

Categories	Reference number	Title of Research Project (English)	Affiliation	Principle Researcher	Key Person in IAE
Planned joint research	ZE2020A-01	Photoinduced electron-transfer reactions of metal complexes as photosensitizers bound to the active site of enzyme	Nara Women's University	Hiroshi Takashima	Eiji Nakata
Planned joint research	ZE2020A-02	Influence of Alloying Elements on Radiation Damage Formation and Hydrogen Isotope Trapping in Tungsten	Hydrogen Isotope Research Center, Organization for Promotion of Research, University of Toyama	Yuji Hatano	Tatsuya Hinoki
Planned joint research	ZE2020A-03	Elucidation of the energy production system in mitochondria by intracellular thermosensors	Kyoto University	Reiko Sakaguchi	Takashi Morii
Planned joint research	ZE2020A-04	Feasibility study and development of novel technique of measuring tranverse velocity field using optical vortex emitted from photonic crystal laser	Kyoto Institute of Technology	Haruhiko Himura	Shinichiro Kado
Planned joint research	ZE2020A-05	Modeling and Experimental Study on Damage Rate Effects on Bubbles/Voids Formation in Fusion Reactor Structural Materials	University of California Santa Barbara	Takuya Yamamoto	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-06	Effects of Metal Nanoparticles and Magnetic Field on Photoproperties of Dye-Metal Nanoparticle Composite Films	Sojo University	Hiroaki Yonemura	Hiroshi Sakaguchi
Planned joint research	ZE2020A-07	Preparation of low molecular weight glucose-glucosamine copolymer and its characterization	Yokohama National University	Minoru Takeda	Masato Katahira
Planned joint research	ZE2020A-08	Hydrogen and helium mixed plasma irradiation effects on tungsten materials with rhenium	Osaka University	Yoshio Ueda	Tatsuya Hinoki
Planned joint research	ZE2020A-09	Protonic Function Search by Novel Synthesis of Ammonium Solvate Ionic Liquid	Kyoto University	Atsushi Kitada	Masato Katahira

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Planned joint research	ZE2020A-10	Interaction analysis between cellulase carbohydrate-binding module and lignin by ultra-high sensitivity NMR for biorefinery	Kyoto University	Takashi Watanabe	Masato Katahira
Planned joint research	ZE2020A-11	Study on optimization of alloying elements of tungsten alloys for improved irradiation tolerance	Tohoku University	Shuhei Nogami	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-12	Development of thermal diffusivity evaluation method using miniature specimens at elevated temperature.	Osaka Prefecture University	Masafumi Akiyoshi	Tatsuya Hinoki
Planned joint research	ZE2020A-13	Chemical state analysis of borocarbides	Tohoku University	Ryuta Kasada	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-14	NMR analysis on conformational alteration of RNA-binding protein with inhibitor for phase separation	Saitama Medical University	Riki Kurokawa	Masato Katahira
Planned joint research	ZE2020A-15	Study of formation process of solute clusters in stainless steel with ion irradiation	RINE/ University of Fukui	Ken-ichi Fukumoto	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-16	High-Fluence Irradiation Behavior of Reduced Activation Fusion Reactor Materials	National Institutes for Quantum and Radiological Science and Technology	Takashi Nozawa	Tatsuya Hinoki
Planned joint research	ZE2020A-17	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	ZE2020A-18	Development of anode/electrolyte interface for advanced Na-ion battery	Tottori University	Hiroki Sakaguchi	Toshiyuki Nohira

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Planned joint research	ZE2020A-19	Photocarrier dynamics of Kankyo semiconductor magnesium silicide single crystals revealed using plasma reflection in mid-infrared region	Yamagata University	Mamoru Kitaura	Heishun Zen
Planned joint research	ZE2020A-20	Development of hyper-efficient degradation method of biomass-related compounds by using mid-infrared free electron laser	IR-FEL Research Center ,Tokyo University of Science	Takayasu Kawasaki	Heishun Zen
Planned joint research	ZE2020A-21	Investigation of carotenoid synthesis and microbiome changes in shrimp gut upon feeding shrimp with combined pigmented and non-pigmented Bacillus spores	VNU University of Science,Vietnam National University, Hanoi	Nguyen Thi Van Anh	Yumiko Takatsuka
Planned joint research	ZE2020A-22	Analysis of transition from axisymmetric torus to helical axis toroidal plasma	Kyoto Institute of Technology	Akio Sanpei	Kazunobu Nagasaki
Planned joint research	ZE2020A-23	Combined effect of high-temperature irradiation with heavy ion and helium on hydrogen permeation behavior in functional coating for fusion reactor blanket	Shizuoka University	Takumi Chikada	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-24	Effect of high energy He ion implantation on hydrogen isotope behavior in tungsten	Shizuoka University	Yasuhisa Oya	Tatsuya Hinoki
Planned joint research	ZE2020A-25	Solvate structure analysis of fluoride ion by NMR spectroscopy	Kyoto University	Kazuhiko Matsumoto	Masato Katahira
Planned joint research	ZE2020A-26	The effects of dangling-bond on anodic dissolution of ceramics	Tohoku University	Sosuke Kondo	Tatsuya Hinoki

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Planned joint research	ZE2020A-27	Irradiation effect of oxide particles in oxide dispersion strengthened (ODS) alloys	Hokkaido University	Naoko Oono	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-28	Development of High Temperature Ductile ODS Steels for Advanced Nuclear System	Kurume College	Noriyuki Iwata	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-29	Development and applications of functional organic materials for energy conservation-directed light-emitting devices	Kyoto Institute of Technology	Masaki Shimizu	Hiroshi Sakaguchi
Planned joint research	ZE2020A-30	High-speed polarization switching using superradiant THz undulator radiation	Tohoku University	Shigeru Kashiwagi	Heishun Zen
Planned joint research	ZE2020A-31	Thermal control of phase change material using graphite powder	Kobe University	Makoto Shibahara	Tatsuya Hinoki
Planned joint research	ZE2020A-32	Mode-selective phonon excitation in semiconductors of energy functionality with mid-infrared free-electron laser	Kyoto University	Kan Hachiya	Hideaki Ohgaki
Planned joint research	ZE2020A-33	Elucidation of change in element density distribution in solid lithium electrolyte during electro dialysis by rf-GD-OES analysis	Hirosaki University	Kazuya Sasaki	Keisuke Mukai
Planned joint research	ZE2020A-34	Synergistic effects of electronic excitation and displacement damage in oxide/nitride ceramics	Kyushu University	Kazuhiro Yasuda	Kiyohiro Yabuuchi
Planned joint research	ZE2020A-35	Clarification of hydrogen retention behavior for beryllium and beryllides	National Institutes for Quantum and Radiological Science and Technology	Kim Jaehwan	Keisuke Mukai

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Planned joint research	ZE2020A-36	Study on development of compound-based anode for K-ion battery and on compatibility with molten salt electrolyte	Tottori University	Yasuhiro Domi	Takayuki Yamamoto
Planned joint research	ZE2020A-37	Evaluation of the stability of irradiation induced point defect clusters during annealing	Fukushima college	Shiro Jitsukawa	Tatsuya Hinoki
Planned joint research	ZE2020A-38	Development of a high peak power and quasi-monochromatic compact THz laser and its applications	Photon Science Center, The University of Tokyo	Kazuyuki Sakaue	Heishun Zen
Planned joint research	ZE2020A-39	Analysis of the binding of human replication initiation protein ORC to guanine quadruplex DNA	Japan women`s University	Shou Waga	Masato Katahira
Planned joint research	ZE2020A-40	Photoenergy Conversion System Utilizing Organic-Inorganic Hybrid Nanomaterials Assembled on DNA	University of Hyogo	Kazushige Yamana	Takashi Morii
Planned joint research	ZE2020A-41	Improvement of the small-scale biogas plant for a household in a rural village	Institute of Technology of Cambodia	Vannak VAI	Hideaki Ohgaki
Proposal based project	ZE2020B-01	Design of physical property and functionality of atomi layered materials	University of Tsukuba	Susumu Okada	Kazunari Matsuda
Proposal based project	ZE2020B-02	NMR analysis for the development of peptides and RNAs to control biomolecular functions	Chiba Institute of Technology	Taiichi Sakamoto	Takashi Nagata
Proposal based project	ZE2020B-03	The study of mechanism evaluation of material degradation in irradiation damage microstructure of tungsten for divertor	University of Fukui	Kouichi Tougou	Kiyohiro Yabuuchi

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Proposal based project	ZE2020B-04	Observation of temporal evolution of coherent edge radiation during free-electron laser oscillations	National Institute of Advanced Industrial Science and Technology	Norihiro Sei	Hideaki Ohgaki
Proposal based project	ZE2020B-05	High spatial resolution near-field imaging of exciton in atomically thin layered materials	University of Yamanashi	Masaru Sakai	Kazunari Matsuda
Proposal based project	ZE2020B-06	Research and development of enzymatic activity control using VHH antibody	Kyoto University	Akifumi Takaori	Takashi Nagata
Proposal based project	ZE2020B-07	Elucidation of correlation between quadruplex-based gene expression regulation and their structure.	Yokohama National University	Yoichiro Tanaka	Takashi Nagata
Proposal based project	ZE2020B-08	Spatially resolved measurement of atomic emission line spectra using NIR Zeeman spectroscopy	Kyoto University	Taiichi Shikama	Shinichiro Kado
Proposal based project	ZE2020B-09	Quantitative relationship between plasma-produced reactive radical amount and biological/chemical reaction promotion	Osaka Prefecture University	Hiroto Matsuura	Shinichiro Kado
Proposal based project	ZE2020B-10	Highly efficient photochemical reactions induced by optimal laser pulses	Tohoku University	Yukiyoshi Ohtsuki	Takashi Nakajima
Proposal based project	ZE2020B-11	Electrochemical Surface Finishing of SiC electrode by controlling the lattice defects: Comparison in the effect of defect formation between DuET and FEL	Kyoto University	Kazuhiro Fukami	Heishun Zen
Proposal based project	ZE2020B-12	Structural studies on hierarchical molecular architectures created in microfluidic device	Kyoto Prefectural University	Munenori Numata	Eiji Nakata

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Proposal based project	ZE2020B-13	Effect of irradiation on Coated Materials for Tritium Barrier	University of Science and Technology Beijing	Somei Ohnuki	Kiyohiro Yabuuchi
Proposal based project	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	Keio University	Takao Imai	Takashi Nagata
Proposal based project	ZE2020B-15	Nondestructive evaluation of residual elastic strain distribution around the interface between non-irradiated areas and ion irradiated area	Hokkaido University	Tamaki Shibayama	Tatsuya Hinoki
Proposal based project	ZE2020B-16	Development of multi-channel spectroscopic system for turbulence measurement	Kyushu University	Akihide Fujisawa	Shinsuke Ohshima
Proposal based project	ZE2020B-17	Analysis of the mechanism of ultrasound-enhanced cellular internalization of bioactive molecules	Okayama University	Takashi Ohtsuki	Eiji Nakata
Proposal based project	ZE2020B-18	Development of a new scheme concerning shock acceleration of ions and experiment utilizing a structured medium	Kyoto University	Ryutaro Matsui	Kazunari Matsuda
Proposal based project	ZE2020B-19	Development of reduced activation high entropy materials for high energy reactor	Hokkaido University	Naoyuki Hashimoto	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-20	Development of HeI image reconstruction technique using neural network in Heliotron J	Kagawa College	Hayato Kawazome	Shinichiro Kado

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Proposal based project	ZE2020B-21	Time-series data analysis of Heliotron-J plasma by statistical modeling	Research Institute for AppliedMechanics ,Kyushu University	Shigeru Inagaki	Kazunobu Nagasaki
Proposal based project	ZE2020B-22	Study on impurity behaviors and materials corrosion in liquid metals for advanced nuclear systems	Seoul National University	Takuji Oda	Juro Yagi
Proposal based project	ZE2020B-23	Mechanical Property of Ion-irradiated RAFMs by Ultra Micro-tensile Test	National Institutes for Quantumand Radiological Science andTechnology	Masami Ando	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-24	Clarification on retention processes of He and H in ion irradiated pyrochlore oxides	Meijo University	Bun Tsuchiya	Tatsuya Hinoki
Proposal based project	ZE2020B-25	Strengthening and improvement of ductility by precipitation control for low-activation vanadium alloy for fusion reactors	National Institute for FusionScience	Takuya Nagasaka	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-26	Analysis of reaction mechanism of haloacid dehalogenase	Nagahama Institute of Bio-Science and Technology	Takashi Nakamura	Takashi Morii
Proposal based project	ZE2020B-27	Effect of hydrogen on surface hardness in ion-irradiated tungsten	Kagoshima University	Koichi Sato	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-28	A study of irradiation-induced precipitation on tungsten-rhenium alloys	Tohoku University	Takesh Miyazawa	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-29	Irradiation field dependence of microstructural evolution of ferritic steel during irradiation	National Institutes for Quantumand Radiological Science andTechnology	Yoshiyuki Watanabe	Kazunori Morishita

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Proposal based project	ZE2020B-30	Analysis of radiation induced nano-clusters in RPV steels	Research Institute for Applied Mechanics, Kyushu University	Hideo Watanabe	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-31	Study of periodic nanostructures on semiconductors produced by mid-infrared free electron lasers	Kyoto University	Masaki Hashida	Heishun Zen
Proposal based project	ZE2020B-32	Preparation and characterization of the enzyme immobilization by entrapment within a bio-polymer hydrogel network.	Faculty of science at Sriracha, Kasetsart University, Thailand	Tongsai Jamnongkan	Tomijiro Hara
Proposal based project	ZE2020B-33	Study of nanomaterials toward efficient and high-performance energy conversion	Hosei University	Satoru Konabe	Yuhei Miyauchi
Proposal based project	ZE2020B-34	Control of electric current and heat flux using single particle diodes toward energy harvesting	University of the Ryukyus	Nobuaki Yonekura	Yuhei Miyauchi
Proposal based project	ZE2020B-35	Study of Hydrogen Isotope Separation Technology by Molten Salt	Hokkaido University	Hisayoshi Matsushima	Toshiyuki Nohira
Proposal based project	ZE2020B-36	Development of the crystalline cellulose degradation system consisting of the psychrophilic fungus-type hybrid enzymes.	Health Sciences University of Hokkaido	Masataka Horiuchi	Takashi Nagata
Proposal based project	ZE2020B-37	Developmental research on microbial community structure analysis and biopest applications in medicinal plant cultivation	Shimane University	Makoto Ueno	Tomijiro Hara
Proposal based project	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	University of Malaya, Malaysia	Nasrudin Abd Rahim	Hideaki Ohgaki

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Proposal based project	ZE2020B-39	Study for electron-hole plasma on semiconductor surface at mid-infrared region	National Institutes for Quantum and Radiological Science and Technology	Keigo Kawase	Heishun Zen
Proposal based project	ZE2020B-40	Development of high-speed camera image analysis method using magnetic field information	Bauhutte Co. Ltd.	Nobuhiro Nishino	Shinichiro Kado
Proposal based project	ZE2020B-41	Enhancement of High Temperature Mechanical Properties on the ODS Ferritic Steels for Next generation Nuclear and Thermal Power Systems	Pukyong National University in PUSAN	Sanghoon NOH	Kiyohiro Yabuuchi
Proposal based project	ZE2020B-42	R&D of BN/CNTs heat dissipation sheets as heat transfer II	National Institute for Materials Science	Kazuya Shimoda	Tatsuya Hinoki
Proposal based project	ZE2020B-43	Feasibility and lithium analysis on the anion doped oxide - organic nano composite for energy utilization and lithium	National Institute for Fusion Science	Sadatsugu Takayama	Juro Yagi
Proposal based project	ZE2020B-44	Transport analysis for neutral beam heated plasmas in advanced heliotron configuration	University of Tsukuba	Masayuki Yoshikawa	Shinji Kobayashi
Proposal based project	ZE2020B-45	A small-molecule-based technology for live-cell imaging of energy metabolism.	Kyoto University	Shinichi Sato	Takashi Morii
Proposal based project	ZE2020B-46	Development of RNA editing technology for gene regulation involved in an intracellular energy production and utilization	Fukuoka University	Masatora Fukuda	Takashi Morii
Proposal based project	ZE2020B-47	Processing of organic-inorganic hybrid materials by infrared free electron laser	Tokyo University of science	Jun Fujioka	Heishun Zen

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Proposal based project	ZE2020B-48	On-site, rapid, qualitative DNA/RNA detection in resource-poor settings	Hirosaki University	Masaki Hagihara	Takashi Morii
Proposal based project	ZE2020B-49	Investigation of current-induced electronic phase in devices based on strongly correlated electron systems	Kyoto University	Hideki Narita	Tatsuya Hinoki
Proposal based project	ZE2020B-50	Behavior of hydrogen on the surface of fusion reactor materials by computer simulations.	University of the Ryukyus	Hiroto Iwakiri	Kazunori Morishita
Proposal based project	ZE2020B-51	Formation and crystalline characterization of periodic nanostructures on semiconductor substrates irradiated by intense mid-infrared laser pulses	Osaka University	Norimasa Ozaki	Heishun Zen
Proposal based project	ZE2020B-52	Development of valleytronic devices using the layered material and nitride semiconductor	Ritsumeikan University	Shinichiro Mouri	Kazunari Matsuda
Proposal based project	ZE2020B-53	Supramolecular assembling regulation of bacterial cell division protein FtsZ on DNA nanostructures	Hokkaido University	Akira Onoda	Eiji Nakata
Proposal based project	ZE2020B-54	Development of an short nucleic acid that regulate transient protein interactions	Kumamoto University	Yousuke Katsuda	Takashi Morii
Proposal based project	ZE2020B-55	Identification and characterization of novel antimicrobial cyclic lipopeptides derived from Bacillus sp.	Tokyo University of Agriculture	Kenji Yokota	Tomijiro Hara
Proposal based project	ZE2020B-56	Study of basic properties of fine bubbles in the liquid	Kyoto University	Yoshikatsu Ueda	Takashi Morii

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Proposal based project	ZE2020B-57	Novel synthesis process of ammonia at ambient condition	Kyoto University	Takaya Ogawa	Masato Katahira
Proposal based project	ZE2020B-58	High-Temperature Raman Spectroscopic Analysis of Silicon Coordination in Molten Salts for the Production of Solar-Grade Silicon	Kyoto University	Koji Yasuda	Toshiyuki Nohira
Proposal based project	ZE2020B-59	Electrochemical preparation of Si-based energy materials in molten salt and their characterization	Westlake University	Xiao YANG	Toshiyuki Nohira
Joint usage of facilities	ZE2020C-01	Controll of inner structure of apatite microcapsules fabricated by biomimetic method	Kyoto University	Takeshi Yabutsuka	Tatsuya Hinoki
Joint usage of facilities	ZE2020C-02	Determination of the free energy of the late-blooming phase (2)	Kumamoto University	Yoshitaka Matsukawa	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2020C-03	The effect of ion beam irradiation on the properties of heavily doped nanocrystals	Kyoto University	Masanori Sakamoto	Tatsuya Hinoki
Joint usage of facilities	ZE2020C-04	Study on neutron imaging techniques for inspection of fusion blanket modules with DD neutron source	National Institute for Fusion Science	Teruya Tanaka	Keisuke Mukai
Joint usage of facilities	ZE2020C-05	Analysis of electroretinograms from the crayfish's compound eyes stimulated by mid-infrared of KU-FEL	Nihon University	Fumio Shishikura	Hideaki Ohgaki
Joint usage of facilities	ZE2020C-06	Quantification of cell-surface markers using enzyme-antibody conjugates	Kobe Pharmaceutical University	Ippe Takashima	Eiji Nakata

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Joint usage of facilities	ZE2020C-07	Mechanism of Cycle Performance Improvement for Mechanochemically Activated LiMn2O4	Kyoto University	Shigeomi Takai	Takashi Morii
Joint usage of facilities	ZE2020C-08	Study on emission process of scintillation material using the one electron beam and evaluation of scintillation properties for darkmater search	Tohoku University	Shunsuke Kurosawa	Hideaki Ohgaki
Joint usage of facilities	ZE2020C-09	Study of experiment and simulation for the synergistic effect of displacement damage and helium on irradiation hardening behavior	Japan Atomic Energy Agency	Eiichi Wakai	Kiyohiro Yabuuchi
Joint usage of facilities	ZE2020C-10	Deuterium desorption from heavy ion irradiated tungsten using isothermal desorption method	National Institute for Fusion Science	Naoko Ashikawa	Tatsuya Hinoki
Joint usage of facilities	ZE2020C-11	Depth profile measurements of hydrogen isotopes of damaged tungsten	National Institute for Fusion Science	Miyuki Yajima	Tatsuya Hinoki
Joint usage of facilities	ZE2020C-12	Development of laser nanoprocessing technique by using short-range surface plasmons excited with few-cycle laser pulses	Tokyo University of Agriculture and Technology	Godai Miyaji	Kazunari Matsuda
Joint usage of facilities	ZE2020C-13	Carbon dioxide gas fixation by laser irradiation response to calculus forming bacteria.	Nihon University	Tetsuro Kono	Hideaki Ohgaki
Joint usage of facilities	ZE2020C-14	Statistical analysis on edge turbulence fluctuation data in a toroidal plasma	Research Institute for Applied Mechanics ,Kyushu University	Yoshihiko Nagashima	Shinsuke Ohshima

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Research meetings	ZE2020D-01	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
Research meetings	ZE2020D-02	Safety enhancement of nuclear power system by advanced ICT technology	Kyoto University	Hidekazu Yoshikawa	Kazunori Morishita