of solvation structure and dynamics of room-temperature ionic liquids using MIR free-electron laser	Chiang Mai University	Sakhorn RIMJAEM	Hideaki Ohgaki
Planned joint research	ZE2022A-42	Measurement of scintillation response by fast neutron	Tokushima University	Ken-Ichi Fushimi	Keisuke Mukai
Proposal based project	ZE2022B-01	Study of nanomaterials toward efficient and high-performance energy conversion	Hosei University	Satoru Konabe	Yuhei Miyauchi
Proposal based project	ZE2022B-02	Hydrogen and helium mixed plasma irradiation effects on tungsten materials with rhenium	Osaka University	Yoshio Ueda	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-03	Design of physical properties of atomic layer materials by interlayer stacking arrangement	University of Tsukuba	Susumu Okada	Kazunari Matsuda
Proposal based project	ZE2022B-04	Influence of Alloying Elements on Radiation Damage Formation and Hydrogen Isotope Trapping in Tungsten	Toyama University	Yuji Hatano	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-05	Highly efficient photochemical reactions induced by optimal laser pulses	Tohoku University	Yukiyoshi Ohtsuki	Takashi Nakajima
Proposal based project	ZE2022B-06	Extension of operation regimes for advanced heliotron plasmas using stochastic electrostatic acceleration	University of Tsukuba	Masayuki Yoshikawa	Shinji Kobayashi

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Proposal based project	ZE2022B-07	Luminescent nanoporous diamond formed by anodization	Kyoto University	Kazuhiro Fukami	Hiroshi Sakaguchi
Proposal based project	ZE2022B-08	Development of an RNA editing oligonucleotide to regulate the production and utilization of biological energy	Fukuoka University	Masatora Fukuda	Takashi Morii
Proposal based project	ZE2022B-09	Nondestructive evaluation of residual elastic strain distribution around the interface between non-irradiated areas and ion irradiated area III	Hokkaido University	Tamaki Shibayama	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-10	Structural studies on hierarchical molecular architectures created in microfluidic device	Kyoto Prefectural University	Munenori Numata	Eiji Nakata
Proposal based project	ZE2022B-11	Optimization of reactive oxygen radical production process by atmospheric pressure plasma irradiation	University Public Corporation Osaka	Hiroto Matsuura	Shinichiro Kado
Proposal based project	ZE2022B-12	Development of reduced activation high entropy materials for high energy reactor	Hokkaido University	Naoyuki Hashimoto	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-13	Development of 3 dimensional radiative distribution measurement system using incoherent digital holography in Heliotron J.	National Institute of Technology, Kagawa College	Hayato Kawazome	Shinichiro Kado
Proposal based project	ZE2022B-14	In-situ measurement of periodic nanostructures on semiconductor surface induced by mid-infrared free electron lasers	Tokai University	Masaki Hashida	Heishun Zen
Proposal based project	ZE2022B-15	A small-molecule-based technology for live-cell imaging of energy metabolism	Kyoto University	Shin-ichi Sato	Takashi Morii
Proposal based project	ZE2022B-16	Study of temporal evolution of amplified coherent edge radiation during free-electron laser oscillations	National Institute of Advanced Industrial Science and Technology	Norihiro Sei	Hideaki Ohgaki
Proposal based project	ZE2022B-17	Counting the number of mode-selectively excited phonon by observation of anti-Stokes/Stokes Raman scattering	Kumamoto Industrial Research Institute	Kyohei Yoshida	Hideaki Ohgaki
Proposal based project	ZE2022B-18	Development of a New Method for Controlling Thermal Radiation by Quantum Metamaterials	Niigata University	Atsushi Sakurai	Yuhei Miyauchi

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Proposal based project	ZE2022B-19	Control of humidity sorption in porous molecular crystal by intense infrared rays	Kyoto Prefectural University	Hiroshi Yamagishi	Heishun Zen
Proposal based project	ZE2022B-20	Dissolution behavior and spectroscopic measurement of boron compounds in molten salt	National Institute of Advanced Industrial Science and Technology	Yumi Katasho	Yutaro Norikawa
Proposal based project	ZE2022B-21	Hydrogen isotope pick-up and retention in He-exposed W-Mo alloys	University of Manchester	Enrique Jimenez-Melero	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-22	Development of novel guanine-tethered antisense oligonucleotides	Kyoto Prefectural University	Masaki Hagihara	Takashi Morii
Proposal based project	ZE2022B-23	Gas Ionization with Ultrafast Intense Long-Wavelength Infrared Pulses	National Institutes for Quantum and Radiological Science and Technology	Ryoichi Hajima	Heishun Zen
Proposal based project	ZE2022B-24	Impact of nonlinear effect on electron cyclotron current drive (ECCD) in tokamak fusion reactor	Tohoku University	Kenji Tobita	Kazunobu Nagasaki
Proposal based project	ZE2022B-25	Study of minor element addition (Ni, Si) on irradiation hardening of pressure vessel model steels	University of Fukui	Ken-ichi Fukumoto	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-26	Study on living radical polymer production process toward development of highly durable film for lower environmental load	Kyoto Institute of Technology	Yusuke Miyake	Hiroshi Sakaguchi
Proposal based project	ZE2022B-27	Investigation of wavelength converted thermal radiation based on the vibrational strong coupling	Hokkaido University	Tomohiro Fukushima	Taishi Nishihara
Proposal based project	ZE2022B-28	Integrated Nano-Calcium Carbonate Enhanced With Rare Earth Phosphates-Lanthanide in Improving Solar Panel Efficiency	Universiti Malaya	Nasrudin Bin Abd Rahim	Hideaki Ohgaki
Proposal based project	ZE2022B-29	Surface Modification and Microstructure Control of Magnesium Alloys for Bio-signal Responsiveness	Kyoto University	Takeshi Yabutsuka	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-30	Synergistic effects of electronic excitation and displacement damage in oxide/nitride ceramics	Kyushu University	Kazuhiro Yasuda	Kiyohiro Yabuuchi

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Proposal based project	ZE2022B-31	Heavy-ion irradiation and post-irradiation annealing effects in explosion-welded CuCrZr/316LN joints for ITER application	University of Science and Technology Beijing	Somei Ohnuki	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-32	High-Fluence Irradiation Behavior of Reduced Activation Fusion Reactor Materials and its Mechanical Property	National Institutes for Quantum and Radiological Science and Technology	Masami Ando	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-33	Contribution of infrared laser irradiation to diabetes-related pancreatic dysfunctions	Gunma University	Kazuhiro Nakamura	Heishun Zen
Proposal based project	ZE2022B-34	Research and development of enzymatic activity control using VHH antibody	Kyoto University	Akifumi Takaori	Takashi Nagata
Proposal based project	ZE2022B-35	Study of PV Hybrid Energy Systems for Rural Electrification in Cambodia	Institute of Technology of Cambodia	Vannak VAI	Hideaki Ohgaki
Proposal based project	ZE2022B-36	Study of phonon and thermal properties of moire super lattice composed of layered materials	Ritsumeikan University	Shinichiro Mouri	Kazunari Matsuda
Proposal based project	ZE2022B-37	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	The University of Electro-Communications	Takao Imai	Takashi Nagata
Proposal based project	ZE2022B-38	Elucidation of the novel competitive function between microorganisms of genus Rhizoctonia by genomic approach	Tokyo University of Agriculture	Yuh Shiwa	Tomijiro Hara
Proposal based project	ZE2022B-39	Comparative study for antimicrobial activities among antimicrobial cyclic lipopeptide fengycin analogs	Tokyo University of Agriculture	Kenji Yokota	Tomijiro Hara
Proposal based project	ZE2022B-40	Study of optical property of atomically thin layered materials using near-field scanning optical microscope	University of Yamanashi	Masaru Sakai	Kazunari Matsuda
Proposal based project	ZE2022B-41	Study on advanced ICT-based maintenance technology for zero-emission energy infrastructure	Kyoto University	Hidekazu Yoshikawa	Kazunori Morishita
Proposal based project	ZE2022B-42	Development of automated algorithms for high-speed camera image analysis	Bauhutte Co. Ltd.	Nobuhiro Nishino	Shinichiro Kado

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Proposal based project	ZE2022B-43	Mechanical property evaluation of solid-state welded ODS alloys	Pukyong National University	Sanghoon Noh	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-44	Hydrogen pickup of ion irradiated Zry alloys	Kyushu University	Hideo Watanabe	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-45	Evaluation of oxide formation process in alloy powder of high chromium ODS steels	Kurume College	Noriyuki Iwata	Kiyohiro Yabuuchi
Proposal based project	ZE2022B-46	Elucidation of the shrimp growth promoting mechanisms of dietary supplementation with Bacillus spores	Kanagawa University	Tsuyoshi Ohira	Tomijiro Hara
Proposal based project	ZE2022B-47	Supramolecular assembling regulation of bacterial cell division protein FtsZ on DNA nanostructures	Hokkaido University	Akira Onoda	Eiji Nakata
Proposal based project	ZE2022B-48	Development of New Semiconductor Power Control Devices Aiming for Carbon Neutrality	Opto-Semiconductor Laboratory	Kensho Okamoto	Kazunori Morishita
Proposal based project	ZE2022B-49	Development of Design Methods for Leading Small Molecules by RNA Aptamers	Kumamoto University	Yousuke Katsuda	Takashi Morii
Proposal based project	ZE2022B-50	Ultra Sensitive Electrochemical Nucleic Acid Sensor	University of Hyogo	Kazushige Yamana	Takashi Morii
Proposal based project	ZE2022B-51	Analysis of reaction mechanism of haloacid dehalogenase	Nagahama Institute of Bio-Science and Technology	Takashi Nakamura	Takashi Morii
Proposal based project	ZE2022B-52	Developmental research on microbial community structure analysis and biopest applications in medicinal plant cultivation	Shimane University	Makoto Ueno	Tomijiro Hara
Proposal based project	ZE2022B-53	Small scale water purifier system for pesticides removal: case study hill tribe at Chang Rai province, Thailand	Mea Fah Luang University	Pannipha DOKMAINGAM	Hideaki Ohgaki
Joint usage of facilities	ZE2022C-01	Evaluation of thermal resistance at the interface of candidate materials for fusion reactor divertor	University Public Corporation Osaka	Masafumi Akiyoshi	Kiyohiro Yabuuchi

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Joint usage of facilities	ZE2022C-02	Study on emission process and evaluation of light outputs for novel scintillation materials using the one electron beam	Tohoku University	Shunsuke Kurosawa	Hideaki Ohgaki
Joint usage of facilities	ZE2022C-03	Deuterium desorption from heavy ion irradiated tungsten using isothermal desorption method	National Institute for Fusion Science	Naoko Ashikawa	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2022C-04	Development of a method for compoising Li ₂ TiO ₃ and nanocarbon by microwave irradiation	National Institute for Fusion Science	Sadatsugu Takayama	Keisuke Mukai
Joint usage of facilities	ZE2022C-05	Fluorescent analyses of biomolecules and metals through signal amplification system	Tohoku University	Ippei Takashima	Eiji Nakata
Joint usage of facilities	ZE2022C-06	Interaction of LHD divertor plasma and irradiated tungsten	National Institute for Fusion Science	Mingzhong Zhao	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2022C-07	Radial Correlation Analysis on Edge Plasma Turbulence in a Toroidal Plasma and Its Dependence on Plasma Configuration	Kyushu University	Yoshihiko Nagashima	Shinsuke Ohshima
Joint usage of facilities	ZE2022C-08	The effect of ion beam irradiation on the properties of heavily doped nanocrystals	Kyoto University	Masanori Sakamoto	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2022C-09	Study of ion irradiation effects on oxide dispersion strengthened ferritic steel	National Institute for Fusion Science	Jingjie SHEN	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2022C-10	Ionic conduction mechanism of lithium ion conductive LAGP-LaPO ₄ composite	Kyoto University	Shigeomi Takai	Takashi Morii
Joint usage of facilities	ZE2022C-11	Effect of FEL irradiation on the efficiency of carbon dioxide fixation in bacterial cells	Nihon University	Tetsuro Kono	Hideaki Ohgaki
Joint usage of facilities	ZE2022C-12	Analyses of Electroretinograms from Crayfish's Compound Eyes Evoked by KU-FEL Irradiation-2: Fast and Late Reaction	Nihon University	Fumio Shishikura	Hideaki Ohgaki
Research meetings	ZE2022D-01	Distributed Workshop on "Physics and control of non-linear and non-equilibrium plasma based on the concept of broad-band energy science"	Kyoto University	Yasuaki Kishimoto	Kazunari Matsuda

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Research meetings	ZE2022D-02	Investigation for expeirmental simulation of space plasmas using magnetically confined configurations	National Institute for Fusion Science	Kenichi Nagaoka	Shinji Kobayashi
Research meetings	ZE2022D-03	Public outreach activity of advanced energy science for carbon neutral	Kyoto University	Hidekazu Yoshikawa	Kazunori Morishita