

## Area1 International Symposium on Nitride Semiconductors (CIRFE Symposium)

11/5	10:15	10:45	Invited	Tomoyosh	Mishima	High Breakdown Voltage Vertical-Structure GaN p-n Junction Diodes
	10:45	11:00	1218	Shun	Lu	Reduction of Specific Contact Resistance on p-type GaN by Thermal Annealed Mg Layer
	11:00	11:15	1026	Naoki	Inoue	First-principles Calculations between Screw Dislocation with Mg, H Impurities on GaN
	11:15	11:30	1176	Susumu	Sasaki	Direct Observation of Spontaneous Polarization in Freestanding GaN Substrate
	11:30	11:45	1080	Akihiro	Shimada	Operando Measurement of Local Piezoelectric Lattice Strain in AlGaIn/GaN HEMT Devices by Synchrotron
	11:45	12:00	1115	Takuma	Doi	Schottky barrier height lowering for metal/n-type 4H-SiC contacts using low work function metals
	15:00	15:30	Invited	Yutaka	Mikawa	Acidic Ammonothermal Growth of Bulk GaN
	15:30	15:45	1003	Markus	Pristovsek	AlPN on GaN: A new member of the III-Nitride family
	15:45	16:00	1133	Hiroki	Shimizu	High fracture toughness aluminum nitride (AlN) by AlN-whiskers addition and tape-cast
	16:00	16:15	1143	Zheng	Ye	Comparative Analysis of Decomposition of TMGa and TEGa for the Clarification of the Mechanism of Unintentional Carbon Incorporation in GaN MOVPE
	16:30	17:00	Invited	Filip	Tuomisto	Analyzing the electrical activity of cation and nitrogen vacancies in AlGaIn and AlGaIn/GaN interfaces
	17:00	17:15	1082	Kieu My	Bui	A Computational Approach of Epitaxial Growth of Gallium Nitride
	17:15	17:30	1163	Toru	Akiyama	Direct approach for calculating individual energy of step edges on polar AlN(0001) and GaN(0001) surfaces using density functional calculations
	17:30	17:45	1160	Akira	Kusaba	Tuning of Reaction Rate Constants for Trimethylgallium Decomposition by Multiobjective Genetic Algorithm with High-Resolution Mass Spectrometry Data
	17:45	18:00	1159	Yoshihiro	Kangawa	Theoretical approach to unintentional oxygen doping during MOVPE of GaN:Mg and AlN:Mg
11/6	9:00	10:00	Plenary	Chris G.	Van de Walle	Exploring (and exploiting) the physics of ultra-wide-bandgap nitrides
	10:00	11:00	Plenary	Tomás	Palacios	New Semiconductor Materials: The Critical Infrastructure to Build the Future
	11:15	11:30	1215	Masahiro	Horita	Investigation of Electron Traps in Homoepitaxial n-type GaN Grown by MOVPE
	11:30	11:45	1190	Meguru	Endo	Nitrogen-displacement-related Hole Traps in N-type GaN with Electron Beam Irradiations in the Energy Range from 100 to 400 keV
	11:45	12:00	1210	Kensuke	Sumida	Isothermal Annealing Study on Mg-implanted Homoepitaxial GaN
	12:00	12:15	1107	Ryosuke	Sakurai	First Principles Studies on Atomic and Electronic Structures of VGa-VN divacancies.

11/6	13:30	14:00	Inited	Masayoshi Yamamoto	SiC/GaN Hybrid Soft Switching Inverter for Electric Vehicle Applications
	14:00	14:30	Inited	Kazuhiro Umetani	Parasitic Inductance Design for High-Power Gallium Nitride Field-Effect Transistors
	14:30	14:45	1058	Sihoon Choi	Feasibility Analysis of Designing Coupled Inductors Using Powder Core in Multiphase Converter
	14:45	15:00	1189	Daisuke Arai	The Switching Characteristics of Cascode Connected GaN-PSJ-FET
	15:15	15:45	Inited	Satoshi Kamiyama	Room-temperature operation of nitride-based multi-quantum shell (MQS)/nanowire lasers
	15:45	16:15	Invied	Åsa Haglund	Membrane-Based Light-emitters from the Blue to the Ultraviolet Wavelength Regime by
	16:15	16:30	1028	Kengo Nagata	Electrochemical Etching
	16:30	16:45	1061	Taichi Matsubara	Sputtered polycrystalline MgZnO as transparent electrode in AlGaN-based  homojunction tunnel junction deep
	16:45	17:00	1209	Pietro Pampili	Nitrogen-polar GaN and AlN templates for light detection application
11/5	13:30	14:30	Poster		
			1173	Keito Aoshima	Hole traps formed by gamma-ray irradiation in homoepitaxial p-type GaN
			1180	Takuya Nakashima	Time evolution of crystallographic defects in Mg ion-implanted GaN during annealing
			1213	Wentao Cai	High In-content InGaN Platelet as Underlayer for Light-Emitting Diodes toward Long Wavelength Application
			1152	Toshiki Achiwa	Investigation of High Frequency and High Voltage Inverter with GaN-HEMT/SiC-JFET Cascode Device
			1188	Haruki Hirasawa	"A Study of UV-LEDs Driving Curcuit Including Degration Detection of UV-LEDs and Curcuit"

## Area 2 International Symposium on Nano material-based Electronics (CIRFE Symposium)

11/5	10:30	11:15	<b>Keynote</b>	<b>Kaustav Banerjee</b>	<b>Sustaining Moore's Law (and Beyond) with 2D Materials</b>
	11:15	11:45	Invited	Kosuke Nagashio	Two-Dimensional Tunnel FET
	11:45	12:15	Invited	Dong-ming Sun	MXene film for optoelectronic integration
	12:15	12:30	1105	Shiyu Zhang	Optoelectronic properties of pseudo-direct transition $\text{In}_{1-x}\text{Ga}_x\text{Sb}$ -GeSn and heterostructures composed of $\text{In}_{1-x}\text{Ga}_x\text{Sb}$ -GeSn and $\text{In}_{1-x}\text{Ga}_x\text{Sb}$ -SiGe thin layers
	13:30	14:30	Poster		
	14:30	15:15	<b>Keynote</b>	<b>Youfan Hu</b>	<b>Carbon Nanotube-Based Flexible Electronics</b>
	15:15	15:45	Invited	Jana Zaumzeil	Doping of Sorted Semiconducting Single-Walled Carbon Nanotubes for Low-Power Circuits
	16:00	16:30	Invited	Albert Nasiblin	Carbon Nanotubes: from Synthesis to Applications
			Invited	Yutaka Ohno	Design and fabrication of flexible analog/digital mixed-signal circuits based on carbon nanotube thin film transistors
	17:00	17:15	1092	Tetsuya Tohei	Crystalline microstructure and electric property of rutile $\text{TiO}_2$ single crystal memristor
	17:15	17:30	1165	Fugo Nanataki	First-principles studies on the effects of O atoms in the substrate on the oxidation of a vertical Si nanopillar
11/5	13:30	14:30	<b>Poster</b>		
			1036	Wangzhen Zhao	The Study of Interface Layer In Hybrid Memory Layer for Thermally Assisted STT-MRAM Cells
			1116	Masanori Endo	A correlation between crystallinity of single-walled carbon nanotubes and temperature coefficient of Raman shift frequency
			1139	Daiki Oshima	Fabrication of epitaxially grown $\text{p}^+\text{-Mn}$ type CoZnMn film
			1175	Adha Sukma Aji	CNT/ $\text{HfO}_2$ /CNT Memristor for Neuromorphic Computing
			1179	Rikizo Yano	Magnetically Doped Topological Insulator and its Superconducting Proximity Effects
			1181	Tomoki Hori	Property Control of Carbon Nanotube Thin-Film Transistors Using Passivation Layer Deposited by Atomic Layer Deposition

### Area 3 International Symposium on Materials and Process Informatics (CIRFE Symposium)

###	10:15	10:45	Invited	Ichiro	Takeuchi	Autonomous Combinatorial Experimentation for Materials Discovery
	10:45	11:15	Invited	Toyohiro	Chikyo	Trends in Data-Driven Materials Development and Contribution to the Sustainable Development Goals
	11:15	11:30	1110	Wancheng	Yu	Three-Dimensional Simulation of Flow in a SiC Solution Growth Furnace
	11:30	11:45	1124	Kentaro	Kutsukake	Bayesian optimization of process conditions for grinding process of SiC
	11:45	12:00	1138	Takashi	Nakano	Practical Cascade Bayesian Optimization for optimization of solar cell process
	12:00	12:15	1126	Takuto	Kojima	Data Augmentation Approach to Improve Crystal Orientation Estimation Model

#### 13:30 14:30 Poster

1049	Yuto	Takehara	The Bayesian Optimization for a High- and Uniform-Crystal Growth Rate in the Top-Seeded Solution Growth Method Using
1086	Shoya	Ito	Development of Physically Informed Neural Network Potential
1147	Suguru	Takagi	Noise Reduction of a time-series of High-Resolution STEM images by Tensor Decomposition and Simulation of Dopant Detection
1187	Can	Zhu	Application of C-face dislocation conversion to 6-inch SiC solution crystal growth
1112	Motoji	Sakai	Learning Organo-Transition Metal Catalysis Using Graph Neural Networks

#### Area 4 International Symposium on Energy Harvesting Technologies (CIRFE Symposium)

11/4	13:10	14:10	Plenary	Hiroki Kuwano	Piezoelectric energy harvesting
					break
	14:30	15:00	Invited	Tomomi Uchiyama	Development of a Self-powered Wireless Sensor Node to Measure the Water Flowrate by Using a Turbine Flowmeter
	15:00	15:30	Invited	Takanobu Watarai	Scaling-up the Power Generation Capacity of Si-based Micro Thermoelectric Device
	15:30	15:45	1142	Sota Koike	Design of a planar-type uni-leg SiGe thermoelectric generator
	15:45	16:00	1088	Kohei Ishikawa	Searching for materials with high temperature coefficient of electrode potential for thermal energy conversion using machine learning
					break
	16:15	16:45	Invited	Masahiro Nomura	Planar-type nanophononic Si thermoelectric energy harvesters
	16:45	17:15	Invited	Hiroshi Toshiyoshi	Silicon Oxide Electret for MEMS Vibrational Energy Harvester
	17:15	17:30	1174	Yoshiki Ohata	Effects of carbon atoms on the reliability of the potassium ion electret used in vibration-powered generators
11/5	13:30	14:30	Poster		
			1186	Atsushi Kawaguchi	Simple and Highly Efficient Intermittent Operation Circuit for Triboelectric Nanogenerator toward Self-Powered Wearable Electronics
			1206	Masahiro Matsuoka	Stretchable, transparent in-plane dual-electrode structured triboelectric nanogenerator
			1217	Kotaro Wada	Movement of small objects tethered to grid in uniform flow and its turbulence properties.

## Area 5 Nanomaterials

11/6 11:15 11:45 Invited Ahmed A. El-Genc Nanomagnets From Lab. To Fab.

11:45	12:15	Invited	Jacqueline Krim	Tribotronic control and energy storage attributes of water-based ceramic nanosuspensions
12:15	12:30	1002	Shunta Harada	Thermal conduction in titanium oxide natural superlattice with an ordered arrangement of coherent interfaces
13:30	14:00	Invited	Tsukasa Torimoto	Solution-Phase Preparation of AgInS <sub>2</sub> -Based Semiconductor Nanocrystals and Their Tunable Photoluminescence
14:00	14:30	Invited	Toru Murayama	Recent progress of nanoparticulate gold catalysts and their application for air purification
14:30	15:00	Invited	Masanobu Higashi	Development of water splitting system using metal sulfide photocatalyst under visible light irradiation
15:00	15:15	1123	Lidong Zhang	Optimization of crystallization conditions for the enlargement of the size of DNA-functionalized nanoparticles crystals
15:15	15:30	1075	Rongshi Zhang	Deformation of nano-tendrils bundles at high temperature by annealing
15:30	15:45	1155	Miho Tagawa	DNA-guided crystallization of nanoparticles: the effect of solvent composition on crystal structure

11/5 13:30 14:30 Poster

1017	Ryo	Sasai	Tb <sup>3+</sup> -Doped Layered Double Hydroxide with Luminescent Properties Depending on Interlayer Anion Species
1018	Masayoshi Ito		Enhancement of spin-orbit torques by the change of uniaxial in-plane magnetic anisotropy in Py/Pt bilayers on a single crystal Y-Cut LiNbO <sub>3</sub> substrate.
1040	Yuta	Ohno	Textured growth of Co-Fe-Ga alloy films via topotactic transformation from highly oriented precursor and spinel oxide
1108	Daigo	Shimizu	Characterization of Magnetic Skyrmions and Antiskyrmions by Lorentz Transmission Electron Microscopy
1117	Maasa	Yokomizo	DNA-functionalized colloidal crystals for encapsulating macromolecules

## Area 6 Advanced Measurements

11/5	10:15	10:45	Invited	Hans Nembach	Dzyaloshinskii–Moriya Interaction in Magnetic Multilayers
	10:45	11:15	Invited	Hiroki Ueda	Ultrafast dynamics and coupling of magnetic sublattices in room-temperature multiferroic hexaferrite
	11:15	11:45	Invited	Takuo Ohkouchi	Spin dynamics analysis by time-resolved photoemission electron microscopy
	11:45	12:00	1220	Toshio Miyamachi	Resolving the spin polarization and magnetic domain wall width of (Nd,Dy) <sub>2</sub> Fe <sub>14</sub> B with spin-polarized scanning tunneling microscopy
	12:00	12:15	1094	Takafumi Ishida	Sub-microsecond Electron Imaging using a Time-resolved Transmission Electron Microscope with an SOI Pixel Detector
	12:15	12:30	1004	Makoto Kuwahara	Time-resolved measurement in ultrafast transmission electron microscopy
	14:30	15:00	Invited	Peter Amann	Ambient Pressure XPS for Studying Catalytic Reactions under Operando Conditions
	15:00	15:15	1067	Duyen Pham	Unveiling redox-active structure in humin by synchrotron radiation-based-ray absorption near edge structure
	15:15	15:45	Invited	Kaname Yoshida	Problems for direct observations of chemical and physical reactions with electron microscopes
			break		
	16:00	16:30	Invited	Shigehito Isobe	Study on hydrogen storage materials by means of TEM
	16:30	16:45	1114	Akihiro Shichi	Determination of displacement fields by phase retrieval of electron rocking curves with total variation regularization
	16:45	17:00	1192	Hirokazu Tamaki	Reference-free Distortion Measurement and Correction for TEM Image
	17:00	17:15	1029	Jun Yamasaki	Quantitative Analysis of Intensity Attenuation with Increasing Thickness in TEM and STEM Images
	17:15	17:30	1219	Tomotaka Miyazawa	Burgers vector analysis of dislocations in cell structure developed during cyclic deformation of [−111] Cu single crystals: Application of virtual scanning transmission electron
	17:30	17:45	1093	Yoshimasa Takahashi	Direct observation of creep crack tips in a single-crystalline Ni-based superalloy

## 11/5 13:30 14:30 Poster

1006	Yuuki Uesugi	Toward the realization of innovative optical elements utilizing nanofilms and laser light in the field of electron microscopy and matter wave optics
1031	Kojiro Nakakura	Single-Shot Imaging in TEM with a High-Charge Bunched Beam
1059	Masato Furui	Dynamic Observation of Reversible Phenomena in A Time-resolved Transmission Electron Microscope using An Optical-frequency Stabilization Technique
1119	Sae Okawara	Investigation of Nonuniform Composition inside ALD-AIO <sub>x</sub> Film by SEM Imaging under Variable Acceleration Voltage Conditions

## Area 7 Nuclear Emulsion Technology

11/4	14:30	15:00	Invited	Toshiyuki	Nakano	
	15:00	15:30	Invited	Hiroki	Rokujo	Nuclear Emulsion Production Facilities in Tokai National Higher Education and Research System for Large-scale Emulsion Experiments
	15:30	16:00	1062	Osamu	Sato	DsTau : tau neutrino flux measurement through proton tungsten interactions.
	16:30	17:00	1039	Koichi	Kodama	Digital Archives for Nuclear Emulsion Data – Data in past experiments in Cosmic-ray and Accelerator physics –
11/5	10:00	10:30	Invited	Shigeki	Aoki	GRAINE Project: Balloon-borne Gamma-ray Telescope with Nuclear Emulsion
	10:30	11:00	1052	Atsushi	Iyono	Desensitized nuclear emulsions for charge identification of cosmic ray heavy nuclei in GRAINE experiments.
	11:00	11:30	Invited	Kunihiro	Morishima	Current status of ScanPyramids – Cosmic ray muon imaging of Khufu's Pyramid with nuclear emulsions
	11:30	12:00	Invited	Seigo	Miyamoto	Three-dimensional density image of Izu-Omuroyama volcano by a first pilot multi-directional muography
	14:30	15:00	Invited	Kazuma	Nakazawa	Development for Study of Double Hypernuclei using Nuclear Emulsion
	15:00	15:30	Invited	Khin Than Tint		Analysis of a Single $\Lambda$ Hypernucleus Event in Nuclear Emulsion of J-PARC E07 Experiment
	15:30	15:50	1156	Aung Nay L Nyaw		Lambda-Lambda Binding Energy in Light Double-Lambda Hypernuclei in the J-PARC E07 Experiment
	15:50	16:10	1021	Ayumi	Kasagi	Development of a machine learning model using physics simulation and GAN for detection of events in nuclear emulsion
	16:10	16:30	1079	Koji	Hayashi	Development of high-speed reading of nuclear emulsion and three-dimensional track detection method
	16:30	16:50	1095	Phyo Myat Lin		Study of Energy Uncertainties Concerning with the Emulsion Density Error and the Range Straggling
	16:50	17:10	1120	Naoki	Nishimura	Development of image analysis method to efficiently search for double hypernuclei.
11/6	11:00	11:20	1011	Masahiro	Komatsu	Status of the CERN SND@LHC experiment and its physics cases
	11:20	11:40	1016	Tsutomu	Fukuda	NINJA Experiment: Neutrino research program with Nuclear emulsion at J-PARC
	11:40	12:00	1019	Tomoko	Ariga	FASERnu status and first neutrino interaction candidates at the LHC
	14:00	14:20	1013	Mitsuhiro	Kimura	Investigation of the mechanism of proton boron capture therapy (PBCT)
	14:20	14:40	1027	Takafumi	Asai	The New Measurement Method for Laser-accelerated Sub-GeV-class Protons using Multiple Coulomb Scattering in an Emulsion Cloud Chamber
	14:40	15:00	1055	Takuya	Shiraishi	Development of New Tracking Detector with Ultra Fine-grained Nuclear Emulsion for sub-MeV Neutron Measurement



15:00	15:20	1102	Naotaka	Naganawa	A high spatial resolution cold/ultracold neutron detector using fine-grained nuclear emulsion
15:20	15:40	1111	Naoto	Muto	Measurement of the Spatial Distribution of Quantized Ultracold Neutrons in the Earth's Gravitational Field by a High Spatial Resolution Detector using a Fine-grained Nuclear Emulsion
15:40	16:00	1161	Abdul	Muneem	Development of precise Neutron imaging technique using Nuclear Emulsion and Machine Learning

11/5 13:30 14:30 Poster

1022	Masato	Kanasaki	Measurement of Laser-accelerated ions using active and passive ion detector systems
1023	Takato	Nakagawa	Development of the simultaneous energy spectrometer for laser-accelerated ions and electrons
1032	Akira	Nishio	Development of a non-destructive inspection method for trees using cosmic rays
1034	Hiroataka	Hayashi	Search for unknown physical phenomena using a high-sensitivity large cloud chamber
1047	Takashi	Kaji	Automatization of Cluster Size Measurement System for Laser-Driven Ion Acceleration
1091	Shoji	Mikado	A new application of nuclear emulsion film for shifters in the NINJA experiment.
1122	Hiroyuki	Tanabe	Analysis Method of Laser-accelerated Sub-GeV-class Proton Tracks in Emulsion Cloud Chamber using Deep Learning Technique
1166	Yosuke	Suzuki	Analysis status of Physics Run a in NINJA experiment
1196	Ikuya	Usuda	GRAINE Project: Development Status of Large-scale Nuclear Emulsion Gamma-ray Telescope for Next Balloon Experiment
1222	Nobuko	Kitagawa	Observation of cosmic ray with emulsion chambers on the ground

## Area 8 & 9 Confined Space / Energy Related Materials

11/4	14:30	15:00	Invited	Katsuro Hayashi	Na-Ion Conducting Oxides Prepared by Spark Plasma Sintering: Investigation of Sodium Lanthanum Zirconate Perovskite
	15:00	15:15	1136	Keisuke Yoshikawa	Room temperature operation and high stability of an all-solid-state lithium battery fabricated by cold pressing using soft Li <sub>2</sub> OHB <sub>r</sub> solid electrolyte
	15:15	15:30	1200	SHUFAN JIA	Glass-Ceramic Process of NASICON-Type Na <sub>3</sub> Ti <sub>2</sub> (PO <sub>4</sub> ) <sub>3</sub> as Anodes for Sodium Ion Battery
	15:30	16:00	Invited	Yuichi Ikuhara	Atomic Structures of Interface and Surface in Battery Related Materials
	16:15	16:30	1090	Tomoya Asayama	AC Impedance Analysis of Ionic Conduction in Pyrophosphate-based Cathode Materials for Sodium-ion Batteries
	16:30	16:45	1134	Norikazu Ishigaki	Crystal Structure and Properties of Lithium-Ion conducting LiTa <sub>2</sub> PO <sub>8</sub>
	16:45	17:15	Invited	Masaaki Kitano	Development of Novel Solid Catalysts with Functional Anion Sites for Ammonia Synthesis
11/4	15:00	15:30	Invited	Minoru Osada	The Rise of 2D Architectonics
	15:30	15:45	1184	Eisuke Yamamoto	Atomically Thin Nanosheets Grown at Confined Nanospace of Solid Surfactant Crystals
	16:00	16:30	Invited	Hiroaki Imai	Synthesis and application of metal oxide quantum dots in supermicroporous silicas
	16:30	16:45	1172	Shinichiroh Iwamura	Nano-Fibrous Microporous Carbons Prepared via Cl <sub>2</sub> Treatment of SiC/CNF Nanocomposites
	16:45	17:00	1051	Hirofumi Tsunematsu	Synthesis and optical properties of 2D tungsten oxide polymorphs
11/5	17:15	17:45	Invited	Kiyoharu Tadanaga	Preparation of sulfide-based lithium ion conductive solid electrolyte by solution process
	10:45	11:15	Invited	Atsushi Shimojima	Preparation of Organosiloxane-based Nanoporous Materials Using Silica Nanospheres as Template
	11:15	11:30	1078	Ki Nam Byun	Dielectric and Energy Storage Performances of PVDF-based Composites with 2D High- $\kappa$ Nanosheets
	11:30	11:45	1199	Makoto Kobayashi	Hydrothermal synthesis and dielectric properties of 1D titania nanocrystals
	11:45	12:15	Invited	Jun Shen	Nanoporous Aerogels and Their Application in Energy Saving and Environment Protection
	14:45	15:15	Invited	Masahide Takahashi	Infrared crystallography for evaluation of framework and linker orientation in metal-organic framework films
	15:15	15:30	1145	Daiki Kazaoka	Transparent Organic-Inorganic Hybrid Aerogels Reinforced by TEMPO-Oxidized Cellulose Nanofibers
	15:30	15:45	1083	Tomoki Takeno	Synthesis of Sr-Cr-Fe Hydrogarnet Polyhedrons and Thermal Conversion to SrCr <sub>1-x</sub> Fe <sub>x</sub> O <sub>3-<math>\delta</math></sub> Perovskite

15:45	16:15	Invited	Makoto Ogawa	Stabilization of organic species by the confinements into layered clay minerals
16:30	17:00	Invited	Shin Mukai	Synthesis of High-Capacity Sheet Cathodes for Lithium-Air Batteries by Combining CNTs/CNFs Synthesized by the LPI Technique with Various Fibrous Carbons
17:00	17:30	Invited	Nicolas Brun	Carbon Monoliths with Multi-Scale Porosity for CO <sub>2</sub> Capture and Bioconversion
17:30	17:45	1183	Rimeh MIGHRI	Gas Sorption Via BN(C)

**11/5 13:30 14:30 Poster**

1046	Mitsuhiro	Ishida	Effects of Hybridization with a Linear Polymer on Mechanical Properties for Porous Polyimide Monoliths
1069	Hikaru	Sugimoto	Controlled synthesis of perovskite-based oxynitride nanosheets
1070	Kosuke	Fujihara	Amorphous silica nanosheets exfoliated from nonionic surfactant-silica lamellar hybrid
1071	Kota	Nakazaki	Dielectric/ferroelectric responses in Dion-Jacobson layered perovskites and their derivative nanosheets
1072	Tsubasa	Tasaka	Study on synthesis of cationic bismuth oxyfluoride nanosheets
1118	Akiko	Suzuki	2D platinum nanosheets derived from inorganic-organic hybrid surfactant crystals
1170	Navarut	Paengjun	Formation of BiOX (X=Cl and Br) in A Mesoporous Silica by The Infiltration of Bi Salts and The Subsequent Reaction with HX Vapor
1185	Rungthip	Kunthom	Preparation of Well-Defined Hexagonal Platy Hollow Silica Particles by Deposition of Silica on Brucite Particle
1007	Takayuki	Ishibashi	Magnetic anisotropy of highly bismuth-substituted rare-earth (Y, Pr, Nd, Sm and Er) iron garnet thin films
1041	Hideki	Kato	Z-scheme photocatalytic water splitting using perovskite-type oxynitride as oxygen-evolving photocatalysts
1178	Taya	Saothayanun	Formation of All-Inorganic Halide Perovskites by Mechanochemical Reaction between Layered Cesium Titanate

## Area 10 Energy Conversion Systems

11/4	14:30	15:00	Invited	Guillermo Paniagua		Turbine Strategies for Detonation Based Combustors: Axial or Radial, subsonic or supersonic, bladed vs bladeless
	15:00	15:30	Invited	Terrence R. Meyer		High-Speed Optical Diagnostics for Investigation of Combustion Physics in Rotating Detonation Engines
	15:30	15:45	1211	Akira	Kawasak	A data-driven approach to prediction of characteristic length in diffracted detonation wave
	15:45	16:00	1212	Noboru	Itouyama	State-of-art monopropellant development base on the combination of high-energy-density salts and Deep eutectic phenomena
	16:00	16:15	1205	Takashi	Sawada	The Study of Cooling Design of Power Conversion Circuit including GaN-HEMTs
	16:30	17:00	Invited	Somrat Kerdsuwan		Thermodynamic Modelling of 1,000 Ton per Day State-of-the-Art Waste Incineration Plant with Sophisticated Air Pollution Control Unit using Aspenplus®
	17:00	17:15	1066	Hui	Zhang	Degradation behavior of solid oxide fuel cells with synthetic biomass gasification gas
	17:15	17:30	1077	Yasuaki	Ueki	Ash Particle Properties during Combustion or Gasification of Coke
	17:30	17:45	1127	Ryo	Yoshiie	Oxidation and capturing performances of gaseous mercury in flue gas using pulverized DeNOx catalyst
	17:45	18:00	1158	Yi	Xiong	Evaluation of a 650V SiC-MOSFET Efficiency Characteristics in 13.56MHz Half-bridge Resonant Inverter
11/5	13:30	14:30	Poster			
			1010	Akira	Nishimur	Effect of Pressure Difference Provided for Hydrogen Permeation Membrane on Performance of Biogas Dry Reforming
			1014	Kotaro	Takamur	Numerical Study on the Flow and Performance of a Savonius Hydraulic Turbine with S-shaped Blades
			1030	Yuxin	Wang	Effect of Temperature and Gasifying Agents on Gasification Behavior of Biomass Char
			1043	Rino	Okochi	Analysis and Modeling of Conducted Noise in High Frequency LLC Converter
			1064	Kento	Yamanak	Emissions of environmental pollutants from oxy-coal combustion in fluidized bed
			1065	Soki	Mizoguch	Combustion rate analysis of woody biomass including volatile matter and fixed carbon
			1073	Masaya	Uemoto	Elucidation of Gasification Behavior of Biomass Char by Thermogravimetric Analysis
			1074	Ayato	Suzuki	NPC-less ARCP Inverter with GaN-HEMTs
			1085	Yamato	Mishima	Measurement Methods for DC Superimposition Characteristics of Two-phase Coupled Inductor under Current Imbalance
			1089	Tomotaka	Nagai	Application of magnetic composite material to power electronics circuit
			1099	Kentaro	Yamamoto	Effect of Reduction Behavior of Fine Iron Ore by Pulverized Coal on Atmospheric Gas

1100	Kaito	Onoda	Molten Salt Formation Characteristics of Industrial Waste Ash and Control of Ash Deposition
1101	Takamasa	Negishi	Effect of Char Structure and Gas Atmosphere on Gasification Behavior of Pulverized Coal Char
1103	Ryuya	Shibata	Deposition characteristics of Si compounds on the De-NO <sub>x</sub> catalysts for PC boilers.
1131	Kazuya	Matsuta	Investigation on improvement of heat dissipation performance for magnetic parts
1157	Eiichi	Sato	Basic study on output characteristics of an undershot water turbine applicable to heavy snowfall areas
1164	Yikun	Yin	Improvement of Coupling Coefficient of Helical Resonator in Wireless Power Transmission
1191	Masato	Ishimoto	"A Proposal of Simple Controlling Parity-Time Symmetric Wireless Power Transfer System in the Electric Field Resonance"
1224	Keitaro	Kimura	Aerodynamic Characteristics of Multiple Cross-Flow Wind Turbines Stacked in Rectangular Duct

## Area 11 Electric Power Energy Systems

11/5	14:30	15:00	Invited	Hassan Bevrani	Virtual Dynamics Shaping in Distributed Generators Integrated Power Systems
	15:00	15:15	1151	Rajabu Myovela	Coordinated Control of Air-conditioning loads and Battery Energy Storage System for Improving the Utilization of Building Thermal Capacity as an Additional Energy Resource
	15:15	15:30	1113	Hiroki Hoshino	Impact of Electric Vehicles as Unstable Flexibility Resources on the Performance of a Factory-scale Power System with high Penetration of Photovoltaic Systems
	15:30	15:45	1106	Akito Nakadomari	Optimal placement of three-phase SVR considering cooperation with LRT in Unbalanced distribution system
	15:45	16:00	1125	Helindu Cumaratunga	Impact of Electric Vehicles as Unstable Flexibility Resources on the Performance of a Factory-scale Power System with high Penetration of Photovoltaic Systems
	16:15	16:30	1050	Naoki Sasada	Basic study on Effect of Storage Battery Introduction on Merit-order-based Load Frequency Control
	16:30	16:45	1096	Ryo Miyara	Online parameter identification of PMSG wind generator using machine learning
	16:45	17:00	1048	Noha Harag	An Autonomous Dual Active Power-Frequency Control in a Grid with Small-Scale Photovoltaic Power Generation
	17:00	17:15	1045	Miyu Nakamura	A Study on PV Power Output Forecast Utilization  for Reducing Imbalance Risk of Electricity Retailer  with Battery Energy Storage System
	17:15	17:45	1044	Misaki Kawai	Prediction of Large Forecast Error of Solar Irradiance by Variation of Forecast Weather Parameters using WRF Models with Different Physical Schemes

### 11/5 13:30 14:30 Poster

1025	Kazuma Tagawa	Estimation of AC breakdown strength to maximum agglomerate size of epoxy/titanium dioxide nanocomposite by avalanche breakdown model
1033	Kanato Tamashiro	Application of ADLC in Smart House considering EV charging pattern
1042	Atsushi Suzuki	Evaluating Effect to Mitigate Suppression of Photovoltaic Generation under Day-Ahead Unit-Commitment and Intraday Time-series Electric Load Dispatching Simulation
1087	Tomohiro Kawashima	Fundamental study for condition monitoring of discharge space based on waveform characteristics of partial discharge
1121	Tetsuya Yabiku	Optimal Operation Plan for Multiple Existing Smart Cities
1132	Reo Katsuya	Partial Discharge Inception Characteristics of Oil Gap between Oil-impregnated Power Capacitor Films
1135	Motoshi Hirai	Impulse Breakdown Strength of Epoxy/Anatase-TiO <sub>2</sub> Nanocomposite using Centrifugation Agglomerate Removal
1140	Mirai Shimura	Low Permittivity Characteristic and Electric-tree Breakdown Strength of Epoxy/Hollow-silica Nanocomposite
1141	Yuya Asada	Electrical Insulation Lifetime of Epoxy/Silica Nanocomposite with a Void Defect
1149	Yu Hisada	Energy Output Calculation Model of Dielectric Elastomer Generator using Electrical Conductivity of Elastomer Material
1150	Kana Nishikawa	Optical Microscope Observation of Electrical Tree Growth in Silicone Gel Added with Small Amount of TiO <sub>2</sub> Nanofiller

## Area 12 Communication Systems

11/5	14:30	15:00	Invited	Tadahiro Wada	Introduction to Experiments of Meteor Burst Communications in Equatorial and High-Latitude Regions
	15:00	15:15	1129	Takuto Ohtaguro	Experimental verification of 4-ary Pulse Amplitude Modulated signal receiver with noise-aided one-bit analogue-to-digital converter
	15:15	15:30	1005	Hiroyuki Asano	A Voronoi-Based Flight Method of UAVs in Delay-Tolerant Aerial Networks
	15:30	15:45	1097	Ryota Tanahashi	Valueput Evaluation and Improvement of a Sensor Network with Periodic and Sporadic Traffic
	15:45	16:00	1057	Taiga Kasukabe	Selection Diversity for Near-far Problem Mitigation in Optical Wireless CDMA Systems
	16:15	16:30	1098	Akinori Nakayama	Development of Receiving System for Rotary LED Transmitter in Image Sensor Communication
	16:30	16:45	1015	Kazuya Shimei	A Study on Uniform Color Space-Based Signal Modulation for Image Sensor-Based Visible Light Communication
	16:45	17:00	1020	Yuki Iyoda	A study on machine learning-based signal demodulation for image sensor-based visible light communication
	17:00	17:15	1053	Kenzo Yamada	Comparison of Intensity Modulation Schemes for Turbulent Underwater Optical Wireless Communication Links
	17:15	17:30	1137	Hitoshi Ando	Evaluation and Mitigation of Vessel Motion Effects on MIMO-UOWC Systems
	17:30	17:45	1109	Chedlia Ben Naila	Performance Comparison of Two Different Receiver Configurations for Indoor Long Distance High-Speed Optical MIMO Systems
11/5	13:30	14:30	Poster		
			1001	Tekkann Okuda	Radio Propagation Characteristics Between a UAV and Power Transmission Tower for Autonomous Inspections of Power Transmission Lines

Area 13 Transportation Systems

11/5	10:15	10:45	Invited	Kai	Liu	Ride-hailing demands prediction with machine learning
	10:45	11:15	Invited	Peng	Cao	Quantifying the Efficiency of Traffic Data Collection by Instrumented Vehicles in Mixed Traffic Flow
	11:15	11:30	1162	Urwah	Khan	Understanding adoption of Hydrogen fuel cell vehicles in Aichi Prefecture, Japan
	11:30	11:45	1009	Jinjia	Liang	Travel and Activity Behavior in Telecommuting Era
	11:45	12:00	1104	Di	Wang	Comparing Mobility Patterns Between Traditional Taxis and Ride-Hailing Services Using Non-Negative Tensor Factorization
	12:00	12:15	1167	Yefang	ZHOU	Ride-sharing Autonomous Vehicle System in Residential Area: Effects of Charging

11/5 13:30 14:30 Poster

1024	Lisha	Wang	Railway-induced Heterogeneous Residential Distribution and Spatial Spillover Effects: The Case in Nagoya City
1148	Takamitsu	Yamahigashi	Construction of System Simulation Model for Electric Aircraft



## Area 14 Low Carbon/Environmental Conservation Technology and Systems

Energy-saving microbial technologies using extracellular electron transfer: bioremediation and resources production

11/4	14:30	15:00	Invited	Naoko	Yoshida	Up-scaling of microbial fuel cell toward the practical application in wastewater treatment
	15:00	15:30	Invited	Kengo	Inoue	Electrode Reduction by Geobacter sulfurreducens
	15:30	16:00	Invited	Kayako	Hirooka	
	16:15	16:45	Invited	Natsuko	Hamamura	Microbe-mineral interaction and biotransformation of toxic metalloids
	16:45	17:00	1068	Sujan	Dey	Humin promotes the Biological H <sub>2</sub> (Bio H <sub>2</sub> ) production of an anaerobic consortium enriched under nitrogen-deficient condition
11/5	10:15	10:45	Invited	Shun'ichi	Ishii	Methane production from CO <sub>2</sub> and electricity using subsurface electro-methanogenic microbes
	10:45	11:15	Invited	Atsushi	Kouzuma	Bioelectrochemical nitrogen fixation by engineered chemolithotrophic bacteria
	11:15	11:45	Invited	Takuya	Kasai	Study on extracellular electron transfer mechanism in humin promoting redox reactions of nitrogen
	11:45	12:00	1035	Daisuke	Yamashita	Biotransformation Potential of Antimony-Reducing Microbial Consortium Obtained from Stibnite Mine Tailing Soil
11/5	10:15	10:45	Invited	Kenneth	Bagstad	Interoperable data and models support better natural capital accounting for sustainability
	10:45	11:15	Invited	Akira	Hibiki	How much do the households pay to avoid prolonged outages?
	11:15	11:30	1056	Yiyao	WANG	The marine ecosystem services values for China based on the emergy analysis method
	11:30	11:45	1054	Kotchakarr Nantasaksiri		Modeling watershed scale impacts of Napier grass bioenergy crop cultivation on water resources and quality using SWAT model
	11:45	12:00	1216	Ke	Zhang	Estimating Biomass of Pasture Grass using Digital Surface Models and Point Cloud Data derived from UAV-Based RGB Imaging
11/6	11:15	11:45	Invited	Takehiko	Murayama	Geothermal Development Potential and Local Electricity Demand Considering Environmental and Social Conditions
	11:45	12:15	Invited	Minoru	Fujii	Toward carbon neutral plastic circular economy
	12:15	12:30	1144	Xiaoxun	Huang	Study on the Comparison of the Introduction Potential for Rooftop Solar Power Generation Calculated from Different Data Sources- LiDAR data, AW3D data and Global Solar Atlas
	12:30	12:45	1154	Tomoko	Okayama	Definition and Sub-Categories of Food Waste from Household Sources in Japan: Comparison of Sorting Analysis of Urban and Rural Areas
	12:45	13:00	1177	Ruirui	Zhang	Evaluation of potential environmental impacts on urban building system during floods

## Area 14 Low Carbon/Environmental Conservation Technology and Systems

11/5 13:30 14:30 Poster

1012	Takehiko	Kinoshita	Selective recovery of palladium with continuous counter-current foam separation from hydrochloric acid solutions
1037	Phub	Dem	Emergy based spatial evaluation of Ecosystem Services in Central Bhutan
1038	Yuya	Yoshimura	Characterization of Microbial Communities Associated with Microbial Fuel Cells Constructed from Stibnite Mine Tailing Sediment
1063	Hironaga	Yamashita	Photocatalytic Decomposition of Dye in Wastewater by Pd/WO <sub>3</sub> Composite Particles Prepared under Ultrasonication
1076	Biec	Ha	Effects of chemical factors and microbial community on the activity of CO <sub>2</sub> -fixing acetogenesis and methanogenesis with the presence of humin as extracellular electron mediator
1128	Linwei	Tao	Auto-Detection of Solar Panel Using Deep Learning Method and Aerial Imagery Data
1171	Yoichi	IKEDA	Enhancement of water mist cooling in duct flow by using turbulence generator
1204	Zhiwei	Liu	An Attempt to Estimate Total Floor Area for Urban Material Stock Calculation Using Deep Learning Inspired Method

# International Symposium on Design & Engineering by Joint Inverse Innovation for Materials Architecture (DEJI2MA)

11/5 9:50 10:00 Opening

10:00	10:40	Keynote	Seong-Ju Hwang	Recent advances in nanomaterial-based environmental and energy technology
10:40	11:05	Invited	Hiroshi Kawarada	Complementary power inverters using wide bandgap semiconductors for noise-free motorized society
11:05	11:30	Invited	Yutaka Majima	Nanowire oxygen gas sensor
		break		
11:40	12:05	Invited	Akihiko Chiba	Optimal Alloy Powder Characteristics for Electron Beam Additive Manufacturing
12:05	12:30	Invited	Masaki Mizuguchi	Thermoelectric Generation in Nanostructured Magnetic Materials
14:00	14:25	Invited	Hiroya Abe	Metal oxide nano/microparticles designed in modified polyol process and their applications
14:25	14:45	Invited	Daixiu Wei	Development of strong and ductile high entropy alloys
14:45	15:10	Invited	Taishi Yokoi	Development of organically-modified octacalcium phosphate based biomaterials
15:10	15:30	Invited	Kota Hanzawa	Optoelectronic properties of early transition metal (Hf and Zr)-based perovskite-type sulfides
		break		
16:00	16:25	Invited	Satoshi Ohara	Integration of advanced ceramic nanocrystals towards solid oxide fuel cell and biomedical applications
16:25	16:45	Invited	Motohiro Tomita	Silicon nanowire energy harvesting device
16:45	17:10	Invited	Masakazu Kawashita	Development of bioceramics for cancer treatment
17:10	17:35	Invited	Minoru Osada	Single droplet assembly for 2D electronics
		Closing		

## 11/5 13:30–14:30 Poster

1195	Masatomc Hattori	Pd/ZrO <sub>2</sub> composites prepared from ZrPd-based amorphous alloy for exhaust gas treatment
1197	Maki Nakamura	Numerical Calculation of PM Trapping and Oxidation of Diesel Particulate Filter with Catalysts
1198	Masatomc Hattori	Three-way Catalytic Performance and Chemical State of Cu added Al <sub>2</sub> O <sub>3</sub> Catalysts
1201	Yoken Ito	Fabrication and Characterization of Nanoparticle CeO <sub>2</sub> Thin Film Catalyst
1203	Daiki Suzuki	Catalytic activity of three-way catalyst using CeO <sub>2</sub> -ZeO <sub>2</sub> -based nanoparticle composite support
1207	Yuki Noguchi	Evaluation of catalytic activity and cross-sectional observation of CeZrO <sub>4</sub> thin film catalysts on single crystal
1208	Kengo Okai	Building a Converter Model of Catalyst for Diesel Particulate Matter Combustion
1214	Shinnosuk Taki	Preparation and characterization of three-way catalyst using size-controlled Pd nanoparticles

## Harmonic Fusion of Renewable Energy and Commercial Electric Power System

11/4	14:40	15:10	Invited	Mutsumi Aoki	Study on Current Differential Protection System without Sampling Synchronization in Distribution System installed a Large Amount of Distributed Power Sources
	15:10	15:40	Invited	Shinichi Mitsumoto	Effect of Low Level Radioactive-ray Irradiation in Nuclear Reactor on Space Charge Formation in Polyethylene
	15:50	16:20	Invited	Tomohiro Kawashima	Fundamental Study for Assessment of Surface Resistivity of Insulating Material using Waveform Characteristics of Partial Discharge
	16:20	16:50	Invited	Hiroataka Takano	Optimal Sizing of Battery Energy Storage Systems Considering Coordinated Operation with Microgrid Components

Planning session by Division of Systems Research, IMASS

## Resilient Society and System Technology

11/6 15:00–17:00

Kayo	Sawada	Consideration for Resilience of Nuclear Energy System in Japan
Jiro	Kasahara	Sounding Rocket Systems for Transporting Payloads into Space and Its Resilience
Toshiyuki	Yamamoto	Socially-integrated Technological Solutions for Real-time Response and Neighborhood Survival After Extreme Events
Hiraku	Okada	Emergency Communication Systems during Large-Scale Disasters
Takeyoshi	Kato	Emergency Power Supply using Microgrid
Kiichiro	Hayashi	Resilience and Renewable Energy Site Selection

Panel Discussion