

# General Session Program

\*Each presentation consists of 10-minute oral presentation & 4-minute discussion.

15, March 2021, Mon.

## Session A : Organic waste: Thermal treatment (13:00-14:30, 15, March 2021, Mon.)

Chair: Tomonori Ishigaki (National Institute for Environmental Studies)

- A-1 Thermal Modelling of the Torrefaction Process  
*Alok Dhaundiyal, Szent István University, Hungary*
- A-2 Gas and Tar Formation Characteristics in the Gasification Process for Biomass Materials  
*Katsuya Kawamoto, Okayama University, Japan*
- A-3 Co-pyrolysis of cellulose and polyethylene: Prediction of pyrolyzate yields using response surface methodology  
*Shengyu Xie, Tohoku University, Japan*
- A-4 Calculation of Thermochemical Kinetic Parameters of Several Types of Biomass Using Friedman Isoconversional method  
*Soyoung Han, Korea Institute of Machinery and Materials, Korea*
- A-5 Sponsor Movies  
*DOWA Holdings, Hitachi Zosen, JFE Engineering, NIPPON STEEL ENGINEERING, MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING*

## Session B : Waste management: Situations and analysis (13:00-14:30, 15, March 2021, Mon.)

Chair: Kosuke Kawai (National Institute for Environmental Studies)

- B-1 A Study on Operational Consciousness of Environmental Learning Facilities from a National Survey in Japan  
*Eiichi Suzuki, The Environmental Education of KUNISAKI CLEAN CENTER & Kyoto University, Japan*
- B-2 Analysis of Factors Affecting to Waste Behavior of Public in Hanoi  
*Nguyen My Linh, Toyo University, Japan*
- B-3 Questionnaire Survey to Clarify Current Situation of Waste Banks in Surabaya, Indonesia  
*Afif Faiq Muhamad, Hokkaido University, Japan*
- B-4 Accepting attitude toward a final disposal facility of mercury wastes with increase of cognitive aversion toward mercury  
*Fumitake Takahashi, Tokyo Institute of Technology, Japan*
- B-5 Historical trend and Background of Municipal Solid Waste Incineration in China  
*Li Yuting, Kyoto University, Japan*
- B-6 Development of Internationally Common Methodology for the Sorting Analysis of Food Waste from Household Sources - Comprehension and Deviation on the Proposed Categories  
*Kohei Watanabe, Teikyo University, Japan*

## Session C : Waste management: Case studies and practices (14:45-16:15, 15, March 2021, Mon.)

Chair: Kohei Watanabe (Teikyo University)

- C-1 Solid Waste Collection System in Hoi An City – The Status, Problems and Challenges  
*Dinh Cuong Le, Okayama University, Japan & University of Science, Hue University, Vietnam*
- C-2 Solid Waste Composting Financial Feasibility through Cash Flow Analysis - Case Study in Rabat Region, Morocco  
*Mohamed Hamza Cherki, Toyo University, Japan*
- C-3 Environmental Management practices in Logistics: An overview of Nacala Logistics Companies in Mozambique  
*Murarene Gabriel, Kyoto University, Japan*
- C-4 Improving waste landfilling practices in Africa: the case of Maputo  
*Paulo V. Queiroz Sousa, EX Research Institute Ltd, Japan*
- C-5 3R Policy and its Practice in Waste Management in Palestine  
*Suleiman Abu Mfarreh, Ministry of Local Government (MoLG), Palestine*
- C-6 Progress in China's Municipal Solid Waste Management and Residents' Behavior: A Case Study in Dongying City  
*Sun Jie, Kyoto University, Japan*

(to be continued)

15, March 2021, Mon. (continued)

**Session D : Organic waste: Hydrothermal treatment (16:30-18:00, 15, March 2021, Mon.)**

Chair: Shogo Kumagai (Tohoku University)

- D-1 Hydrothermal carbonization of black liquor of papermaking into activated carbon and its adsorption of Cr(VI)  
*Xiaomin Hong, Shanghai University, China*
- D-2 Effect of Hydrothermal Treatment on Co-Combustion Interactions and Mechanism of Oil Sludge Char with Biomass  
*Hao Xu, Tokyo Institute of Technology, Japan*
- D-3 Effect of combined hydrothermal treatment and water washing on coconut fiber demineralization and pyrolysis behaviour  
*Douglas Hungwe, Tokyo Institute of Technology, Japan*
- D-4 Lignin conversion to low molecular weight bio-oil over HZSM-5 in subcritical water  
*Masud Rana, Chonnam National University, Korea.*
- D-5 Study of Changing Fuel Characteristics of EFB by Hydrothermal Treatment  
*Rabin Nepal, Kongju National University, Korea*
- D-6 Sponsor Movies  
*MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING,  
NIPPON STEEL ENGINEERING, DOWA Holdings*

**Session E : Plastic waste: Recycling (16:30-18:00, 15, March 2021, Mon.)**

Chair: Michikazu Kojima (Institute of Developing Economies, Japan External Trade Organization)

- E-1 Sponsored presentation  
*Kawasaki Heavy Industries, Ltd.*
- E-2 An Interim Report on the Pilot Project for Recycling Urban Mined Plastics  
*Ikuyo Kikusawa, Fukuoka Asian Urban Research Center, Japan*
- E-3 Scale-up and Economic Assessment of a Split-Phase Glycolysis process for the Recycling of Flexible Polyurethane Foams Wastes  
*Ana M. Borreguero, University of Castilla-La Mancha, Spain*
- E-4 Recycling practices and material flow of PET waste in South Korea  
*Jin Hong Im, Chungnam National University, Korea*
- E-5 Sponsor Movies  
*MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING,  
NIPPON STEEL ENGINEERING, JFE Engineering, Hitachi Zosen, DOWA Holdings*

16, March 2021, Tue.

**Session F : Plastic waste: Consumer behavior (13:00-14:30, 16, March 2021, Tue.)**

Chair: Yasuhiko Hotta (Institute for Global Environmental Strategies)

- F-1 Material Flow of single-use plastic of food packaging generated by retailers in Taiwan  
*Hsin-Tien Lin, National Cheng Kung University, Taiwan*
- F-2 Material Composition Survey of Plastic Waste from Households in Japan  
*Junya Yano, Kyoto University, Japan*
- F-3 Estimating the Social Value of a Marine Plastics Upcycling Project  
*Aya Yoshida, National Institute for Environmental Studies, Japan*
- F-4 Plastic Waste Reduction Measures on a Consumer Level based on Determinants of Environment-Conscious Behavior  
*Reiko Sodeno, Shibaura Institute of Technology, Japan*
- F-5 Impact of Banning and Standardising of Single-Use Plastics in the Fast Food Industry  
*Thi-Kim-Chi Do, Griffith University, Australia*
- F-6 Sponsor Movies  
*Hitachi Zosen, JFE Engineering*

**Session G : Hazardous material in water and soil (13:00-14:30, 16, March 2021, Tue.)**

Chair: Shunichi Honda (UNEP)

- G-1 Biodegradable Chelator-Assisted Washing and Post-Treatment of Arsenic Contaminated Soil  
*Shafiqur Rahman, Kanazawa University, Japan*
- G-2 Degradation of perfluorooctanesulfonic acid (PFOS) through cold plasma-based wastewater treatment  
*Seungbin Oh, Jeonbuk National University, Korea*
- G-3 Cellulose-based adsorbent for arsenite removal as a waste-free operation  
*Keisuke Nakakubo, Kanazawa University, Japan*
- G-4 Selective Separation of Technetium-99 from Aqueous Matrix  
*M. Ferdous Alam, Fukushima University, Japan*
- G-5 Heat-Treatment Control during Preparation of V<sub>2</sub>O<sub>5</sub>/TiO<sub>2</sub> Catalysts for H<sub>2</sub>S Abatement  
*Jae Hwan Yang, Chungnam National University, Korea*
- G-6 Survey on per- and polyfluoroalkyl substances in leachates and treatment processes in waste landfill site  
*Yoshinori Yabuki, Research Institute of Environment, Agriculture and Fisheries Osaka Prefecture, Japan*

**Session H : Plastic waste: New approach (14:45-16:15, 16, March 2021, Tue.)**

Chair: So Sasaki (Chuo University)

- H-1 Statistics and Spatial Approach to Quantify the Unmanaged Plastic Waste Generation from the Land to DKI Jakarta River, Indonesia  
*Elprida Agustina, Institut Teknologi Bandung, Indonesia*
- H-2 Database creation and analysis of corporate initiatives regarding plastic resource circulation  
*Huang Wei Hsuan, Kyoto University, Japan*
- H-3 Detection of Microplastics in Incineration Bottom Ash  
*Zhan Yang, Tongji University, China*
- H-4 A new simple purity measurement of waste polyethylene-polypropylene mixture by IR analysis with an internal standard compound  
*Kazutoshi Ikenaga, Sojo University, Japan*
- H-5 Forecasting plastic leakage from MSW disposal in Thailand  
*Awassada Phongphiphat, King's Mongkut University of Technology Thonburi  
& Center of Excellence on Energy Technology and Environment, Thailand*

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16, March 2021, Tue. (continued)

**Session I : Hazardous material in ash (14:45-16:15, 16, March 2021, Tue.)**

Chair: Reiko Sodeno (Shibaura Institute of Technology)

- I-1 Migration of Cr-containing Ti-nanominerals from coal to coal fly ash  
*Zhao Yueyuan, Tokyo Institute of Technology, Japan*
- I-2 Characteristics of Metal(loid)s, Chlorine and Brominated Flame Retardants in Soil from MSW Open Dumping and Burning Site in Kabwe, Zambia  
*Mengmei Zhang, Kyoto University, Japan & JSPS Postdoctoral Fellow, Japan*
- I-3 Optimization of heavy metal removal method for recycling of paper sludge ash  
*Tae-Yeol Choi, Changwon National University, Korea*
- I-4 Environmental Impact Analysis of Mercury Release in Malaysia  
*Muhamad Nabil Fikri bin Abdul Hamid, Okayama University, Japan*
- I-5 Congener distribution of polychlorinated naphthalenes in municipal solid waste incineration fly ash  
*Satoshi Mizutani, Osaka City University, Japan*
- I-6 Quantification of anthropogenic mercury releases by category in China in response to Minamata Convention on Mercury  
*Habuer, Okayama University, Japan*

17, March 2021, Wed.

**Session J : Organic waste: Biological treatment (14:45-16:15, 17, March 2021, Wed.)**

Chair: Satoshi Mizutani (Osaka City University)

- J-1 Sponsored presentation  
*Hitachi Zosen Corporation*
- J-2 Sponsored presentation  
*TAKUMA Co., Ltd.*
- J-3 Performance of Anaerobic Hybrid Reactor for the Generating Biogas of the High-Strength Fresh Leachate from a Municipal Waste Transfer Station  
*Sakulrat Suttiprapa, King's Mongkut University of Technology Thonburi, Thailand*
- J-4 Immobilized microalgae based domestic wastewater treatment and biodiesel extraction from produced biomass  
*Soyean Park, Jeonbuk National University, Korea*
- J-5 Accelerated composting by applying compost product as inoculum  
*Qilong Li, Tokyo Institute of Technology, Japan*
- J-6 Effect of cold plasma pre-treatment on Waste Activated Sludge (WAS) for Biochemical Methane Potential (BMP) enhancement  
*Gerardo Oswaldo Ortiz Vanegas, Jeonbuk National University, Korea*

**Session K : MFA and SFA for waste management (14:45-16:15, 17, March 2021, Wed.)**

Chair: Junya Yano (Kyoto University)

- K-1 Estimation of Homologue-based Emissions of Short-Chain Chlorinated Paraffins in Japan  
*Junichiro Koshiba, Kyoto University, Japan*
- K-2 Resource efficiency evaluation based on MFA in Korea  
*Seungmin Ji, Chungnam national university, Korea*
- K-3 Material Inventory Analysis of Residential Buildings in Homs, Syria for Rehabilitation  
*Samer Zydia, Hiroshima University, Japan*
- K-4 Fossil Carbon Content in Wood-Based Materials Estimated by Elemental Analysis  
*Naoki Takeuchi, Kyoto University, Japan*
- K-5 Reanalysis of Production Statistics on Wood-based Materials and Wood Adhesives in Japan By Data Reconciliation Method  
*Yasuhiro Hirai, Kyoto University, Japan*
- K-6 Sponsor Movies  
*MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING,  
NIPPON STEEL ENGINEERING, DOWA Holdings*

**Session L : Organic waste: Treatment technology and assessment (16:30-18:00, 17, March 2021, Wed.)**

Chair: Katsuya Kawamoto (Okayama University)

- L-1 Assessment of nitrogen emissions from the various installation of waste treatment plants to support waste management to mitigate climate change  
*Monika Suchowska-Kisielewicz, University of Zielona Góra, Poland*
- L-2 Optimal struvite recovery from anaerobic digestate using central composite design  
*Sojeong Cheon, Jeonbuk National University, Korea*
- L-3 Feasibility Study of Biomass Waste Recycling System in University Campus  
*Peni Astrini Notodarmojo, Okayama University, Japan*
- L-4 Disposing Large Amount of Food from their Fridge? : A Case Study with Waste Composition Analysis and Questionnaire Survey in Japan  
*Hajime Yamakawa, Kyoto Prefectural University, Japan*
- L-5 Food Waste from Household Sources in Japan: Comparison of Sorting Analysis of Urban and Rural Areas  
*Tomoko Okayama, Taisho University, Japan*

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17, March 2021, Wed. (continued)

**Session M : Gas and water treatment, resource recovery (16:30-18:00, 17, March 2021, Wed.)**

Chair: Hideki Yoshida (Muroran Institute of Technology)

- M-1 Purification of LFG and Utilization of CO<sub>2</sub> by Extracting Calcium Hydroxide from MSWI Fly Ash  
*Kyumin Jang, Yonsei University, Korea*
- M-2 Simulation of the mineral carbonation process with metal ion separation using electrolysis of industrial wastewater  
*Wonyong Choi, Yonsei University, Korea*
- M-3 Removal and recovery of NO by MnO<sub>2</sub>/Mg-Al layered double hydroxide  
*Tanya Kurutach, Tohoku University, Japan*
- M-4 Efficient Recovery of Gold and Platinum from Waste Sources Using Dithiocarbamate-modified Cellulose  
*Foni B. Biswas, Kanazawa University, Japan & University of Chittagong, Bangladesh*
- M-5 Marine Macroalgae: Effect of Synthetic Aminopolycarboxylate Ligand on Metal (Cd and Cu) Uptake Mechanism  
*Okviyoandra Akhyar, Kanazawa University, Japan  
& Islamic University of Kalimantan Muhammad Arsyad Al Banjari, Indonesia*
- M-6 Influence of Nanoclay Particles on Rheological and Mechanical Properties of Polyamide 12/Waste Rubber Composites  
*Friday Nwankwo Archibong, Institut National des Sciences Appliquées Centre Val de Loire, France*

18, March 2021, Thu.

**Session N : ELV management (13:00-14:30, 18, March 2021, Thu.)**

Chair: Yuko Saito (Tohoku University)

- N-1 Sponsor Movies  
*JFE Engineering, Hitachi Zosen*
- N-2 Upscaling and Advanced Evaluation of Wet and Dry Rod-Milling Processes for Recovering of Cu, PVC, and Plasticizer from Waste Wire Harnesses  
*Harendra Kumar, Tohoku University, Japan*
- N-3 Toward the Creation of the Asian xEV Battery Recycling Zone  
*So Sasaki, Chuo University, Japan*
- N-4 A facile and environment-friendly method for leaching of Ni, Cd and Co from the spent Ni-Cd batteries over polyvinyl chloride (PVC) in subcritical water  
*Md Ishtiaq Hossain Khan, Chonnam National University, Korea*
- N-5 Motorcycle Recycling Flow in Japan: the number of End-of-Life motorcycles (ELMCs)  
*Takumi Yamane, Tokyo City University, Japan*
- N-6 Sponsored presentation  
*Ecommit Corporation*

**Session O : LCA for waste management (13:00-14:30, 18, March 2021, Thu.)**

Chair: Yasuhiro Hirai (Kyoto University)

- O-1 An approach to develop city waste management strategy in developing countries: A case study of Negombo City in Sri Lanka  
*Rajeev Kumar Singh, Institute for Global Environmental Strategies, Japan*
- O-2 Environmental Impact Scenario of Thermal Waste Treatment Based on Life Cycle Analysis in Denpasar City, Bali  
*I Wayan Koko Suryawan, Universitas Pertamina, Indonesia*
- O-3 Greenhouse Gas Reduction through Reusable Glass Bottles from a Life Cycle Perspective  
*Yuka Mukai, Kyoto University, Japan*
- O-4 A Comparison between Energy Recovery Systems for Municipal Solid Waste concerning with Energy Balance and Life Cycle CO<sub>2</sub> Emission  
*Geun-Yong Ham, National Institute for Environmental Studies, Japan*
- O-5 Strategy for Introducing Sewage Sludge Energy Utilization Systems at Sewage Treatment Plants in Major Cities in Japan: Technology Introduction Scenario  
*Kehua Wang, Ochanomizu University, Japan*
- O-6 Strategy for Introducing Sewage Sludge Energy Utilization Systems at Sewage Treatment Plants in Major Cities in Japan: Comparative Assessment  
*Toyohiko Nakakubo, Ochanomizu University, Japan*

**Session P : Disaster waste management (16:30-18:00, 18, March 2021, Thu.)**

Chair: Misuzu Asari (Kyoto University)

- P-1 Sponsored presentation  
*MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING Co., Ltd.*
- P-2 Implementation of workflow for systematic understanding of disaster waste management  
*Haruna Masuda, Kyoto University, Japan*
- P-3 Significance of Disaster Debris Reduction for Disaster Waste Management  
*Nagahisa Hirayama, Nagoya University, Japan*
- P-4 Performance of Gravel-Tire Chips Drains in Mitigating Liquefaction  
*Yutao Hu, Kyushu University, Japan*
- P-5 Time-varying discharge model and distribution simulation of disaster waste  
*Takeshi Fujiwara, Okayama University, Japan*
- P-6 Sponsored presentation  
*DOWA Holdings, NIPPON STEEL ENGINEERING,  
MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING*

19, March 2021, Fri.

**Session Q : E-waste management / Industrial waste management (13:00-14:30, 19, March 2021, Fri.)**

Chair: Aya Yoshida (National Institute for Environmental Studies)

- Q-1 Screening survey of plastics used in WEEE for conversion to secondary raw materials  
*Yuko Saito, Tohoku University, Japan*
- Q-2 Estimating the Proper Electric Power for the Physical Shredding of the massage chair and treadmill in recycling plant  
*Jihwan Park, Korea Electronics Recycling Cooperative (KEREC), Korea*
- Q-3 Resource Efficiency and Depollution – Conducting a stakeholder process to derive enhanced treatment requirements for WEEE  
*Christian Kitazume, German Environment Agency, Germany*
- Q-4 Economic assessment of building demolition methods in Hanoi, Vietnam  
*Ngoc Han Hoang, National Institute for Environmental Studies, Japan*
- Q-5 Characterization of compaction and CBR properties of recycled concrete aggregates with different fines contents for roadbed materials  
*Hong Nam Thai, Saitama University, Japan & National University of Civil Engineering, Vietnam*

**Session R : Waste management challenges (13:00-14:30, 19, March 2021, Fri.)**

Chair: Ryo Tajima (National Institute for Environmental Studies)

- R-1 'Zero Budget System' A New Mechanism in Promoting Separation of Recyclables at Source in Malaysia  
*Faisal Bin Ariffin, Hokkaido University, Japan*
- R-2 Regionalization and Capacity Strengthening of Solid Waste Management Service Providers in Palestine: Lessons Learned from a Technical Assistance Project  
*Mitsuo Yoshida, Japan International Cooperation Agency (JICA), presently at International Network for Environmental and Humanitarian Cooperation (iNehc), Nonprofit Inc., Japan*
- R-3 Open Dump to Resource Recovery: Shifting Paradigms for Sustainable Solid Waste Management in Municipalities of Nepal  
*Dhundi Raj Pathak, Tribhuvan University, Nepal*
- R-4 Shifting toward Resource Management in Remote Area: A Case Study of Lake Toba, Indonesia  
*Miwa Tatsuno, Institute for Global Environmental Strategies, Japan*
- R-5 Development of a process to invoke community actions to reduce canal waste: a case in Bangkok  
*Ryo Tajima, National Institute for Environmental Studies, Japan*
- R-6 Sponsor Movies  
*Hitachi Zosen, JFE Engineering*

**Session S : Waste management with COVID-19 / Medical waste management (14:45-16:15, 19, March 2021, Fri.)**

Chair: Hajime Yamakawa (Kyoto Prefectural University)

- S-1 Solid Waste Management Inside Saphan Hin Park in Thailand Under the COVID-19 Control Measures  
*Sineenart Puangmanee, Phuket Rajabhat University, Thailand*
- S-2 COVID-19 impact on household food and plastic waste generation in Bangkok  
*Chen Liu, Institute for Global Environmental Strategies, Japan*
- S-3 Repercussions of clinical waste co-incineration in municipal solid waste incinerator during COVID-19 pandemic  
*Dong-Ying Lan, Tongji University, China*
- S-4 Challenges of Healthcare Waste Management in the Gaza Strip, Palestine as a Case Study  
*Reem Abukmeil, Gaza Medical Waste Management Program, Japan International Cooperation Agency (JICA) - Palestine Office, presently at Dalhousie University of Canada, Canada*
- S-5 Improper Disposal of Medical Wastes in Clinics: An Impact of Waste Volume  
*Daisuke Sugimoto, Tokyo Institute of Technology, Japan*
- S-6 JICA's Initiatives on Waste Management during COVID-19  
*Sho Miura, Japan International Cooperation Agency, Japan*