

STAC-12 Program

6-Jul

Room A

Engineering Materials

Time		Name	Affiliation	Title
9:45		Michikazu Hara	MSL, Tokyo Institute of Technology	Opening Address
10:00	Invited	Takashi Akatsu	Saga University	Strengthening in porcelain reinforced with alumina particles
10:30		Dong Hao	Saga University	Suppression of the pyroplastic deformation of alumina strengthened porcelain by promoting the mullite crystallization
10:45		Yuichi Kobayashi	Aichi Institute of Technology	Effect of Quartz Particle Size on Thermal and Physical properties of Porcelain
11:00		Wu Yuwei	Tokyo Institute of Technology	Mechanical properties of microstructure-controlled Al ₂ O ₃ /LaPO ₄ composites
11:15		Anna Gubarevich	Tokyo Institute of Technology	Induction Heating-Assisted Combustion Synthesis and Mechanical Properties of Al ₄ SiC ₄ Ceramics
11:30		Satofumi Maruyama	Tokyo City University	Development of the boride based hard materials sintered by the reaction boronizing sintering
11:45		AI Momozawa	Tokyo City University	Microstructural Evolution in Quasi-ternary TiB ₂ -W ₂ B ₄ -CrB ₂ Ceramics

Engineering Materials

Time		Name	Affiliation	Title
13:00		Ying Chung	Tokyo Institute of Technology	Fabrication of porous silicon carbide ceramics using in-situ grain growth with addition of aluminum and boron
13:15		Yutaro Arai	Tokyo University of Science	Refractory high-entropy ceramic matrix composites: Synthesis and their hot corrosion
13:30		Daichi Sakakibara	Tokyo Institute of Technology	Evaluation of Mechanical Properties of Unidirectional SiC/SiC Composites with BN Interphase Formed by Electrophoretic Deposition
13:45		Riyo Yamanaka	Japan Aerospace Exploration Agency	Adsorption of Volatile Siloxane Compounds on Porous Materials for Prevention of Surface Contamination
14:00	Invited	Ryo Inoue	Tokyo University of Science	Strain imaging of ceramic composites and coating at high temperature
14:30		Hideki Kakisawa	National Institute for Materials Science	Measurement of in-plane coefficient of thermal expansion of ceramic coating from room temperature to 1400 °C
14:45		Gaku Okuma	Center for Structural Materials, National Institute for Materials Science (NIMS)	Reliability analysis of electronic device by using synchrotron X-ray nano-CT : Microstructural evolution of electrodes of MLCC

Poster Session 1

15:30-17:30

Room B

Electro Magnet

Time		Name	Affiliation	Title
10:00	Invited	Takashi Suemasu	University of Tsukuba	Present status of BaSi ₂ solar cells and hydrogen passivation of defects for improved photoresponsivity
10:30		Rikizo Yano	IMaSS, Nagoya University	Magnetically Doped Three Dimensional Topological Insulator and its Superconducting Proximity Effects
10:45	Invited	Shujun Zhang	University of Wollongong, Australia	The impact of local structural heterogeneity on electric properties of ferroelectrics
11:15		Keisuke Ishihama	Tokyo Institute of Technology	Composition dependencies of crystal structure and electrical properties of epitaxial tetragonal (Bi,Nb)TiO ₃ -BaTiO ₃ films.
11:30	Invited	Takahisa Shiraishi	Tokyo Institute of Technology	Crystal structures, microstructures, and electrical properties of hydrothermally-deposited (K,Nb,Li)(Nb,Ta)O ₃ epitaxial films

Advanced Characterization

Time		Name	Affiliation	Title
13:00	Invited	Koji Hatanaka	Academia Sinica	THz Wave Emission from Thin Water Flow under Intense Femtosecond Laser Irradiation
13:30	Invited	Kunio Ishida	Utsunomiya University	Measurement of Quantum Entanglement Dynamics by Ultrafast Spectroscopy
14:00		Kazutaka G Nakamura	Tokyo Institute of Technology	Measuring quantum coherence in a GaAs crystal
14:15		Yuya Furusho	Laboratory for Materials and Structures, Tokyo Institute of Technology	Ultrafast quantum-path interferometry for quantum beats of excitons in GaAs multi quantum well
14:30		Itsuki Takagi	Laboratory for Materials and Structures, Tokyo Institute of Technology	Coherent control theory for optical phonons in a crystal using polarized femtosecond pulses with relative phase locking
14:45		Suguru Kitani	Laboratory for Materials and Structures, Tokyo Institute of Technology	Low temperature magnetic properties of hyperkagome antiferromagnet Zn ₂ Mn ₃ O ₈

Poster Session 1

15:30-17:30

7-Jul

Room A

Semiconductor

Time		Name	Affiliation	Title
10:00	Invited	Atsushi Fukuchi	Faculty of Information Science and Technology, Hokkaido University	Probe Microscopy Analysis of Neuromorphic Resistive Memory Functions of Amorphous Oxide Semiconductors
10:30		Keisuke Ide	MSL, Tokyo Institute of Technology	Effect of hydrogen doping on transport property of ultrawide bandgap amorphous oxide semiconductor, amorphous Ga-O
10:45		Kaiwen Li	Tokyo Institute of Technology	Fabrication of Zn ₃ N ₂ electric double layer transistor by ionic liquid gating
11:00	Invited	Zewen Xiao	Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology	Understanding and Designing Halide Double Perovskites for Optoelectronic Applications
11:30		Soungmin Bae	Department of Physics, Yokohama National University, 240-8501, JAPAN	Strain control for p-type doping of haekelite GaN
11:45		Guoqi Ji	Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology	B-Site Columnar-Ordered Halide Double Perovskites: Theoretical Design and Experimental Verification

Semiconductor

Time		Name	Affiliation	Title
13:00	Invited	Takayuki Harada	National Institute for Materials Science	Delafossite electrodes for harsh-environment semiconductor devices
13:30		Makoto Minohara	Research Institute for Advanced Electronics and Photonics, National Institute of Advanced Industrial Science and Technology	Bipolar Semiconducting Properties in α -SnWO ₄ Based on the Characteristic Defect Structure
13:45		Takahiko Kawaguchi	Shizuoka University	Preparation of GaN epitaxial thin film using melamine flow nitridation

14:00		Akifumi Matsuda	Tokyo Institute of Technology	Room-temperature epitaxial growth of Ni _{1-x} Fe _x O solid solution thin films
14:15		Masatoshi Kimura	Laboratory for Materials and Structures, Tokyo Institute of Technology	Phonon-drag driven giant anisotropic thermopower in epitaxially strained LaNiO ₃ (110) ultra-thin films
14:30		XINYI HE	Laboratory for Materials and Structures, Tokyo Institute of Technology	High-density hole doping in layered SnSe semiconductor by non-equilibrium isovalent Te substitution
14:45		Shigeru Kimura	Tokyo Institute of Technology	Electronic structures and electronic properties of 2-dimensional layered semiconductors, AETMN ₂ (AE = Sr, Ba; TM = Ti, Zr, Hf)

Poster Session 2
15:30-17:30

Room B
Bio

Time		Name	Affiliation	Title
10:00	Invited	Sho Hideshima	Tokyo City University	Functional nanobio interface for semiconductor-based biosensors
10:30	Invited	Takuya Ishimoto	Osaka University	Unique crystallographic texture of apatite ceramics in bones and the related biomaterials design
11:00	Invited	Horacio Cabral	The University of Tokyo	Hybrid Nano-Theranostics for Tumor-Targeted Diagnosis, Imaging and Therapy
11:30		Yasuhiro Nakagawa	Tokyo Institute of Technology	Synthesis and characterization of Hydroxyapatite Hollow Nanoparticles for DNA Delivery Vehicles
11:45		Yuta Kurashina	Tokyo Institute of Technology	Effect of sonophoresis with various nanoparticles on transdermal drug delivery

Solid State Chemistry

Time		Name	Affiliation	Title
13:00	Invited	Sung Wng Kim	Department of Energy Science, Sungkyunkwan University	Discovery of two-dimensional van der Waals materials and topological Dirac semimetal in the class of ABC Zintl phases
13:30	Invited	Daisuke Urushihara	Nagoya Institute of Technology	Crystal structure and various physical properties in novel layered compounds
14:00		Yoshihiro Tsujimoto	National Institute for Materials Science	Design of Novel UV Nonlinear Optical Materials by Mixed Anion Strategy
14:15		Daiki Yamashita	Tokyo Institute of Technology	Channel oxygen removal from oxyapatite La ₉ 33(SiO ₄) ₆ O ₂
14:30		Lei Hu	Laboratory for Materials and Structures, Tokyo Institute of Technology	Origin and Absence of Giant Negative Thermal Expansion in Ca ₂ RuO ₄

Poster Session 2
15:30-17:30

8-Jul
Room A
Materials Design and Informatics

Time		Name	Affiliation	Title
10:00	Invited	Hannes Raebiger	Yokohama National University	Exploration of MXenes - magnetism, charge density waves, topological states, and electrides
10:30		Susumu Fujii	Osaka University	Phonon-assisted ionic transport in alkali-rich antiperovskites with soft anionic sublattices
10:45		Craig AJ Fisher	Japan Fine Ceramics Center	Molecular Dynamics Simulations of Solid Electrolyte Lanthanum Lithium Niobate
11:00	Invited	Terumasa Tadano	National Institute for Materials Science	Ab initio phonon calculation at finite temperature toward computational exploration of metastable phases
11:30		Ushio Matsumoto	Japan Fine Ceramics Center	Oxide-ion Migration in Pyrochlore Y ₂ Ti ₂ O ₇ Using the Mapping Approach
11:45		Monirul Shaikh	Department of Physics and Nanotechnology, SRM Institute of Science and Technology	Investigation into Cation-Ordered Magnetic Polar Double Perovskite Oxides

Materials Design and Informatics

Time		Name	Affiliation	Title
13:00	Invited	Abhishek Kumar Singh	Indian Institute of Science	Data-assisted Insights to Overcome Challenges Associated with Thermoelectrics
13:30		Yasuhide Mochizuki	Tokyo Institute of Technology	Two Coexisting Mechanisms in Weak Ferroelectricity of Li ₂ SrNb ₂ O ₇
13:45		Ayako Taguchi	Japan Fine Ceramics Center	Defect Concentrations in Proton-conducting Perovskite Oxides from First Principles
14:00		Swamynadhan M J	SRM Institute and Science and technology	Designing multifunctional two-dimensional layered transition metal phosphorous chalcogenides

Room B
Solid State Chemistry

Time		Name	Affiliation	Title
10:00	Invited	Hoa Hong Nguyen	Masaryk University, Brno, Czechia	Remarkable Properties of Nanoscaled Magnetic Semiconducting Oxides: From Ceramics to Thin Films
10:30		Kota Hanzawa	Laboratory for Materials and Structures, Tokyo Institute of Technology	Perovskite-Type Sulfides AE ₂ TMS ₃ (AE = Sr & Ba, eTM = Zr & Hf) for Light Emission and Absorption Semiconductors
10:45		Takayuki Nagai	Materials Research Center for Element Strategy, Tokyo Institute of Technology	Optically enhanced permittivity in reduced lanthanum aluminate
11:00		Yuki Sasahara	School of Materials and Chemical Technology, Tokyo Institute of Technology	Fabrication of High-Pressure-Phase α -PbO ₂ -type TiO ₂ Epitaxial Thin Films by Pressure-Induced Phase Transition
11:15		JUN DENG	School of Materials and Chemical Technology, Tokyo Institute of Technology	Investigation of resistance at LiCoO ₂ electrode and ionic liquid electrolyte interfaces
11:30		Ryo Toyama	Laboratory for Materials and Structures, Tokyo Institute of Technology	Ti underlayer effect on magnetic property of CoPt thin films on Si substrates

Catalyst

Time		Name	Affiliation	Title
13:00	Invited	Akihide Iwase	Meiji University	Construction of Z-scheme Systems using Photocorrosive Metal Sulfide Photocatalysts for Water Splitting and CO ₂ Reduction
13:30		Aufandra Cakra Wardhana	Tokyo Institute of Technology	Direct Observation of Interfacial Charge Excitation in Visible-light-active Cr ₂ O ₃ /SrTiO ₃ Photocatalytic System
13:45	Invited	Satoshi Ishikawa	Kanagawa University	Structure-activity relationship in crystalline Mo ₃ VO _x in selective oxidations
14:15		Yusuke Kita	Tokyo Institute of Technology	Direct Amination of Alcohols over Supported Ru Catalysts
14:30	Invited	Min Liu	Central South University	Enhanced catalytical reaction via tip induced electro-thermal field