

Fri., Dec. 12

17:00-18:00 Briefing (For Professors only from Europe, Asia, the US, and Australia)

19:00-21:00 Welcome Reception

Sat., Dec. 13

8:00-8:05 Opening

8:05-8:50 Keynote Lecture: "Global Overview of Energy Strategy for Green Innovation in Japan", Ken Okazaki, Tokyo Institute of Technology

8:50-9:35 Invited Lecture-1: "How Far and How Fast Can Biofuels Go?", Dongke Zhang, The University of Western Australia

9:35-10:05 Break

General Session

	Room A	Room B	Room C	Room D
	Material Science & Other Related Topics 1 Chair: S. Hattori/Co-chair: S. Takahashi	Urban Environment & Fuel Cell Technology Chair: A. Inagaki/Co-chair: K. Hara	Solar Cell Technology & Other Related Topics Chair: Y. Takamura/Co-chair: P. Weerakoon	Environmental Science and Engineering Chair: J. Fu/Co-chair: M. Oguchi
10:05-10:25	A111: γ' Morphology and Lattice Misfit in Wrought Ni-based Superalloy with Low Volume Fraction of γ' Phase Hiromu Hisazawa*, Yoshihiro Terada Tokyo Institute of Technology	B111: Detection of Venting of CO ₂ from an Urban Street Canyon: Development of an Automated System and Results Alex Björkegren*, Sue Grimmond King's College London	C111: Innovative Emitter Concept for Silicon Heterojunction Solar Cells Henriette Gatz*, Jatin Rath, Erwin Kessels, and Ruud Schropp Eindhoven University of Technology	D111: The Initiation of Rain in a Shallow Cumulus Cloud Fabian Hoffmann*, Yign Noh, and Siegfried Raasch Leibniz Universität Hannover
10:25-10:45	A112: Demonstration and numerical simulation of seed free pure inert gas plasma magnetohydrodynamic energy conversion Manabu Tanaka* and Yoshihiro Okuno Tokyo Institute of Technology	B112: Cycling Simulator Validation for Bicycle Safety Analysis to Improve Urban Environment Kei Miyanoue*, Mio Suzuki, Tetsuo Yai Tokyo Institute of Technology	C112: Low-Cost Fully-Distributed Demand Side Management for Increased Power Grid Efficiency Lu Xia*, Ramachandra Rao Kolluri, Julian de Hoog and Iven Mareels The University of Melbourne	D112: Modelling the effects of Climate Variability on a Weather Dependent, UK Power System Hannah Bloomfield*, Dr David Brayshaw, Dr Len Shaffrey, Dr Phil Coker, Hazel Thornton, Dr Jason Lowe University of Reading
10:45-11:05	A113: Thermodynamics modeling of stacking fault energy of Co-base superalloy Zhigang Yang, Chi Zhang, Wenxiang Fu*, and Tria Laksana Tsinghua University	B113: Dissolution Behavior of Pt ₅₀ -Fe ₅₀ Binary Alloy under Potential Cycling Azusa Ooi*, Eiji Tada, and Atsushi Nishikata Tokyo Institute of Technology	C113: Design of Triple Layer Antireflection Coating for Nanocrystalline Cubic Silicon Carbide/p-type Crystalline Silicon Heterojunction Solar cell Ateto Erick Omondi*, Makoto Konagai, Shinsuke Miyajima Tokyo Institute of Technology	D113: A Continuous Large-Eddy Simulation Covering Multiple Days and Weather Conditions in the Mid-Latitudes Lennart Böske*, Rieke Heinze, and Siegfried Raasch Leibniz Universität Hannover
11:05-11:25	A114: Hybrid System of Solid Oxide Electrolyser Cell and Plasma Reactor to decompose Carbon Dioxide Lin Lin Tun*, Naoki Matsuura, Shinsuke Mori Tokyo Institute of Technology	B114: Numerical simulation method for sensible heat flux from building external surfaces to the surrounding atmosphere using a heat balance simulation and CFD Kan Chen*, Takashi Asawa Tokyo Institute of Technology	C114: Solar Cells Based on III-V Nanowires on Silicon Abdennacer Benali*, Jérôme Michallon, Philippe Regreny, Emmanuel Drouard, Pedro Rojo, Nicolas Chauvin, Alain Fave, Anne Kaminski-Cachopo, Michel Gendry Institut des Nanotechnologies de Lyon	D114: A 2-DOF Bearingless Motr Utilizing a Permanent Magnet Free Structure for Disposable Centrifugal Blood Pump Jun Rao*, Wataru Hijikata, and Tadahiko Shinshi Tokyo Institute of Technology
11:25-11:45	A115: Stability of the L12 Crystal Structure in Co-base Superalloys Robert K. Rhein*, Philip C. Dodge, Michael S. Titus, Alessandro Mottura, Anton Van der Ven, and Tresa M. Pollock University of California, Santa Barbara	B115: A Huge and High Resolution Large Eddy Simulation Domain of Tokyo Urban Area by using Lattice Boltzmann Method Nurul Huda Ahmad*, Atsushi Inagaki, Manabu Kanda, Naoyuki Onodera, and Takayuki Aoki Tokyo Institute of Technology	C115: Operating Inverter Interfaced Microgrids – Robustness Issues Ramachandra Rao Kolluri*, Lu Xia, Julian de Hoog, and Iven Mareels The University of Melbourne	D115: Elucidation of Switching Mechanism of Metabolism By Using MazF protein in <i>Escherichia. coli</i> Ryota Sugimoto*, Tomohiro Shimada, and Kan Tanaka Tokyo Institute of Technology
11:45-12:05	A116: A Study of Age-hardening Response of Al-Mg-Cu(-Ag) alloys with Different Alloy Compositions M. Mihara*, C. D. Marioara, S. J. Andersen, R. Holmestad, E. Kobayashi and T. Sato Tokyo Institute of Technology	B116: Development of New Proton Exchange Membrane with Heterocyclic Ring Systems for Polymer Electrolyte Fuel Cells Shuntaro Amari*, Shinji Ando, Takeo Yamaguchi Tokyo Institute of Technology	C116: The Electrical Challenges of a Patterned TCO for HIT Solar Cell Romain Champory*, Fabien Mandorlo, Alain Fave, and Christian Seassal Institut des Nanotechnologies de Lyon	D116: Enhanced performance of multilayer MoS ₂ transistors with picosecond laser annealed contacts for low power flexible display Hyuk-Jun Kwon*, Woong Choi, Sunkook Kim, and Costas P. Grigoropoulos University of California, Berkeley

Sat., Dec. 13

12:05-13:40	Lunch			
	General Session			
	Room A	Room B	Room C	Room D
	Material Science for Energy and Environment 1 Chair: T. Iwasaki/Co-chair: J. Hasegawa	Global/Regional Environment & Material Science 1 Chair: M. Nakagawa/Co-chair: K. Miyanoue	Nuclear Technology & Other Related Topics Chair: J. Fu/Co-chair: J. Kariya	Social Science & Engineering Chair: J. Park/Co-chair: T. Phraewphiphat
13:40-14:00	A121: Fabrication and Characterization of Semiconductor-Photoelectrodes Based on Earth-Abundant Fe ₂ O ₃ with Various Crystalline Orientations Hisanori Mashiko*, Kohei Yoshimatsu, Takayoshi Oshima, and Akira Ohtomo Tokyo Institute of Technology	B121: Photocatalytic CO ₂ Reduction in Water Using Supramolecular Photocatalysts to Achieve the Artificial Photosynthesis Akinobu Nakada*, Kazuhide Koike, Kazuhiko Maeda, and Osamu Ishitani Tokyo Institute of Technology	C121: Numerical Analysis on Creation of Palladium by Nuclear Transmutation of Fission Product Rhodium in Pressurized Water Reactor Atsunori Terashima* and Masaki Ozawa Tokyo Institute of Technology	D121: Prioritization of Renewable Energy Policies in Japanese Depopulating Municipalities Junichirou Ishio*, Naoya Abe Tokyo Institute of Technology
14:00-14:20	A122: The Effect of Spatial Heterogeneities on Transformation Kinetics in Amorphous Al Alloys Ye Shen*, Seth Imhoff, John H Perepezko University of Wisconsin-Madison	B122: Observation of HO _x enhancement induced by lightning Takayoshi Yamada*, Yasuko Kasai, Hideo Sagawa, Toru Adachi, Kota Kuribayashi, Rue-Ron Hsu, Han-Tzong Su, Alfred Chen, Mitsuteru Sato, Yukihiko Takahashi, and Naohiro Yoshida Tokyo Institute of Technology	C122: Development of New Snake-like Robot "ACM-R8" for Explorations of Disaster Buildings Hirotaka Komura*, Hiroya Yamada, Gen Endo, Edward F. Fukushima and Shigeo Hirose Tokyo Institute of Technology	D122: A Sectoral Perspective on Knowledge Development and Diffusion in Multi-Component Technologies – The Case of Lithium-ion Batteries in the US and Japan Annegret Stephan*, Catharina Bening, Tobias S. Schmidt, and Volker H. Hoffmann Swiss Federal Institute of Technology Zurich
14:20-14:40	A123: Type-I Superconductivity in Intermetallic Compound SnAs Yue Wang*, Hikaru Santo, Hidenori Hiramatsu, and Hideo Hosono Tokyo Institute of Technology	B123: Steam Stability of a Poly(ethyleneimine) Impregnated γ -Alumina Adsorbent for CO ₂ Capture from Ambient Air Miles A. Sakwa-Novak*, and Christopher W. Jones Georgia Institute of Technology	C123: Resonance Self-Shielding in the OpenMOC Deterministic Neutron Transport Code Nathan A. Gibson* and Benoit Forget Massachusetts Institute of Technology	D123: Regional Tsunami Warning Systems: A Study on Indian Ocean and Pacific Ocean Natt Leelawat*, Anawat Suppasri, Patchanok Srivihok, and Fumihiko Imamura Tokyo Institute of Technology
14:40-15:00	A124: Interfacial Mixing of Nickel Vanadium Multilayers Induced by Cold Rolling Zhe Wang* and John H. Perepezko University of Wisconsin-Madison	B124: Cavity Ring-down Spectroscopy of Singlet Oxygen in the Gas Phase Wataru Kashihara*, Atsushi Shoji, Akio Kawai Tokyo Institute of Technology	C124: Proposal of a Long-reach Robot Arm Working in Radiation Environment of Nuclear Power Plant and the Demonstration of a Preliminary Prototype Model Atsushi Horigome*, Hiroya Yamada, Gen Endo, Shin Sen, Shigeo Hirose, Edwardo F. Fukushima Tokyo Institute of Technology	D124: Critical Minerals for a Clean Future: China's Rare Earth Dominance and its Geopolitical Implications on Global Alternative Energy Development Yujia He* Georgia Institute of Technology
15:00-15:20	A125: Characteristics of Fluorinated Graphene Field Effect Transistors Kosuke Tahara*, Takayuki Iwasaki, Akihiro Matsutani, Mutsuko Hatano Tokyo Institute of Technology	B125: Electrodeposition of IrOx on Electroreduced TaOx/GC for Eletrocatalytic Applications Mohd Safuan*, Takeyoshi Okajima, and Takeo Ohsaka Tokyo Institute of Technology	C125: Numerical Study on the Effect of Background Pressure on Supersonic Arc-jet Plasma Flow Along Open-field-lines Ampan Laosunthara* and Hiroshi Akatsuka Tokyo Institute of Technology	D125: Negative Spillover Effects of Aviation Accidents to Public Safety Perception, Society and Environment Chen-Wei Li*, and Tetsuo Yai Tokyo Institute of Technology
15:20-15:40	A126: Electrochemical Capacitance of Carbon Nanowalls Synthesized by Plasma Enhanced CVD Antonius Dimas Chandra Permana*, Atsushi Kameyama, Shinsuke Mori Tokyo Institute of Technology	B126: Organic Matter Removal from Saline Agricultural Drainage Water by Moving Bed Biofilm Reactor Mohamed Ateia*, Chihiro Yoshimura, and Manabu Fujii Tokyo Institute of Technology	C126: Effect of Contact-line Drag on Behavior of Drop Impinging onto Flat Surfaces June Woo Kee* and Sang Yong Lee Korea Advanced Institute of Science and Technology	D126: Make It "Local": An Approach to Increasing China' Will to Tackle Climate Change Yanqing Wang* Tokyo Institute of Technology
15:40-16:10	Break			

Sat., Dec. 13

General Session				
	Room A	Room B	Room C	Room D
	Material Science for Energy and Environment 2 Chair: J. Park/Co-chair: K. Wakabayashi	Global/Regional Environment & Material Science 2 Chair: S. Hattori/Co-chair: E. Ateto	Combustion & Flow Phenomena 1 Chair: Y. Naka/Co-chair: A. Kurachi	Solar Cell Technology & Secondary Battery Chair: K. Suzuki/Co-chair: T. Okada
16:10-16:30	A131: Solid-State Solar Fuel Generation at Elevated Temperature Madhur Bloor*, Xiaofei Ye and William Chueh Stanford University	B131: Determination of the Clumped Kinetic Isotope Effect of $^{13}\text{CH}_3\text{D}/^{12}\text{CH}_4$ Reacting With OH L. M. T. Joelsson*, J. A. Schmidt, K. Sarka, E. J. K. Nilsson, S. Ono and M. S. Johnson University of Copenhagen	C131: Ozone-Activated Self-Sustaining Cool Flames Christopher B. Reuter*, Sang Hee Won, and Yiguang Ju Princeton University	D131: Improved electrochemical performance of titanate nanotube synthesized by hydrothermal reaction using $\text{TiO}_2 \cdot n\text{H}_2\text{O}$ as titanium source Shitong Wang*, Zilong Tang, Ye Hong, Wei Quan and Zhongtai Zhang Tsinghua University
16:30-16:50	A132: Reaction Performance Enhancement of Thermochemical Energy Storage Material by mixing with Expanded Graphite for CaO/H ₂ O Chemical Heat Pump Jun Kariya*, Junichi Ryu, Yukitaka Kato Tokyo Institute of Technology	B132: Nondestructive Ultrasonic Resonance Evaluation For More Efficient Lifetime Utilization of Structural Components Brent Goodlet* and Tresa Pollock University of California, Santa Barbara	C132: Numerical Simulation of Drag-Reducing Turbulent Channel Flow with Spring-Damper Chain Elements Masanari Fujimura*, Hiroya Mamori, Kaoru Iwamoto, Akira Murata, Mitsutoshi Masuda and Hiroto Ando Tokyo University of Agriculture and Technology	D132: Near-field Thermophotovoltaic Generation of Electricity Naphatsorn Vongsoasup*, Katsunori Hanamura Tokyo Institute of Technology
16:50-17:10	A133: Processing Technology of High Performance Thick Nd-Fe-B Film for Electromagnetic Energy Harvesters Ryogen Fujiwara*, Chao Zhi, Tadahiko Shinshi, and Elito Kazawa Tokyo Institute of Technology	B133: Development of a Method for the Determination of Nitrogen and Oxygen Isotope Ratios of Trace NO Tamaki Fujinawa*, Sakae Toyoda, Shohei Hattori, and Naohiro Yoshida Tokyo Institute of Technology	C133: The Structure of a Turbulent Lifted Flame Shahram Karami*, Evatt R. Hawkes, Mohsen Talei, and Hongfeng Yu The University of New South Wales	D133: New Material Search for Crystalline Lithium Ionic Conductor in $\text{Li}_2\text{S}-\text{GeS}_2-\text{P}_2\text{S}_5$ system Yuki Inoue*, Kota Suzuki, Masaaki Hirayama, Ryoji Kanno Tokyo Institute of Technology
17:10-17:30	A134: Ultrafast Time-Resolved Infrared Spectroscopy of Transition Metal Complexes Relevant to Light-Energy Conversion Materials Tatsuhiko Mukuta*, Kei Murata, Akiko Inagaki, Shinya Koshihara, Ken Onda Tokyo Institute of Technology	B134: Effect of <i>N</i> -Methyl Amide Linkage on Hydrogen Bonding Behavior and Membrane Properties of Partially <i>N</i> -Methylated Random Aromatic Copolyamides Motohiro Aiba*, Hidetoshi Matsumoto, Tomoya Higashihara, and Mitsuru Ueda Tokyo Institute of Technology	C134: Characteristics of Rotary Compressor Performance with Compression Chamber Design under Low Speed and High Compression Ratio Conditions Ki Youl Noh*, Byung Chae Min, Jang Sik Yang, Gyung Min Choi, Duck Jool Kim Pusan National University	D134: Non-thermal microwave acceleration on electron transfer reaction at solid surface Fuminao Kishimoto*, Takashi Imai, Satoshi Fujii, Dai Mochizuki, Masato M. Maitani, Eiichi Suzuki and Yuji Wada Tokyo Institute of Technology
17:30-17:50	A135: In-situ Raman Spectroscopic investigation into the Pseudocapacitive Reaction of MnO_x : The Effects of Cation Sizes to Structural Transformation during Charge Storage Dongchang Chen*, Xiayi Li, Mostafa El-Sayed, and Meilin Liu Georgia Institute of Technology	B135: Continuous Measurements of Nitrous Oxide Isotopomers During Incubation Experiments Malte Nordmann Winther*, Thomas Blunier, David Balslev-Clausen, Bo Elberling, and Søren Christensen University of Copenhagen	C135: Simulation of turbulent lifted jet flames Z. Chen*, S. Ruan and N. Swaminathan University of Cambridge	D135: Mixing condition and electrochemical properties of LiCoO_2 and $\text{Li}_{10}\text{GeP}_2\text{S}_{12}$ composite electrode for all solid-state batteries Wen Jing Li*, Masaaki Hirayama, Kota Suzuki, and Ryoji Kanno Tokyo Institute of Technology
17:50-18:10	A136: Quantitative Analysis of Local Microstructure nearby Grain Boundaries for Creep Life Prediction Takafumi Kimura*, Imanuel Tarigan, Naoki Takata, and Masao Takeyama Tokyo Institute of Technology	B136: Heteroepitaxial Growth of Diamond on Si Substrates via 3C-SiC buffer layer by Antenna Edge Microwave Plasma CVD for Power Electronics Application Junya Yaita*, Takayuki Iwasaki, Meralys Natal, Stephen E. Sadow and Mutsuko Hatano Tokyo Institute of Technology	C136: Numerical Simulation of Micromixers with Less Diffusive Schemes Xi Deng*, Xie Bin, Feng Xiao Tokyo Institute of Technology	D136: Highly Fluorescent Polyimides for Wavelength Converting Applications Kenta Kanosue* and Shinji Ando Tokyo Institute of Technology
18:10-18:30		B137: Evaluation of Fungal Contribution to N_2O Production Using Isotopomer Ratios Keiichi Kuzunuki*, Naohiro Yoshida, Sakae Toyoda, Kiwamu Minamisawa, Masato Moriuchi Tokyo Institute of Technology	C137: Optimal Sizing of Biomass Electricity with Carbon Capture and Storage (BECCS): Framework and Application to Illinois Daniel L. Sanchez*, Duncan S. Callaway University of California, Berkeley	D137: Alternative Synthesis Pathways of Electrolytes for Magnesium-Ion Batteries Jake Herb*, Carl Nist-Lund, Craig B. Arnold Princeton University

Sun., Dec. 14

8:00-8:45	Invited Lecture-2: "A Research Agenda for Low Carbon Mobility", Michael A P Taylor, University of South Australia			
8:45-9:30	Invited Lecture-3: Russell Lagdon, Chevron Australia Pty Ltd			
9:30-10:30	Break			
	General Session			
	Room A	Room B	Room C	Room D
	Material Science & Secondary Battery Chair: K. Suzuki/Co-chair: Yue Wang	Regional Environment & Material Science Chair: T. Iwasaki/Co-chair: M. Sanapi	Combustion & Flow Phenomena 2 Chair: Y. Naka/Co-chair: J. Rao	Fuel Cell Technology & Other Related Topics Chair: H. Ogihara/Co-chair: W. Ua-amnueychai
10:30-10:50	A211: Dispersion of Carbon Nanotube by Poly(acrylic acid)-Poly(amide imide) Copolymers for the Anode Binder of Li-ion Battery Akane Kubotera* and Reiko Saito Tokyo Institute of Technology	B211: The distribution of the bubble's radius in the bubble dispersion mould flux Shunsuke Takahashi*, Yoshinao Kobayashi, Rie Endo, and Masahiro Susa Tokyo Institute of Technology	C211: The Influence of In-cylinder Swirl Flow on a Wall-Interacting Fuel Jet in a Light-Duty Diesel Engine Minh Khoi Le*, Sanghoon Kook, Evatt Hawkes The University of New South Wales	D211: Scanning Electron Microscopic Visualization of Particulate Matter Trapping Ryoko Sanui*, Katsunori Hanamura Tokyo Institute of Technology
10:50-11:10	A212: Performance Improvement of Li-Ion Batteries using Silicon as Negative Electrode Lucille Quazuguel*, Nicolas Dupré, Philippe Moreau, Christian Rudish, Julien Danet, Pascale Bayle Guillemaud and Dominique Guyomard Université de Nantes	B212: Shaft Life: Probabilistic Prediction and Extension Ronald Ballinger, Douglas Jonart*, and Alex Slocum Massachusetts Institute of Technology	C212: Parametric Study on Sinusoidal Riblet Shape for Drag Reduction in Turbulent Channel Flow Monami Sasamori*, Oozora Iihama, Mamori Hiroya, Kaoru Iwamoto and Akira Murata Tokyo University of Agriculture and Technology	D212: Effect of Decomposition Gases of Fuels on Electrochemical Reactions in Direct Carbon Fuel Cells Using Molten Carbonate Seongyong Eom*, Jaemin Cho, Gwangseop Lee, Gyungmin Choi, and Duckjool Kim Pusan National University
11:10-11:30	A213: Synthesis and Applications of Polydivinylbenzene Core-Poly(acrylic acid) Corona Particles to the Negative Electrode Binder of Lithium Ion Battery Suzuka Sumiyoshi*, Akane Kubotera, Reiko Saito Tokyo Institute of Technology	B213: Experimental evaluation of amount of soil erosion by using rainfall simulator Megumi Araya* Tokyo Institute of Technology	C213: Fractal Characteristics of Hydrogen-Air Turbulent V-shape Premixed Flames Katsuhiko Hiraoka*, Masayasu Shimura, Yoshitsugu Naka, Naoya Fukushima and Mamoru Tanahashi Tokyo Institute of Technology	D213: Theoretical Analysis of Transient State of Temperature Distribution by Point Contact Current Kazuki Wakabayashi*, Pasomphone Hemthavy, Shigeki Saito, and Kunio Takahashi Tokyo Institute of Technology
11:30-11:50	A214: Analysis of the degradation phenomenon on LiCoO ₂ thin films using Raman imaging during charging and discharging Kosuke Hara*, Takaaki Yano, Tomohiro Hayashi, Masaaki Hirayama, Ryoji Kanno, and Masahiko Hara Tokyo Institute of Technology	B214: Effect of Gate Oxide Process at SiC-MOS Interface on Threshold Voltage Shift Analyzed by DLTS Junichi Hasegawa*, Tetsuo Kodera, Takayuki Iwasaki and Mutsuko Hatano Tokyo Institute of Technology	C214: An Investigation of Operational Mechanism of Pulsating Heat Pipe Jaeyeong Jo*, Sung Jin Kim Korea Advanced Institute of Science and Technology	D214: Development of Hydrogen electrode for the Alkaline Hydrogen-Bromine Fuel Cell Dhrubajit Konwar*, Trung Van Nguyen The University of Kansas
11:50-12:10	A215: Ionic Liquid Confined By Photo-Polymerization As Solid Electrolyte For All Solid State Lithium Microbatteries Djamel Aidoud*, Bernard Lestriez, Jean Lebideau, Delphine Guy-Bouyssou Université de Nantes	B215: Synthesis of polybenzoxazine-silica nanocomposites provided from perhydropolysilazane Joo Yeon Lee* and Reiko Saito Tokyo Institute of Technology	C215: LES of Turbulent Premixed Combustion Using Unstrained and Strained Flamelets Ivan Langella* and Nedunchezian Swaminathan University of Cambridge	D215: Evaluation method of thermal damage to heat-sensitive materials in tip-enhanced Raman spectroscopy Masahito Mochizuki*, Azuho Tsunoi, Taka-aki Yano, Masahiko Hara, and Tomohiro Hayashi Tokyo Institute of Technology
12:10-12:30	A216: Synthesis and Electrochemical Properties of Lithium Ion Conductors with the Pyrochlore Structure Thanya Phraewphiphat*, Iqbal Muhummad, Kota Suzuki, Masaaki Hirayama, and Ryoji Kanno Tokyo Institute of Technology	B216: Towards a Sustainable Human-Nature Relationship through Forest Home Gardens of Kandy, Sri Lanka Patali Samya Weerakoon* Tokyo Institute of Technology	C216: Fine Scale and Large Scale Turbulence Structures in the Friction Drag Recovering Regime in a Surfactant Added Pipe Flow Shogo Ito*, Yoshitsugu Naka, Masayasu Shimura, Naoya Fukushima and Mamoru Tanahashi Tokyo Institute of Technology	D216: Sorption-Enhanced CHAMP Reactor for Distributed Steam Methane Reforming David M. Anderson*, Mohammed Nasr, Thomas M. Yun, Peter A. Kottke, and Andrei G. Fedorov Georgia Institute of Technology
12:30-12:50	A217: Understanding mechanisms in Li-rich lamellar oxide, a promising material for positive electrode in Li-ion batteries Alexandre Pradon*, Maria Teresa Caldes, Camille La Fontaine, Stéphanie Belin, Erik Elkaim, Pierre-Emmanuel Petit, Erwan Dumont, Cécile Tessier, and Guy Ouvrard Université de Nantes		C217: In-cylinder Characteristics of a Gasoline Direct Injection Compression Ignition Engine Using Computational Fluid Dynamics Donghoon Kim*, Choongsik Bae Korea Advanced Institute of Science and Technology	D217: Electrochemical and Spectroscopic Study on the Reduction Current for the Trivalent Lanthanide Ions in Room Temperature Ionic Liquid Akifumi Kurachi*, Fusao Kitamura Tokyo Institute of Technology

Sun., Dec. 14

12:50-14:00	Lunch
14:00-18:00	Student Workshop
19:00-21:00	Banquet

Mon., Dec. 15

8:00-10:00	<p>University Energy Clubs and Student Leadership Panel Discussion Chair: J. S. Cross, Tokyo Institute of Technology/Co-chair: B. Woodall, Georgia Institute of Technology</p> <p>Panelists: Madhur Bloor, Stanford University/Daniel Sanchez, University of California, Berkeley/Enes Kaya, The University of Western Australia/Junichirou Ishio, Tokyo Institute of Technology</p>
10:00-19:00	Technical Tour

Tue., Dec. 16

8:00-8:45	Invited Lecture-4: "Recent Advances In Computational Combustion Modelling For Low-Emissions IC-Engines", Evatt R. Hawkes, The University of New South Wales			
8:45-9:15	Break			
	General Session			
	Room A	Room B	Room C	Room D
	Material Science & Other Related Topics 2 Chair: M. Nakagawa/Co-chair: N. Leelawat	Material Science & Combustion Technology Chair: A. Inagaki/Co-chair: H. Mashiko	Urban/Regional Environment & Solar Cell Technology Chair: Y. Takamura/Co-chair: A. Nakada	Fuel Cell Technology & Secondary Battery Chair: H. Ogihara/Co-chair: A. Horigome
9:15-9:35	A411: An Ultrastable Surface-Enhanced Raman Scattering Substrate synthesized by Low-temperature Atomic Layer Deposition of Alumina on A Silver nanorods Film Lingwei Ma* and Zhengjun Zhang Tsinghua University	B411: Hot Corrosion Attack of Mo-Si-B Coating Matthew Taylor*, John Perepezko University of Wisconsin-Madison	C411: Implementation of the WRF-Urban Canopy Model to Istanbul, Turkey Meral Yucel*, Alvin Christopher Galang Varquez, and Manabu Kanda Tokyo Institute of Technology	D411: In-situ Localized Current Distribution of Vanadium Redox Flow Batteries Jason T. Clement*, Thomas A. Zawodzinski, and Matthew M. Mench The University of Tennessee
9:35-9:55	A412: The Effects of Rotational Barrier on β Relaxation Behaviors Among the Isomeric Polyimides Tomohiro Okada*, Shinji Ando Tokyo Institute of Technology	B412: Laminar Premixed Flames of Gasoline Near The Auto-Ignition Limit Golnoush Ghiasi*, Irufan Ahmed, Nedunchezian Swaminathan University of Cambridge	C412: Influence by Inserting Wide Gap Material at CdS/CIGS Interface for Cu(In,Ga)Se ₂ Solar Cells T. Nishimura*, Y. Hirai, Y. Kurokawa, and A. Yamada Tokyo Institute of Technology	D412: Metal Supported Solid Oxide Fuel Cell Based on Interconnect Coating Kunho Lee*, Joongmyeon Bae Korea Advanced Institute of Science and Technology

9:55-10:15	A413: Light-transmittable Ultrasoother Gold Film for Gap-mode Tip-enhanced Raman Scattering Spectroscopy Masahiro Oguchi*, Masahito Mochizuki, Taka-aki Yano, Masahiko Hara, and Tomohiro Hayashi Tokyo Institute of Technology	B413: Development of Protective Al ₂ O ₃ Scale on Fe-Cr-Al Alloys Suzue Yoneda*, Shigenari Hayashi Tokyo Institute of Technology	C413: Emission Rates of Vehicle Classes Applicable to the Australian Light Vehicle Fleet Ivan Iankov*, Rocco Zito and Michael Taylor University of South Australia	D413: Impact of Flow Field Design on Convective Mass Transport and Pressure Drop in High Performance Redox Flow Batteries Jacob Houser*, Alan Pezeshki, Matthew Mench The University of Tennessee
10:15-10:35	A414: Effect of Cross-sectional Configuration on Fiber Formation Behavior in Bicomponent Melt Spinning Process Y. Chen*, W. Takarada, T. Kikutani Tokyo Institute of Technology	B414: Auto-Ignition Studies of a Fuel Jet Propagating into Hot Air Generated by a Novel Plasma Heater Jhon Pareja*, Felix Eitel, Dirk Geyer, Andreas Dreizler Technische Universität Darmstadt	C414: IV hysteresis of solution-processed hybrid metal halide perovskite solar cells Ye Zhang*, Mingzhen Liu, Giles Eperon, Tomas Leijtens, David McMeekin, Michael Saliba, Laura M. Herz, Michael B. Johnston, Henry J. Snaith, Hong Lin Tsinghua University	D414: An Analysis of Overpotential Curve by SOFC Anode Reaction Model based on Species Territory Adsorption around Triple Phase Boundary Tsuyoshi Nagasawa* and Katsunori Hanamura Tokyo Institute of Technology
10:35-10:55	A415: Molecular Alignment Induced by Photopolymerization with Moving Light Kyohei Hisano*, and Atsushi Shishido Tokyo Institute of Technology	B415: Arc Jet Testing and Evaluation of Mo-Si-B Coated Mo and SiC-ZrB ₂ Ceramics Patrick J. Ritt*, Peter A. Williams, Scott C. Splinter, and John H. Perepezko University of Wisconsin-Madison	C415: Study on Climate Changes using Urban Parameterization and Pseudo Global Warming (PGW) Method in Kanto during Summer season Natsumi Kawano*, Alvin C.G. Varquez, Manabu Kanda, Makoto Nakayoshi, Masayuki Hara and Sachiho Adachi Tokyo Institute of Technology	D415: All-solid-state batteries using 5V LiNi _{0.5} Mn _{1.5} O ₄ spinel electrode and Li ₁₀ GeP ₂ S ₁₂ electrolyte Gwangseok Oh*, Ohmin Kwon, Masaaki Hirayama, Kota Suzuki, Ryoji Kanno Tokyo Institute of Technology
10:55-11:15	A416: The role of interfacial water molecules in anti-biofouling of self-assembled monolayers investigated by surface force measurements Taito Sekine*, Chikako Sato, Masaru Tanaka, Taka-aki Yano, Masahiko Hara and Tomohiro Hayashi Tokyo Institute of Technology	B416: Vortical Motions and Thermoacoustic Oscillation Characteristics of Turbulent Swirling Premixed Flame in a Cuboid Combustor Kozo Aoki*, Masayasu Shimura, Yoshitsugu Naka and Mamoru Tanahashi Tokyo Institute of Technology	C416: Flexible Cu(In,Ga)Se ₂ Solar Cells Fabricated on Polyimide-coated Soda-lime Glass Adiyudha Sadono*, Masashi Hino, Mitsuru Ichikawa, Kenji Yamamoto, Yasuyoshi Kurokawa, Makoto Konagai, and Akira Yamada Tokyo Institute of Technology	D416: Engineering the Solid Oxide Fuel Cell Electrocatalyst Infiltration Technique for Industrial Use Regis P. Dowd Jr., Shiwoo Lee, Yueying Fan, and Kirk Gerdes The University of Kansas
11:15-11:35	A417: Pyridine-catalyzed CO ₂ Reduction on p-GaP Electrodes: New Mechanistic Insights from Theoretical Investigations Martina Lessio*, Christoph Riplinger, Ana B. Muñoz-García and Emily A. Carter Princeton University	B417: The Role of Bond Coats in Sustained Peak Low-Cycle Fatigue Marissa Lafata*, Luke Rettberg, Tresa Pollock University of California, Santa Barbara	C417: Estimating Rural Crash Risk during Bushfires using Rare-Event Logistic Regression Alex G. Sims* University of South Australia	D417: Impact of Vanadyl Sulfate Source on Beginning-of-Lifetime Performance of All-Vanadium Redox Flow Batteries Andy W. Burch*, Erin L. Redmond, and Matthew M. Mench The University of Tennessee
11:35-11:55	A418: n-Channel Organic Field-Effect Transistors Based on Dithienodicyanoquinonediimine Kodai Iijima*, Tomofumi Kadoya, Pitayatanakul Oratai, Toshiki Higashino and Takehiko Mori Tokyo Institute of Technology	B418: TDLAS based NH ₃ Mole Fraction Measurement for Exhaust Diagnostics during SCR-Treatment using a fiber-coupled 2.2 μm DFB Diode Laser Felix Stritzke*, Oliver Diemel, Steven Wagner Technische Universität Darmstadt		D418: Asymmetric Membrane with Proton Conductivity and Hydrogen Separation Capability for Solid Oxide Fuel Cell Warit Ua-amnueychai* and Katsunori Hanamura Tokyo Institute of Technology
11:55-13:00	Lunch			
13:00-15:00	Group Oral Presentation			
	Room A Chair: T. Kodera Co-chair: N. Vongsoasup & Yanqing Wang	Room B Chair: S. Hayashi Co-chair: K. Kuzunuki & H. Hisazawa	Room C Chair: S. Muraishi Co-chair: R. Sugimoto & M. Ibrahim	Room D Chair: M. Hirayama Co-chair: M. Mochizuki & M. Tanaka
18:00-19:00	Evaluation Meeting & Award Screening (For Professors from Europe, Asia, the US, Australia, and Japan)			
19:00-21:00	Farewell Party & Award Ceremony			