

(As of November 20, 2015)

9:00-10:40

Room A

OS 1-5 Creating a resilient economy

Session Organizer **Masatoshi Urashima** (Kajima Corporation, Japan)
Chair **Akira Morita** (National Institute of Population and Social Security Research, Japan)

OS 1-5-1

A Policy Research Challenge towards Governance of Global Critical Infrastructure Systems under Extra-Extra-Ordinary Disaster Risks: Vitae Systems of Systems Survivability

Norio Okada (School of Policy Studies, Kwansei Gakuin University, Japan)

OS 1-5-2

Applying financial expertise to design a resilient future -Solution of BCM ratings-

Yoshiaki Hiruma (Director of Enterprise Resilience Rated Loan Program (BCM rating), Development Bank of Japan, Inc., Japan)

OS 1-5-3

Modelling the resilient policy-making infrastructure by using systems-engineering architecture through the D-Case

Toshiyuki Yasui (Graduate School of System Design and Management, Keio University, Japan)

OS 1-5-4

Japan's Resilience Policy on Oil Supply Chain after the 3.11 Earthquake

Daisuke Asano (Policy Planning Division (Oil, Gas, Coal and Metals), Natural Resource and Fuel Department, Ministry of Economy, Trade and Industry (METI), Japan)

9:00-10:40

Room B-1

OS 2-5 Energy management

Session Organizer/Chair **Yoshiyuki Shimoda** (Division of Energy and Environmental Engineering, School of Engineering, Osaka University, Japan)

OS 2-5-1

Energy management in industry - Success factors and way forward

Patrik Erik Thollander (Department of Management and Engineering, Division of Energy Systems, Linköping University, Sweden)

OS 2-5-2

Development and application of DECC database

Shigeki Kametani (Graduate School, Tokyo University of Marine Science and Technology, Japan)

OS 2-5-3

Energy Management and Conservation in the Japanese Residential Sector

Yumiko Iwafune (Project Professor, Collaborative Research Center for Energy Engineering (CEE), Institute of Industrial Science (IIS), the University of Tokyo, Japan)

OS 2-5-4

Findings from the Experimental Studies of Demand Responsive Load Shedding in Japanese Residential and Commercial Sectors

Masahito Takahashi (Central Research Institute of Electric Power Industry, Japan)

9:00-10:40

Room B-2

OS 3-5 Process technology for sustainability

Session Organizer/Chair **Masahiko Hirao** (Department of Chemical System Engineering, The University of Tokyo, Japan)

OS 3-5-1

Circulation society for sustainability: Some processing technologies for resource recovery and environmental purification

Toyohisa Fujita (Graduate School of Engineering, The University of Tokyo, Japan)

OS 3-5-2

Standardization and its Effects on Chemical Industry including Energy-saving Applications

Kazuyoshi Baba (Daicel Corporation, Japan)

OS 3-5-3

Carbon Capture and Storage in Korea: Present and Future

Chonghun Han (School of Chemical and Biological Engineering, Seoul National University, Korea)

OS 3-5-4

Supercritical Route for Green Materials

Tadafumi Adschiri (Wpi-AIMR, Tohoku University, Japan)

9:00-10:40

Room C-1

OS 4-5 Construction technology and management

Session Organizer **Takashi Imaishi** (Civil Engineering Division, Taisei Corporation, Japan)

Chairs **Takashi Imaishi** (Civil Engineering Division, Taisei Corporation, Japan)
Akio Kasuga (Sumitomo Mitsui Construction, Japan)

OS 4-5-1

The Development of Low Carbon Dam Construction Technique of Rock-Filled Concrete

Xuehui An (Department of Hydraulic Engineering, Tsinghua University, China)

OS 4-5-2

A Wind Crossing the Sea Bottom -Construction of the Bosphorous Strait Crossing Rail Tunnel-

Takashi Imaishi (Civil Engineering Division, Taisei Corporation, Japan)

OS 4-5-3

Innovative construction technologies for effective utilization of densely populated urban space

Hiroshi Dobashi (Maintenance and Traffic Management Department, Metropolitan Expressway Company Limited, Japan)

OS 4-5-4

Butterfly web effects in bridge design and construction

Akio Kasuga (Sumitomo Mitsui Construction, Japan)

9:00-10:40

Room C-2

OS 5-5 Innovative telecommunications technologies

Session Organizers **Atsushi Murase** (DOCOMO Technology, Inc., Japan)
Tokumichi Murakami (Faculty of Science and Engineering, Waseda University, Japan)

Chair **Atsushi Murase** (DOCOMO Technology, Inc., Japan)

OS 5-5-1**Latest Trends in Mobile Wireless Systems and Towards Actualization of the Next Generation 5G System**

Narumi Umeda (Research Laboratories, NTT DOCOMO, INC., Japan)

OS 5-5-2**Optical Networks for Global Human Networking**

Atul Srivastava (NTT Electronics America, United States)

OS 5-5-3**Innovative ICT Infrastructure Generating Social Intelligence**

Motoo Nishihara (Cloud System Research Laboratories, NEC Corporation, Japan)

9:00-10:40

Room D

OS 6-5 Innovation of cutting-edge technology and next generation devices

Session Organizer/Chair **Jun'ichi Sone** (National Institute for Materials Science, Japan)

OS 6-5-1**Innovation enables Moore's Law alive and well - The building blocks of the IoT era -**

Tsuyoshi Abe (Intel K.K., Japan)

OS 6-5-2**Novel Devices for Forthcoming Society**

Noburo Fukushima (Research and Development Center, Toshiba Corporation, Japan)

OS 6-5-3**Grenoble, 50 years involvement in microelectronics engineering**

Jean Charles Guibert (Technology Transfer and Commercialization, CEA-Leti-MINATEC, France)

OS 6-5-4**Semiconductor Technology Development in Open-Innovation Era**

Toshihiko Kanayama (National Institute of Advanced Industrial Science and Technology, Japan)

9:00-10:40

Room E

OS 7-5 Recovery from disease: Part 3 (Regenerative medicine, tissue engineering)

Session Organizer/Chair **Teruo Okano** (Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan)

OS 7-5-1**Cell-sheet-based tissue engineering for heart regeneration**

Tatsuya Shimizu (Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Japan)

OS 7-5-2**Articular Cartilage Repair and Regeneration in Osteoarthritis of the Knee Using Cell Sheet Technology**

Masato Sato (Orthopaedic Surgery, Tokai University School of Medicine, Japan)

OS 7-5-3**Endoscopic transplantation utilizing cell sheet technology to prevent stricture after esophageal ESD**

Takeshi Ohki (Department of Surgery, Institute of Gastroenterology, Tokyo Women's Medical University, Japan / Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University)

OS 7-5-4**Cell and tissue production for clinical application**

Masahiro Kino-oka (Department of Biotechnology, Osaka University, Japan)

9:00-10:40

Room F

OS 8-3 Science & technology based on the societal trust & communication, Part 2: For the society of robust and secure infrastructure

Session Organizers/Chairs **Akira Wada** (Tokyo Institute of Technology, Japan)

Chitoshi Miki (Tokyo City University, Japan)

OS 8-3-1**Realizing a Robust Built Infrastructure**

Gregory A MacRae (Civil and Natural Resources Engineering, University of Canterbury, New Zealand)

OS 8-3-2**Root causes of Fukushima Nuclear Power Station accident and lessons to be learned**

Hideyuki Horii (Department of Civil Engineering, School of Engineering, The University of Tokyo, Japan)

OS 8-3-3**The Practice and the Role of Earthquake Engineering Researchers in Constructing a Resilient Society**

Nobuo Fukuwa (Disaster Mitigation Research Center Nagoya University, Japan)

OS 8-3-4**Joint statement and cooperation of 30 disaster-related academic societies of Japan -Global sharing of the findings from the past great earthquake disasters in Japan-**

Masako Yoneda (Keio Advanced Research Centers, Keio University, Japan)

9:00-10:40

Room G

OS 9-3 World human resource development and engineering 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)

OS 9-3-1**New Challenges of Korean Engineering Education under Korean Creative Economy**

Kwang Sun Kim (Korean Society for Engineering Education, Korea)

OS 9-3-2

Quality Teaching and Learning: An engineering education research approach

Lyn Brodie (University of Southern Queensland, Australia)

OS 9-3-3

Re-creating learning, teaching and university education

Martti Raevaara (School of Arts, Design and Architecture, Aalto University, Finland)

OS 9-3-4

The State of Women in Engineering Education in the United States: National Trends and How the American Society for Engineering Education (ASEE) is Promoting Women in Engineering Education

Brian L Yoder (Assessment, Evaluation, and Institutional Research, American Society for Engineering Education, United States)

9:00-10:40

Room H

OS 10-3 Others

Session Organizer/Chair **Mikio Ishiwatari** (Japan International Cooperation Agency, Japan)

OS 10-3-1

Mathematical Modelling for Bio-nutrient Removal during Anaerobic Sewage Treatment Using Acti-zyme as Bio-catalyst for Sustainable Sewage Treatment

Mercy M. Manyuchi (Chemical and Process Systems Engineering, Harare Institute of Technology, Zimbabwe/Cape Peninsula University of Technology)

OS 10-3-2

SMART FACTORY

Pawel Malinowski (The Faculty of Foundry Engineering, University of Science and Technology in Cracow, Poland)

OS 10-3-3

Support for Reconstruction Planning, and Preparation for a Major Disaster: Focusing on the Participation of Workshops in Nagasaki District, Iwaki City, Fukushima Prefecture

Nobuo Kawahara (Disaster Assistance Commission, The institution of Professional Engineers, Japan (IPEJ), Japan)

OS 10-3-4

Macro-Surface Modifications of Subsonic Flow on Airplane Winglets

Mohd Danial Ibrahim (Mechanical and Manufacturing Engineering Department, Faculty of Engineering, Universiti Malaysia Sarawak, Malaysia)

OS 10-3-5

Building the next generation of computational modelling tools for the management of natural hazards

Vincent Lemiale (Digital Productivity, CSIRO, Australia)

OS 10-3-6

How can disaster risk management be strengthened by learning from disasters

Mikio Ishiwatari (Japan International Cooperation Agency, Japan)

11:00-12:40

Room A

OS 1-6 Resilience in manufacturing and energy sectors

Session Organizer **Masatoshi Urashima** (Kajima Corporation, Japan)

Chair **Taketoshi Taniguchi** (Policy Alternatives Research Institute, The University of Tokyo, Japan)

OS 1-6-1

Interdependency Analysis of Multiple Lifeline Systems

Kazuo Furuta (Resilience Engineering Research Center, The University of Tokyo, Japan)

OS 1-6-2

Resilience of Electric Power System in response to Natural Disasters

Yoshiharu Shumuta (Civil Engineering Research Laboratory, Central Research Institute of Electric Power Industry, Japan)

OS 1-6-3

Measures and a policy for the steady oil supply on the assumption of a big earthquake in metropolitan area

Takahisa Hiruma (Vice President, Asiam Research Institute, Inc., Japan)

OS 1-6-4

Improvement and Dissemination of BCM to Manufacturing Industries in Japan

Hiroaki Maruya (International Research Institute of Disaster Science, Tohoku University, Japan/Business Continuity Advancement Organization)

11:00-12:40

Room B-1

OS 2-6 Smart grid, smart community

Session Organizer/Chair **Akihiko Yokoyama** (School of Frontier Sciences, The University of Tokyo, Japan)

OS 2-6-1

Smart Grid and Community Related Demonstration Projects in NEDO

Satoshi Morozumi (Smart Community Dept., New Energy and Industrial Technology Development Organization, Japan)

OS 2-6-2

Roadmap for Advanced Distribution Management System (ADMS) in the Integrated Grid

John Simmins (Power Delivery and Utilization, Electric Power Research Institute (EPRI), United States)

OS 2-6-3

Smart Grid Research and Development in Europe: Overview and Selected Highlights

Kai Strunz (Chair of Sustainable Electric Networks and Sources of Energy, TU Berlin, Germany)

OS 2-6-4

Smart Grid Initiatives of Tokyo Electric Power Company (TEPCO)

Hiroshi Okamoto (Tokyo Electric Power Company, Japan)

11:00-12:40

Room B-2

OS 3-6 Agricultural machinery and food engineering, agricultural mechanization, agricultural structures

Session Organizers/Chairs **Hiroshi Shimizu** (Laboratory of Agricultural System Engineering, Graduate School of Agriculture, Kyoto University, Japan)
Hiroyuki Itoh (DAIKIN Industries, Ltd. Technology Innovation Center, Japan)

OS 3-6-1**Cooperative Harvesting Operation by Unmanned and Manned Combines**

Michihisa Iida (Graduate School of Agriculture, Kyoto University, Japan)

OS 3-6-2**Precision Agriculture Based Food Production for Global Population 9 Billion Time**

Naoshi Kondo (Division of Environmental Science & Technology, Graduate School of Agriculture, Kyoto University, Japan)

OS 3-6-3**Synchronization of Biological Rhythms in Plant Factories**

Hirokazu Fukuda (Osaka Prefecture University, Japan)

11:00-12:40

Room C-1

OS 4-6 Innovation for maintenance and renovation of sustainable civil infrastructure

Session Organizer/Chair **Koichi Maekawa** (Department of Civil Engineering, The University of Tokyo, Japan)

OS 4-6-1**INFRASTRUCTURE CONDITION IN JAPAN AND A NEW R&D PROGRAM INFRASTRUCTURE MAINTENANCE**

Yozo Fujino (Institute of Advanced Sciences, Yokohama National University, Japan)

OS 4-6-2**Strategic maintenance and repair of concrete structures**

Hiroshi Yokota (Faculty of Engineering, Hokkaido University, Japan)

OS 4-6-3**Large-scale Renovations, Maintenance and Management of Civil Engineering Structures along the Tokaido Shinkansen**

Toshio Otake (Technology Research and Development Department, Central Japan Railway Company, Japan)

OS 4-6-4**Condition Assessment for Service Life Extension of the Constructed Infrastructure**

Helmut Wenzel (VCE Vienna Consulting Engineers ZT GmbH, Austria)

OS 4-6-5**A General Maintenance Framework for Utilizing Different Sector Maintenance Technologies**

Shozo Takata (Department of Industrial and Management Systems Engineering, School of Creative Science and Engineer, Waseda University, Japan)

11:00-12:40

Room C-2

OS 5-6 Information security and privacy

Session Organizers **Kazue Sako** (NEC Cloud Systems Research Labs., Japan)

Hiroaki Kikuchi (School of Interdisciplinary Mathematical Sciences, Meiji University, Japan)

Chair **Kazue Sako** (NEC Cloud Systems Research Labs., Japan)

OS 5-6-1**Consent Management for Personal Data Stores using UMA**

Maciej P. Machulak (Synergetics (Belgium), Poland/Newcastle University)

OS 5-6-2**Personal Information Bank: How to help people integrate and use their own personal information under their control?**

Ryosuke Shibasaki (Center for Spatial Information Science, University of Tokyo, Japan)

OS 5-6-3**The Necessity for Easy Privacy and Security**

Andrew A Adams (Centre for Business Information Ethics, Meiji University, Japan)

11:00-12:40

Room D

OS 6-6 Advanced functional materials

Session Organizer **Hiroshi Sugimoto** (Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Japan)

Chair **Toshiyuki Watanabe** (Graduate School of Engineering, Tokyo University of Agriculture and Technology)

OS 6-6-1**Functional Materials for Photonics**

Nasser Peyghambarian (Optical Sciences, University of Arizona, United States)

OS 6-6-2**Cyanostilbene Based pi-Conjugated Floppy Molecules Showing Programmed Self-Assembly for Advanced Charge-Transporting Functions**

Soo Young Park (Materials Science and Engineering, Seoul National University, Korea)

OS 6-6-3**Novel Photonics Polymers for 4K/8K Real-Color Imaging System**

Yasuhiro Koike (Faculty of Science and Technology, Keio University, Japan)

OS 6-6-4**Application of Functional Polymer Materials in Petroleum Engineering**

Gufan Zhao (SINOPEC Research Institute of Petroleum Engineering, China)

11:00-12:40

Room E

OS 7-6 Sustaining good health (Medical and healthcare devices)

Session Organizer/Chair **Ichiro Sakuma** (Graduate School of Engineering, The University of Tokyo, Japan)

OS 7-6-1

Understanding brain plasticity on body representations to promote their adaptive functions - Embodied-brain Systems Science -

Jun Ota (Research into Artifacts, Center for Engineering (RACE), The University of Tokyo, Japan)

OS 7-6-2

Robots will outperform conventional rehabilitation

Robert Riener (Health Sciences and Technology, ETH Zurich, Switzerland)

OS 7-6-3

Novel Underwear "Smart-Wear" with Stretchable and Flexible Electrodes Enables Insensible Monitoring Electrocardiograph

Naruhiko Shiozawa (College of Sport and Health and Science, Ritsumaikan University, Japan)

OS 7-6-4

Advanced technologies for assisting minimally invasive therapies

Ichiro Sakuma (School of Engineering, The University of Tokyo, Japan)

11:00-12:40

Room F

OS 8-4 Engineering qualification systems and ethics

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 8-4-1

Introduction to the role of IPEJ in the enlightenment for engineering ethics

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

OS 8-4-2

APEC Engineer -A Platform for Mobility in Asia Pacific Region

Seng Chuan Tan (The Institution of Engineers, Singapore)

OS 8-4-3

Japan Accreditation Board for Engineering Education (JABEE) for Higher Education Program related to Professional Engineer (PE)

Kikuo Kishimoto (Japan Accreditation Board for Engineering Education (JABEE), Japan / Graduate school of Engineering, Tokyo Institute of Technology)

11:00-12:40

Room G

OS 9-4 Development and contribution of the Japanese engineering education to the world

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

Yoichi Kemmochi (Japanese Society for Engineering Education, Japan)

Chair **Takashi Komeda** (Shibaura Institute of Technology, Japan)

OS 9-4-1

Japanese Monozukuri style teaching at Thai-Nichi Institute of Technology

Krisada Visavateeranon (Thai-Nichi Institute of Technology, Thailand)

OS 9-4-2

Japanese Style Engineering Education in MJIT

Rubiyah Yusof (Malaysia Japan International Institute of Technology, Malaysia)

OS 9-4-3

A Model of Knowledge Transfer from Japan to Egypt: A Case Study of E-JUST

Pokharel Kumar Ramesh (Center for Japan-Egypt Cooperation in Science and Technology, Kyushu University, Japan)

OS 9-4-4

KOSEN Education - Past, Present and Future

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