

(As of November 20, 2015)

10:10-12:30

Room A

OS 1-2 Land/city conservation and disaster mitigation

Session Organizer/Chair **Hitoshi Shiohara** (Dept. of Architectural Engineering, School of Engineering, The University of Tokyo, Japan)

OS 1-2-1

An Example of Integrated Efforts in Japan toward More Resilient Society

Masayoshi Nakashima (Kyoto University, Japan)

OS 1-2-2

Some Experiences in Earthquake Disaster Mitigation in Mexico

Sergio M. Alcocer (Instituto de Ingenieria, UNAM, Ciudad Universitaria, Mexico)

OS 1-2-3

On Improvement of Urban Environment from the Viewpoint of Geo-construction Technology

Ikuo Towhata (President of Japanese Geotechnical Society, Japan)

OS 1-2-4

Lessons from the recent Cephalonia (2014) earthquake in Greece

George K. Gazetas (Civil Engineering, National Technical University of Athens, Greece)

OS 1-2-5

Disaster Risk: Interpretation of Two Japanese Episodes

Kaoru Takara (Disaster Prevention Research Institute, Kyoto University, Japan)

OS 1-2-6

Heritage City Vulnerability, Land Use Planning and Disaster Risk Reduction: Comparison of Delhi and Jaipur, India

Ram Babu Singh (Department of Geography, University of Delhi, India)

10:10-12:30

Room B-1

OS 2-2 Power generation technology

Session Organizers/Chairs **Yasuo Koizumi** (Japan Atomic Energy Agency, Sector of Nuclear Science Research, Japan)
Akira Yamada (Mitsubishi Heavy Industries, LTD., Japan)

OS 2-2-1

Power Generation Technology for 21st Century

Shozo Kaneko (Institute of Industrial Science, University of Tokyo, Japan)

OS 2-2-2

Grid Interconnection Requirements and Techniques for Distributed Power Generation in Japan

Hiromu Kobayashi (System Engineering Research Laboratory, Central Research Institute of Electric Power Industry, Japan)

OS 2-2-3

Environmentally Friendly Advanced Power System Technology

Satoshi Uchida (Engineering Headquarters, Mitsubishi Hitachi Power Systems, LTD., Japan)

OS 2-2-4

Nuclear Plant Technology Development toward Safety Enhancement and the Future

Kotaro Nakada (Power Systems Company, Toshiba Corporation, Japan)

10:10-12:30

Room B-2

OS 3-2 Supply chain of mineral resources and life cycle of human beings

Session Organizer/Chair **Takashi Nakamura** (Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan)

OS 3-2-1

Critical Materials and Clean Energy Technologies

Roderick G. Eggert (Division of Economics and Business, Colorado School of Mines & Critical Materials Institute, United States)

OS 3-2-2

Tracing the fate of industrial materials over time and across space: A contribution to dynamic MFA based on Input-Output analysis

Shinichiro Nakamura (Waseda University, Japan)

OS 3-2-3

Critical Metals and Recycling

Shinsuke Murakami (Dept. of Systems Innovation, Sch. of Engineering, the University of Tokyo, Japan)

OS 3-2-4

Resource Logistics of steel alloying elements focusing on steel scrap recycling

Kazuyo Matsubae (Graduate School of Engineering, Tohoku University, Japan)

OS 3-2-5

Dynamic Modeling of Material Flow and Sustainable Resources Management

Yasunari Matsuno (Dept. of Materials Engineering, The University of Tokyo, Japan)

OS 3-2-6

Appropriate management of e-waste in Japan and other Asian countries

Atsushi Terazono (Center for Material Cycles and Waste Management Research, National Institute for Environmental Studies, Japan)

10:10-12:30

Room C-1

OS 4-2 Net zero energy building technology, new air-conditioning and sanitary technology, green building technology, water utilization technology

Session Organizer **Toshio Yamanaka** (Department of Architectural Engineering, Division of Global Architecture, Graduate School of Engineering, Osaka University, Japan)

Chairs **Takashi Akimoto** (Department of Architecture and Building Engineering, Shibaura Institute of Technology, Japan)

Toshio Yamanaka (Department of Architectural Engineering, Division of Global Architecture, Graduate School of Engineering, Osaka University, Japan)

OS 4-2-1

Innovative technologies for building envelopes of zero-energy buildings

Takashi Inoue (Architecture, Tokyo University of Science, Japan)

OS 4-2-2

New Technologies in plumbing system of Building
Kyosuke Sakaue (Meiji University, SHASE, Japan)

OS 4-2-3

Development and Innovation for Next Generation HVAC
Shin-ichi Tanabe (Department of Architecture, Waseda University, Japan)

OS 4-2-4

State of the art of HVAC technology in Europe and America
Bjarne W. Olesen (Intl. Centre for Indoor Environment and Energy, Technical University of Denmark, Denmark)

OS 4-2-5

Renewable Energy Development for Buildings in China
Hongwei Tan (Mechanical & Energy Engineering Department, Tongji University, China/ UNEP-Tongji Institute of Environment for Sustainable Development)

OS 4-2-6

Combined Use of Natural Ventilation with HVAC Systems for the Commercial Buildings and Enclosed Stadiums in Japan
Kazuhiro Otaka (Engineering Department, NIKKEN SEKKEI LTD, Japan)

10:10-12:30

Room C-2

OS 5-2 Automotive technology, society and mobility in 2030

Session Organizer/Chair **Jin Kusaka** (Department of Modern Mechanical Engineering, School of Creative Science and Engineering, Waseda University, Japan)

OS 5-2-1

Developing Advanced High Efficiency and Low Emission Motor Vehicles toward 2030 and beyond
Yasuhiro Daisho (Modern Mechanical Engineering, Waseda University, Japan)

OS 5-2-2

Intelligent Mobility System toward 2030
Takeshi Mitamura (Mobility Services Laboratory, Nissan Motor, Japan)

OS 5-2-3

Contribution of Motorcycles and Their Technologies to the Expansion of Global Sustainability
Yuji Marui (Technology Development Division 3, Honda R&D Co., Ltd. Motorcycle R&D Center, Japan)

OS 5-2-4

Trend in Commercial Vehicles
Etsuo Yamamoto (Engineering Dept., Isuzu Motors Limited, Japan)

OS 5-2-5

Next-generation vehicle activity in Korea
Simsoo Park (Mechanical Engineering, Korea University, Korea)

10:10-12:30

Room D

OS 6-2 Trends in utilizing intellectual property for promoting innovation

Session Organizer/Chair **Shigeharu Yoshii** (IP Bridge, Inc., Japan)

OS 6-2-1

Trends in Utilizing Intellectual Property for Promoting Innovation
James A. Trueman (Ocean Tomo, LLC, United States)

OS 6-2-2

Invention with Engineered Innovation (IP Driven Innovation)
Steve Lee (Lpines Inc., United States)

OS 6-2-3

Patent Exploitation Strategies of Japanese Electronics Companies - Past and Future
Makoto Ogino (Graduate School of Innovation Studies, Tokyo University of Science, Japan)

OS 6-2-4

The Typical Business Creation Model in Japan vs The New Model as Executed
Kenichi Hashizume (Aromabit Ltd., Japan)

10:10-12:30

Room E

OS 7-2 Molecular imaging in early diagnosis/treatment

Session Organizer **Yasuhisa Fujibayashi** (Molecular Imaging Center, National Institute of Radiological Sciences, Japan)

Chairs **Yasuhisa Fujibayashi** (Molecular Imaging Center, National Institute of Radiological Sciences, Japan)
Yasuteru Urano (Graduate School of Pharmaceutical Sciences & Medicine, The University of Tokyo, Japan/CREST AMED)

OS 7-2-1

Insertable, wearable, and implantable micro-optical devices for early detection
Christopher H. Contag (Pediatrics, Stanford University, United States)

OS 7-2-2

Rapid intraoperative imaging of tiny tumors by newly developed fluorogenic probes for aminopeptidases and glycosidases
Yasuteru Urano (Graduate School of Pharmaceutical Sciences & Medicine, The University of Tokyo, Japan/CREST AMED)

OS 7-2-3

PET innovation for high resolution diagnosis and treatment imaging
Taiga Yamaya (Molecular Imaging Center, National Institute of Radiological Sciences, Japan)

OS 7-2-4

PET molecular imaging of regenerative medicine with iPS-derived dopaminergic cells in nonhuman primate models of Parkinson's disease
Hirotaka Onoe (Imaging Function Group, RIKEN, Center for Life Science Technologies, Japan)

OS 7-2-5

Neuroimaging-based biomarkers of neurodegenerative dementias
Makoto Higuchi (Molecular Imaging Center, National Institute of Radiological Sciences, Japan)

10:10-12:30

Room F

OS 8-1 Social missions of engineering and ethics for engineers

Session Organizers/Chairs **Tetsuya Miki** (Policy Planning and Research Office, University of Electro-Communications, Japan)

Jun Fudano (University Management Center, Tokyo Institute of Technology, Japan)

OS 8-1-1

ETHICS AND PROFESSIONAL CONDUCTS-KEY PREREQUISITES FOR ENGINEERS: Professional and Moral Responsibilities for Engineers to Combat Corruption?

Kamel Ayadi (Past President- Chair of the Fiftieth Anniversary Committee, WFEO, Tunisia)

OS 8-1-2

Anti-bribery Standards, Systems and Strategies for Optimising Engineering Infrastructure Projects Delivery

Martin Manuhwa (Anti-Corruption Committee - Chairman, World Federation of Engineering Organisation, Zimbabwe)

OS 8-1-3

How is the new code of ethics of JSCE going to change civil engineers' attitude?

Masaru Minagawa (Urban and Civil Engineering, Tokyo City University, Japan)

OS 8-1-4

Institute of Electrical Engineers of Japan initiatives related to engineering ethics

Yuji Okita (Applied Ethics Center for Engineering and Science, Kanazawa Institute of Technology, Japan)

OS 8-1-5

Engineering Intelligence: Ethics and Power

Maria J. Prieto Laffargue (WORLD FEDERATION OF ENGINEERING ORGANISATION, Spain)

10:10-12:30

Room G

OS 9-1 Promoting female leaders in engineering

Session Organizers **Miyoko O. Watanabe** (Japan Science and Technology Agency, Japan)

Kaoru Arakawa (School of Interdisciplinary Mathematical Sciences, Meiji University, Japan)

Chair **Miyoko O. Watanabe** (Japan Science and Technology Agency, Japan)

OS 9-1-1

How can we promote Gendered Innovations in R&D and R&Social Development?

Myung Ja Kim (WISET (Center for Women in Science, Technology and Engineering, ROK), Korea)

OS 9-1-2

ICTs for Women's Empowerment

Bashayer I AlAwad ("Women in Engineering", Standing Committee (WIE), World Federation of Engineering Organizations (WFEO), Kuwait)

OS 9-1-3

How to promote more women with scientific background in Japan

Iwao Miyamoto (Industry-University Collaboration Office, Ministry of Economy, Trade and Industry, Japan)

OS 9-1-4

Promoting female leaders in Japanese engineering

Reiko Fujita (ImPACT Program, Japan Science and Technology Agency, Japan)

OS 9-1-5

Women Engineers in Europe: where are we standing? What do we need more? Gender equality for better leadership in our societies

Yvette Ramos (SWISS ENGINEERING - Geneva Chapter, France)

OS 9-1-6

Confronting the Leadership Challenge: How ready are we?

Valerie I. Agberagba (Government, Engineer, Nigeria)

OS 9-1-7

Women and Underrepresented Minorities Entering STEM Education and Research Training: A Model for Preparing Students in the STEM Disciplines

P Ruby Mawasha (Engineering, Wright State University, United States)

10:10-12:30

Room H

OS 10-2 Environment and Water

Session Organizer/Chair **Kazunari Yoshimura** (President of Global Water Japan, Japan)

OS 10-2-1

Designing a green office simulating a microclimate from studies of jobs in Cordoba

Leonel A. Negrete (Industrial engineering, Universidad de Cordoba, Colombia)

OS 10-2-2

Tonle Sap Lake and Its Uncertain Future

Someth Uk (Office of the Council of Ministers, Authority for the Protection and Management of Angkor and Region of Siem Reap (Apsara), Cambodia)

OS 10-2-3

Harvesting Energy and Resource of Waste Waterworks in Japan

Kazunari Yoshimura (President of Global Water Japan, Japan)

OS 10-2-4

Strategic of maturity environmental for competitiveness in Health SMES

Leonel A. Negrete (Industrial engineering, Universidad de Cordoba, Colombia)

14:00-15:10

Room G

OS 9-2-1 Promoting young women in engineering: Part 1 Information and communication technology

Session Organizers **Mari Inoki** (Faculty of Informatics, Kogakuin University, Japan)
Sumie Morita (Information Systems Technologies Laboratory, FUJITSU LABORATORIES LTD., Japan)
Shigeko Mori (Rocket Software Japan Ltd., Japan)
Maki Iwakuma (Environmental Monitoring Dept. TOKEN C.E.E. Consultants Co., Ltd., Japan)
Facilitator **Nobuko Kishi** (Computer Science, Tsuda College, Japan)

OS 9-2-1-1

Empowering women in ICT in the Global Community
Nobuko Kishi (Computer Science, Tsuda College, Japan)

OS 9-2-1-2

Women developing their careers as ICT system engineers in Japanese companies
Saeko Awata (Global Services Division, Service Management Unit, Fujitsu Limited, Japan)

OS 9-2-1-3

Key to succeed as female engineers - Assessing your needs for support and feeling comfortable reaching out
Junko Fujiwara (Microsoft Office Division, Microsoft Development Co., Ltd., Japan)

OS 9-2-1-4

Different work styles between Japanese women and Chinese women
Lianzi Wen (Tokyo Software Development Laboratory, IBM Japan, Ltd, Japan)

OS 9-2-1-5

General Manager Human Resources at Wipro's Global Media and Telecom business unit
Murali Marath (Human Resources, Wipro Limited, India)

14:00-16:00

Room A

OS 1-3 Robot technology used at disaster sites and its operating system

Session Organizer **Yuji Watanabe** (Komatsu Ltd., Japan)
Chair **Hajime Asama** (Department of Precision Engineering, School of Engineering, The University of Tokyo, Japan)

OS 1-3-1

Disaster Robot Deployments and Missions
Robin R. Murphy (Texas A&M Center for Robot-Assisted Search and Rescue, United States)

OS 1-3-2

Legged and Flying Robots for Disaster Response
Roland Siegwart (Autonomous Systems Lab, ETH Zurich, Switzerland)

OS 1-3-3

R&D and Utilization of Unmanned Aircraft Systems
Shinji Suzuki (Department of Aeronautics and Astronautics, The University of Tokyo, Japan)

OS 1-3-4

Survey of ¹³⁷Cs in Marine Sediments off Tohoku Using Towed Gamma-Ray Spectroscopy
Blair Thornton (The University of Tokyo, Japan)

OS 1-3-5

Disaster Robotics for the Future Social Resilience

Satoshi Tadokoro (Graduate School of Information Sciences, Tohoku University, Japan / ImPACT / International Rescue System Institute / IEEE Robotics and Automation Society)

14:00-16:00

Room B-1

OS 2-3 Renewable energy sources and energy storage technologies

Session Organizers/Chairs **Satoshi Morozumi** (Smart Community Dept., New Energy and Industrial Technology Development Organization, Japan)
Takemi Chikahisa (Graduate School of Engineering, Hokkaido University, Japan)

OS 2-3-1

PROGRESS AND FUTURE PROSPECTS REGARDING RESEARCH AND DEVELOPMENT OF SECONDARY BATTERY TECHNOLOGIES FOR ENERGY STORAGE IN JAPAN

Tomohiko Ikeya (Materials Science Research Laboratory, Central Research Institute of Electric Power Industry, Japan)

OS 2-3-2

The Joint Center for Energy Storage Research (JCESR): Next Generation Energy Storage for Transportation and the Electricity Grid

George Crabtree (Argonne National Laboratory, United States)

OS 2-3-3

Battery Energy Storage System as Essential Facility for Stable Power System Operation

Kenji Iba (Electrical Engineering, Meisei University, Japan)

OS 2-3-4

Development of Sodium Sulfur Battery (NAS[®] battery) and Application

Tomio Tamakoshi (NAS Battery Div., NGK INSULATORS, LTD., Japan)

14:00-16:00

Room B-2

OS 3-3 Water resource and environmental management

Session Organizer/Chair **Keisuke Hanaki** (Department of Urban Engineering, The University of Tokyo, Japan)

OS 3-3-1

Scientific Background and Implementation of Sustainable Urban Water Management

Helmuth Kroiss (Vienna University of Technology, Austria)

OS 3-3-2

Desalination and Membrane Technology

Stephen R. Gray (Institute for Sustainability and Innovation, Victoria University, Australia)

OS 3-3-3

Research and technology development for sustainable water use

Hiroaki Tanaka (Graduate School of Engineering, Kyoto University, Japan)

OS 3-3-4

Development of sustainable urban water use system adapted to climate change

Hiroaki Furumai (Research Center for Water Environment Technology, University of Tokyo, Japan)

OS 3-3-5

Integrated Intelligent Satellite System (IISS) for Regional Water Resources Utilization

Kazuki Akamatsu (Kogakuin University, Japan)

14:00-16:00

Room C-1

OS 4-3 Measuring, control, security technology, robot technology

Session Organizer/Chair **Yoshihiro Nakabo** (Robot Innovation Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan)

OS 4-3-1

A Testbed for Enhancing Control System Security

Masatoshi Enomoto (Control System Security Center, Japan / Nara Institute of Science and Technology)

OS 4-3-2

A Multifaceted Approach for Securing Critical Infrastructures

Benessa Defend (Research and Development, European Network for Cyber Security, Netherlands)

OS 4-3-3

Robotic Devices for Nursing Care

Hirohisa Hirukawa (Robot Innovation Research Center, National Institute of Advanced Industrial Science and Technology, Japan)

OS 4-3-4

Robot Development and Demonstration for Infrastructure Maintenance and Disaster Response

Noriaki Ando (National Institute of Advanced Industrial Science and Technology, Japan)

14:00-16:00

Room C-2

OS 5-3 Marine technology, ships, ocean energy utilization, marine resource developments

Session Organizer/Chair **Takanori Hino** (Faculty of Engineering, Yokohama National University, Japan)

OS 5-3-1

Next Generation HHI HD-12000 Drill Ship

Young Chul Lee (HHI, Korea)

OS 5-3-2

Environmentally-friendly Engines for Future Ships

Koji Takasaki (Laboratory of Engine and Combustion, Kyushu University, Japan)

OS 5-3-3

Present State and Future Challenge of the Tidal Current Power Generation in Japan

Yusaku Kyojuka (Faculty of Engineering Sciences, Kyushu University, Japan)

OS 5-3-4

Deep-sea mining: A new challenge for Japan

Tetsuo Yamazaki (Osaka Prefecture University, Japan)

14:00-16:00

Room D

OS 6-3 Role of finance in industrial innovation

Session Organizer **Masaaki Komiya** (Research Institute of Capital Formation, Development Bank of Japan Inc., Japan)

Chairs **Masaaki Komiya** (Research Institute of Capital Formation, Development Bank of Japan Inc., Japan)

Kanenori Ishibashi (Graduate School of System Design and Management, Keio University, Japan)

OS 6-3-1

Innovations in the benchmarking of infrastructure investments: a roadmap and recent progress

Frederic Blanc Brude (Infrastructure Investment Institute, EDHEC Business School, Singapore)

OS 6-3-2

The Role of DBJ in industrial innovation

Masamitsu Kawasumi (Regional Planning Department, Development Bank of Japan Inc., Japan)

OS 6-3-3

A Toolkit for Inclusive Capitalism

Paul Druckman (International Integrated Reporting Council, United Kingdom)

OS 6-3-4

Sustainable Investment: An Innovation in Investment

Mariko Kawaguchi (Research Department, Daiwa Institute of Research, Japan)

OS 6-3-5

Architecture framework for an effective "hub" design for potential in-house innovators in large-sized enterprises in Japan

Kanenori Ishibashi (Graduate School of System Design and Management, Keio University, Japan)

14:00-16:00

Room E

OS 7-3 Recovery from disease: Part 1 (Nanomedicine)

Session Organizer/Chair **Kazunori Kataoka** (Department of Materials Engineering, Graduate School of Engineering, The University of Tokyo, Japan)

OS 7-3-1

Development of supramolecular nanodevices for cancer diagnosis and therapy

Nobuhiro Nishiyama (Chemical Resources Laboratory, Tokyo Institute of Technology, Japan / Innovation Center of Nanomedicine (iCONM))

OS 7-3-2

DNA-Functionalized Nanoparticles for Reliable Diagnostics

Mizuo Maeda (Bioengineering Laboratory, RIKEN Institute, Japan)

OS 7-3-3

Injectable Hydrogel for Sustained Delivery of Drugs

Doo Sung Lee (Chemical Engineering, Sungkyunkwan University, Korea)

OS 7-3-4

Cationic Nanohydrogel Particles as Safe Carriers for Therapeutic Oligonucleotide Delivery

Rudolf Zentel (Chemistry, University of Mainz, Germany)

OS 7-3-5

Polymeric Micelles for Multi-Drug Delivery

Glen Kwon (University of Wisconsin, United States)

14:00-18:10

Room F

OS 8-2 Science & technology based on the societal trust & communication, Part 1: Fukushima Daiichi--the lessons learned

Session Organizers **Takashi Sawada** (The Japan Federation of Engineering Societies, Japan)

Masaki Shiratori (Yokohama National University, Japan)

Chair **Yoshiaki Oka** (Japan Atomic Energy Commission, Cabinet Office, Japan)

OS 8-2-1

Views of the Japanese Academia on the Fukushima Daiichi Nuclear Accident

Genki Yagawa (Nuclear Safety Research Association, Japan)

OS 8-2-2

Status of Fukushima Daiichi Nuclear Power Station after the Great East Japan Earthquake

Jun Matsumoto (Project Planning Department, Fukushima Daiichi Decontamination & Decommissioning Engineering Company, Tokyo Electric Power Company, Japan)

OS 8-2-3

RESEARCH AND DEVELOPMENT CONDUCTED BY IRID FOR NUCLEAR DECOMMISSIONING IN FUKUSHIMA

Kiichi Suganuma (Executive Director, IRID (International Research Institute for Nuclear Decommissioning), Japan)

OS 8-2-4

Global Nuclear Power Generation Moves Forward

J. Robert Sims (ASME, United States)

OS 8-2-5

IAEA Nuclear Knowledge Management Initiatives - Post Fukushima

John F. de Grosbois (Nuclear Energy, International Atomic Energy Agency, Austria)

OS 8-2-6

Measures taken at hamaoka nuclear power station for further safety

Hiroki Kimura (Chubu Electric Power Co., Inc., Japan)

OS 8-2-7

Radiation Health Risk Management after the Fukushima Daiichi Nuclear Power Plant Accident

Shunichi Yamashita (Atomic Disease Institute, Nagasaki University, Japan)

OS 8-2-8

Utilization of Nuclear Power in Japan

Yoshiaki Oka (Central government building No.8 6F, Japan Atomic Energy Commission, Japan)

15:20-16:30

Room G

OS 9-2-2 Promoting young women in engineering: Part 2 Social infrastructure technology

Session Organizers **Mari Inoki** (Faculty of Informatics, Kogakuin University, Japan)

Sumie Morita (Information Systems Technologies Laboratory, FUJITSU LABORATORIES LTD., Japan)

Shigeko Mori (Rocket Software Japan Ltd., Japan)

Maki Iwakuma (Environmental Monitoring Dept. TOKEN C.E.E. Consultants Co., Ltd., Japan)

Facilitator **Osamu Kusakabe** (National College of Technology, Ibaraki College, Japan)

OS 9-2-2-1

Part 2 Social Infrastructure Technology

Osamu Kusakabe (National College of Technology, Ibaraki College, Japan)

OS 9-2-2-2

History of Women Civil Engineers in Japan - Roles of SWCE and JSCE

Kiko Yamada-Kawai (Graduate School, Department of Civil Engineering, Tokyo Institute of Technology, Japan)

OS 9-2-2-3

Several thoughts as supervisor of female employees at construction contractors

Satoshi Imamura (Technology Center, Taisei Corporation, Japan)

OS 9-2-2-4

Madam, This is our Metro! - Female Civil Engineer in Charge of Metro Construction in India -

Reiko Abe (Oriental Consultants India Pvt. Ltd., Japan)

OS 9-2-2-5

Experience to prevent the career discontinuity and to become as a leader of women environmental engineer at Korea

Lee Ji Hyung (Environ Departs, SAMWOO ANC, Korea)

16:20-18:10

Room A

OS 1-4 Strengthening national interests and creating new industries using big data

Session Organizer/Chair **Hiroshi Fujiwara** (Broad Band Tower, Inc., Japan)

OS 1-4-1

Big Data Analytics is Critical for National Security

Phillip L. Morris (Chief Technology Officer, BT Japan, Japan)

OS 1-4-2

Disaster Big Data Infrastructure using sensing technology with Chip Scale Atomic Clock

Narito Kurata (Faculty of Industrial Technology, Tsukuba University of Technology, Japan)

OS 1-4-3

Categorizing Smart cities and Big data foci of Japan

Hisakazu Okamura (Faculty of Urban Innovation, Professor, Asia University, Japan)

OS 1-4-4

Development of a distributed Energy System and utilize Big Data to optimal infrastructure for local community

Hitoshi Arima (Yokohama Smart Community, Japan)

OS 1-4-5

Most Comprehensive Infrastructure Database CORINS of JACIC

Yasushi Kawanai (Management and Planning Department, Japan Construction Information Center, Japan / Japan Society of Civil Engineers / Pacific Engineer)

16:20-18:10

Room B-1

OS 2-4 Energy saving and efficient energy use

Session Organizers/Chairs **Hideo Yoshida** (Department of Aeronautics and Astronautics, Kyoto University, Japan)
Toshihisa Shimizu (Department of Science and Engineering, Tokyo Metropolitan University, Japan)

OS 2-4-1

New generation power electronics for tomorrow

Hiromichi Ohashi (NPERC-J, Japan)

OS 2-4-2

New Trends in Power Electronics for High-Power Applications

Hirofumi Akagi (Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan)

OS 2-4-3

Energy saving and efficient energy use by power electronic systems

Frede Blaabjerg (Energy Technology, Aalborg University, Denmark)

OS 2-4-4

Numerical Simulation of Solid Oxide Fuel Cell Anodes

Naoki Shikazono (The University of Tokyo, Japan)

OS 2-4-5

Thermochemical energy storage for waste heat recoveries and utilizations

Yukitaka Kato (Research Laboratory for Nuclear Reactors, Tokyo Institute of Technology, Japan)

16:20-18:10

Room B-2

OS 3-4 Advanced recycling technology

Session Organizer/Chair **Shuji Owada** (Resources and Environmental Engineering, Waseda University, Japan)

OS 3-4-1

The Importance of Sensor Technology for Recycling Processes

Mattias G Berwanger (Department of Processing and Recycling, RWTH Aachen University, Germany)

OS 3-4-2

The Importance of the Physical Separation Process in Resource Recycling

Tatsuya Oki (National Institute for Advanced Industrial Science and Technology, Japan)

OS 3-4-3

Hydrochemical routes to recycle NiMH batteries and fluorescent lamps

Christian Ekberg (Chemistry and Chemical Engineering, Chalmers, Nuclear Chemistry / Industrial Materials Recycling, Sweden)

OS 3-4-4

Novel chemical processes for solvent extraction of PGM and rare metals

Atsushi Muramatsu (Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan)

OS 3-4-5

Biotechnological recycling of precious and rare metals sourced from post-consumer products

Yasuhiro Konishi (Chemical Engineering, Osaka Prefecture University, Japan)

16:20-18:10

Room C-1

OS 4-4 Next generation broadcasting systems

Session Organizers **Yoshihiro Fujita** (Graduate School of Science and Engineering, Ehime University, Japan)

Miki Haseyama (Graduate School of Information Science and Technology, Hokkaido University, Japan)

Yoshiaki Shishikui (Meiji University, Japan)

Chair **Masahiro Kawakita** (Three-Dimensional Image Research Division, Japan Broadcasting Corporation Science & Technology Research Laboratories, Japan)

OS 4-4-1

Countdown to the ultimate television

Toru Kuroda (Science & Technology Research Laboratories, Japan Broadcasting Corporation (NHK), Japan)

OS 4-4-2

TV Globo and the Future of Television

Ana Eliza Faria e Silva (TV GLOBO, Brazil)

OS 4-4-3

Beyond the Media Technology Horizon - Prospects for systems and standards

David Wood (European Broadcasting Union, Switzerland)

OS 4-4-4

Glasses-Free 3D Display Systems Being Developed at NICT

Naomi Inoue (National Institute of Information and Communications Technology, Japan)

16:20-18:10

Room C-2

OS 5-4 Aeronautical technology

Session Organizer **Jiro Nakamichi** (Japan Aerospace Exploration Agency (JAXA), Japan)

Chair **Takahira Aoki** (Dept. of Aeronautics and Astronautics, Graduate School of Engineering, The University of Tokyo, Japan)

OS 5-4-1

Mitsubishi Regional Jet (MRJ)

Nobuo Kishi (MITSUBISHI AIRCRAFT CORPORATION, Japan)

OS 5-4-2

Next generation propulsion systems technology: Minimising the impact of aviation on the environment

Alan T Newby (Aerospace, Rolls-Royce plc, United Kingdom)

OS 5-4-3

Research and Development Activities for Aeronautical Technologies in JAXA

Kazuhiro Nakahashi (The Aeronautical Technology Directorate, Vice President, Japan Aerospace Exploration Agency (JAXA), Japan)

16:20-18:10

Room D

OS 6-4 Value-added manufacturing for competitiveness

Session Organizer/Chair **Yoshiki Shimomura** (Graduate School of System Design, Tokyo Metropolitan University, Japan)

OS 6-4-1**Engineering approach for value-added service and smart manufacturing**

Toshiya Kaihara (Graduate School of System Informatics, Kobe University, Japan)

OS 6-4-2**Envisioning Conditions of Manufacturing in Future from the Viewpoint of Environmental Sustainability**

Yasushi Umeda (Department of Precision Engineering, School of Engineering, the University of Tokyo, Japan)

OS 6-4-3**Service Engineering towards Restoration of Japanese industries**

Masaaki Mochimaru (Human Informatics Research Institute, National Institute of Advanced Industrial Science and Technology, Japan)

OS 6-4-4**Integrated Product and Service Offerings - A means to achieve competitiveness through value-added manufacturing**

Mattias Lindahl (Department of Management and Engineering (IEI), Linköping University, Sweden)

OS 6-4-5**Diagnosis of Servitisation Potential-Proposal of a Strategic Diagnosis Framework dedicated to SMEs**

Xavier Boucher (Ecole des Mines de Saint Etienne, France)

OS 6-4-6**The Leading Program for Innovation of Manufacturing in Japan**

Naoya Sasaki (Bureau of Science, Technology and Innovation, Cabinet Office, the Government of Japan, Japan / Hitachi, Ltd.)

16:20-18:10

Room E

OS 7-4 Recovery from disease: Part 2 (Minimally invasive therapy and personalized treatment)

Session Organizers **Masakatsu G. Fujie** (Modern Mechanical Engineering, Waseda University, Japan)

Kazuo Tanishita (Research Organization for Nano & Life Innovation, Waseda University, Japan)

Chairs **Masakatsu G. Fujie** (Modern Mechanical Engineering, Waseda University, Japan)

Rainer Bischoff (Corporate Research, KUKA Roboter GmbH, Germany)

OS 7-4-1**Robotics for minimally invasive therapy and personalized treatment**

Masakatsu G. Fujie (Modern Mechanical Engineering, Waseda University, Japan)

OS 7-4-2**Computer Aided Surgery**

Takeyoshi Dohi (Precision Machinery Engineering, Tokyo Denki University, Japan)

OS 7-4-3**Medical Robots Toward Minimally Invasive Surgery**

Dong-Soo Kwon (Department of Mechanical Engineering, KAIST, Korea)

OS 7-4-4**KUKA robot based medical robotics solutions**

Rainer Bischoff (Corporate Research, KUKA Roboter GmbH, Germany)

OS 7-4-5**The importance of clinical needs for the development of medical devices (The activity of Commons for Medicine and Engineering Japan)**

Kazuo Tanishita (Research Organization for Nano & Life Innovation, Waseda University, Japan)

16:50-18:10

Room G

SKL 9-3 (1) Features of engineering education in Japan / (2) World Trend of ICT in Education

Session Organizers **Takashi Komeda** (Shibaura Institute of technology, Japan)

Yoichi Kemmochi (Japanese Society for Engineering Education, Japan)

Chair **Yoichi Kemmochi** (Japanese Society for Engineering Education, Japan)

SKL 9-3-(1)**Global Collaboration in Engineering Education through Network of Networks**

Yoichiro Matsumoto (Japanese Society for Engineering Education, Japan / RIKEN)

SKL 9-3-(2)**The Future of e-Learning: A Challenge to Explore the New World**

Shuichi Fukuda (System Design Management, Keio University, Japan)