

# EcoDesign 2019 Detailed Program

Notes

OS = Organized Session

[A1-1], [P1-1], etc.: Paper IDs in the USB Proceedings

[E]: Included in the E-book published by Springer after the symposium

Presenting authors are underlined.

Monday, November 25, 2019

8:30-9:30	Registration (302 Lobby)
9:30-10:15	Opening Session (302)
10:15-11:00	Plenary Keynote 1 (302) <b>The Role of Design in Accelerating the Transition to a Circular Economy</b> <i>Morlet, Andrew</i>   Chief Executive Officer, Ellen MacArthur Foundation
11:00-11:45	Plenary Keynote 2 (302) <b>Ricoh's Initiatives to Realize a Circular Economy</b> <i>Hanada, Kazumi</i>   Corporate Vice President, RICOH Industry Co., Ltd.
11:45-13:00	Lunch (311, 312, 313, 314)

Monday, November 25, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<b>[A1] Sustainable Society</b>	<b>[B1] Sustainable Waste Management</b>	<b>[C1] OS: Advancing Circular Economy in the Manufacturing Industry: The Importance of Design, Business Models, and Policies (1)</b>	<b>[D1] Sustainable Manufacturing</b>	<b>[E1] OS: Transitions and Innovations Supporting the Energy Transition (1)</b>
	Chair: Otto, Harald E. (Polytechnic University of Marche, Italy)	Chair: Mohamed, Ahmad Fariz (Universiti Kebangsaan Malaysia, Malaysia)	Chair: Sakao, Tomohiko (Linköping University, Sweden)	Chair: Kondoh, Shinsuke (National Institute of Advanced Industrial Science and Technology, Japan)	Chair: Chapman, Andrew J. (Kyushu University, Japan)
	<b>[A1-1] Innovation Ecosystem from Local Areas to Solve Social Issues</b> <u>Iwamoto, Takashi</u> (Keio University, Japan)	<b>[B1-1][E] Ecological Smart and Sustainable Waste Management: A Conceptual Framework</b> <u>Fatimah, Yun Arifatul</u> ; Muminingsih, Rochiyati; Setiawan, Agus (Universitas Muhammadiyah Magelang, Indonesia)	<b>[C1-1] Potential Impacts of EU Circular Economy Policy on Japanese Manufacturers</b> <u>Umeda, Yasushi</u> (1); Kitagawa, Kazunori (2); Hirose, Yayoi (3); Akaho, Keiko (4); Sakai, Yuko (5); Ota, Makoto (6) 1: The University of Tokyo, Japan; 2: Japan Productivity Center, Japan; 3: Toyo University, Japan; 4: The Nikkan Kogyo Shimbun, Japan; 5: Japan Business Federation (Keidanren), Japan (Currently, Toyota Motor Corp., Japan); 6: Japan Business Federation (Keidanren), Japan	<b>[D1-1][E] Analysis of Manufacturing Costs for Powder Metallurgy (PM) Gear Manufacturing Processes: a Case Study of a Helical Drive Gear</b> <u>Kianian, Babak</u> ; Andersson, Carin (Lund University, Sweden)	<b>[E1-1][E] Techno-economic Analysis of a Hybrid Solar-Hydrogen-Biomass System for Off-grid Power Supply</b> <u>Takatsu, Naoto</u> ; Farzaneh, Hooman (Kyushu University, Japan)
13:00-14:20	<b>[A1-2][E] Energy Efficiency within Sustainable Development in Asia: A Boundary Infrastructure and Knowledge Based Frame of Reference</b> <u>Otto, Harald Ernst</u> (Polytechnic University of Marche, Italy)	<b>[B1-2] Gaps between the Japanese Waste Management System and the European Circular Economy</b> <u>Kitagawa, Kazunori</u> (Japan Productivity Center, Japan)	<b>[C1-2][E] Ecodesign and the Circular Economy: Conflicting Policies in Europe</b> <u>Dalhammar, Carl</u> ; Miliou, Leonidas; Richter, Jessika Luth (Lund University, Sweden)	<b>[D1-2] Resource Consumption and Environmental Impact Analysis for Die Casting</b> <u>Liu, Weipeng</u> ; Peng, Tao; Tang, Renzhong (Zhejiang University, China)	<b>[E1-2][E] Dynamic Simulation of Woody Biomass Co-generation System Considering Time-varying Heat Demand: A Japanese Community Bathhouse Case Study</b> <u>Nakatsuka, Noriaki</u> (1); Kishita, Yusuke (2); Akamatsu, Fumiteru (1) (1: Osaka University, Japan; 2: The University of Tokyo, Japan)

<p>[A1-3][E] Towards Intercity Cooperation: Comparison of Spatial Transport Energy Efficiency between Central and Peripheral Cities in Japan <u>Kosai, Shoki (1,2)</u>; Yamasue, Eiji (2) (1: Kyoto University; 2: Ritsumeikan University)</p>	<p>[B1-3] Introduction of an Organic Waste Recovery Based Integrated Solid Waste Management Program for the Cities of Pampang, Philippines: Environmental and Socio-Economic Implications <u>Galura, Jonas Lapid</u>; Yabar, Mostacero Helmut Friedrich; Mizunoya, Takeshi (University of Tsukuba, Japan)</p>	<p>[C1-3] Towards a Roadmap for a Resource Efficient and Effective Manufacturing Industry in Sweden <u>Milios, Leonidas (1)</u>; Dalhammar, Carl (1); Sakao, Tomohiko (2); Lindahl, Mattias (2) (1: Lund University, Sweden; 2: Linköping University, Sweden)</p>	<p>[D1-3] Durability Evaluation of Additive Manufactured Biodegradable Composite Reinforced by Natural Fiber in Various Conditions <b>Reproducing Usage Environment</b> <u>Yaguchi, Yuta (1)</u>; Takeuchi, Kenji (2); Waragai, Tadashi (2); Tateno, Toshitake (2) (1: The University of Tokyo, Japan; 2: Meiji University, Japan)</p>	<p>[E1-3][E] Process Modelling for an Efficient and Dynamic Energy Consumption for Fresh Produce in Protected Cropping Samaranayake, Premaratne; Lopaticki, Goran; Liang, Wei; Tam, Vivian; Chen, Zhonghua; <u>Lan, Yi-Chen</u>; (Western Sydney University, Australia)</p>	
<p>[A1-4] Combining Future Design and Scenario Design Methodology: A Case Study in Suita City <u>Uwasu, Michinori (1)</u>; Kishita, Yusuke (2); Nomaguchi, Yutaka (1); Hara, Keishiro (1) (1: Osaka University, Japan; 2: The University of Tokyo, Japan)</p>	<p>[B1-4][E] Study on the Quantitative Evaluation of the Greenhouse Gas (GHG) Emission in the Sewage-sludge Treatment System <u>Liang, Zhiyi (1)</u>; Matsumoto, Toru (1); Zhang, Lei (2); Liu, Bing (3) (1: The University of Kitakyushu, Japan; 2: China Energy Conservation DADI Environmental Remediation Co., Ltd., China; 3: Shandong Jianzhu University, China)</p>	<p>[C1-4][E] Stakeholders' Influence towards Sustainability Transition in Textile Industries <u>Chari, Arpita Ramesh (1)</u>; Despeisse, Mélanie (1); Barletta, Ilaria Giovanna (1); Johansson, Björn (1); Siewers, Ernst (2) (1: Chalmers University of Technology, Sweden; 2: DyeCoo Textile Systems B.V, The Netherlands)</p>	<p>[D1-4] Fatigue EcoDesign Based on Effect of Plate Thickness for Cruciform Welded Joints of Rolled Steel <u>Hayakawa, Masao</u>; Maeda, Yoshio (National Institute for Materials Science, Japan)</p>	<p>[E1-4][E] CO2 Removal Using the Sun and Forest: An Environmental Life Cycle Assessment of a Solar &amp; Biomass Hybrid Carbon Capture and Sequestration Plant Takeda, Shutaro (1); Chapman, Andrew J. (2); <u>Nam, Hoseok (1)</u> (1: Kyoto University, Japan; 2: Kyushu University, Japan)</p>	
14:20-14:40	Coffee (315 Lobby)				

Monday, November 25, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p>[A2] OS: Future Design (1)</p> <p>Chair: Hara, Keishiro (Osaka University, Japan)</p>	<p>[B2] Life Cycle Sustainability Assessment (1)</p> <p>Chair: Hu, Allen H. (National Taipei University of Technology, Taiwan)</p>	<p>[C2] OS: Advancing Circular Economy in the Manufacturing Industry: The Importance of Design, Business Models, and Policies (2)</p> <p>Chair: Dalhammar, Carl (Lund University, Sweden)</p>	<p>[D2] Disassembly and Recycling (1)</p> <p>Chair: Hiraoka, Hiroyuki (Chuo University, Japan)</p>	<p>[E2] OS: Transitions and Innovations Supporting the Energy Transition (2)</p> <p>Chair: McLellan, Benjamin C. (Kyoto University, Japan)</p>
14:40-16:00	<p>[A2-1][Keynote] Future Design <u>Saijo, Tatsuyoshi (1,2)</u> (1: Research Institute for Humanity and Nature, Japan; 2: Kochi University of Technology, Japan)</p>	<p>[B2-1][E] Progress for Life Cycle Sustainability Assessment by Means of Digital Lifecycle Twins - A Taxonomy <u>Riedelsheimer, Theresa (1)</u>; Neugebauer, Sabrina (2); Lindow, Kai (1) (1: Fraunhofer Institute for Production Systems and Design Technology, Germany; 2: RWTH Aachen University, Germany)</p> <p>[B2-2] A Framework to Incorporate Aquatic Plastic into Life Cycle Assessment of Plastic Products <u>Abeynayaka, Amila</u>; Itsubo, Norihiro (Tokyo City University, Japan)</p>	<p>[C2-1] Global Multi-Value Circulation - Activities toward Circular Economy in Japan - <u>Halada, Kohmei</u> (Sustainability Design Institute, Japan)</p> <p>[C2-2] Ecodesign Addressing Business Models and Social Sustainability <u>Sakao, Tomohiko</u> (Linköping University, Sweden)</p>	<p>[D2-1] A Novel Electrical Disintegration Method for Cu/Ag Recovery from Photovoltaic Panel <u>Sawamura, Yukihiko (1)</u>; Lim, Soowon (1); Nishi, Maiko (1); Maruyama, Shuhei (1); Namihira, Takao (2); Tokoro, Chiharu (1) (1: Waseda University, Japan; 2: Kumamoto University, Japan)</p> <p>[D2-2] Product Clustering for Improved Collection, Sorting and Recycling of WEEE Plastics <u>Boudewijn, Alexander (1)</u>; Peeters, Jef (1); Catrysse, Dirk (1); Dewil, Reginald (1,2); Campadello, Luca (3); Accili, Alessia (3); Dufloy, Joost (1) (1: KU Leuven, Belgium; 2: Vrije Universiteit Amsterdam, The Netherlands; 3: ECODOM, Italy)</p>	<p>[E2-1][E] Exergy and Environmental Analysis of a Bio-Hydrogen Supply Chain Using Data Envelope Analysis <u>Hara, Daisuke</u>; Misaki, Chiharu; Sugihara, Hiromu; Kako, Seiya; Katayama, Noboru; Dowaki, Kiyoshi (Tokyo University of Science, Japan)</p> <p>[E2-2][E] A Feasibility Study of a Japanese Power to Gas Concept - A Case Study of Rokkasho Village - <u>Mizuno, Yuji</u>; Ishimoto, Yuki; Iida, Shigeki (The Institute of Applied Energy, Japan)</p>

<p><b>[A2-2] Economic Experiments and Future Design</b>  <u>Kotani, Koji</u>  (Kochi University of Technology, Japan)</p>	<p><b>[B2-3][E] Environmental and Economic Impacts of Biofouling on Marine and Coastal Heat Exchangers</b>  <u>Theradapuzha Mathew, Ninan (1);</u>  Kronholm, Johan (2);  Bertilsson, Klas (3);  Despeisse, Mélanie (1);  Johansson, Björn (1)  (1: Chalmers University of Technology, Sweden;  2: JOIN Business &amp; Technology AB, Sweden;  3: Alfa Laval Corporate AB, Sweden)</p>	<p><b>[C2-3][E] Sustainable Supply Chain Management of Clothing Industry – Current Policy Landscape and Roles and Limitation of Multi-Stakeholder Initiatives</b>  Machek, Dominika;  Heinz, Caroline;  <u>Tojo, Naoko</u>  (Lund University, Sweden)</p>	<p><b>[D2-3][E] Designing for Vehicle Recyclability from the Perspectives of Material and Joining Choices</b>  Soo, Vi Kie;  Compston, Paul;  Doolan, Matthew  (Australian National University, Australia)</p>	<p><b>[E2-3][E] Optimal Design and Operation of a Residential Hybrid Microgrid System in Kasuga City</b>  Yoshida, Yuichiro;  Nagashima, Keisuke;  Farzaneh, Hooman  (Kyushu University, Japan)</p>
<p><b>[A2-3] How Neuroscience Can Contribute to Future Design: Theoretical and Practical Implications</b>  <u>Aoki, Ryuta</u>  (Tokyo Metropolitan University, Japan, Japan)</p>	<p><b>[B2-4][E] Video Networks of Sustainable Design: The Doughnut Perspective</b>  Vargas Meza, Xanat (1);  Yamanaka, Toshimasa (2)  (1: Kobe Design University, Japan;  2: The University of Tsukuba, Japan)</p>	<p><b>[C2-4] Guidelines for Circular Product Design and Development</b>  Shahbazi, Sasha  (RISE IVF, Sweden)</p>		<p><b>[E2-4][E] Evaluation and Improvement Proposals for a Business Facility Solar and Ground-Heat Hybrid Heat Supply System</b>  Yoshidome, Daiki;  Kikuchi, Ryou;  Pandyaswargo, Andante Hadi;  Onoda, Hiroshi  (Waseda University, Japan)</p>
<p>16:00-16:20 Coffee (315 Lobby)</p>				

Monday, November 25, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p><b>[A3] OS: Future Design (2)</b></p>	<p><b>[B3] Life Cycle Sustainability Assessment (2)</b></p>	<p><b>[C3] OS: Advancing Circular Economy in the Manufacturing Industry: The Importance of Design, Business Models, and Policies (3)</b></p>	<p><b>[D3] Disassembly and Recycling (2)</b></p>	<p><b>[E3] OS: Transitions and Innovations Supporting the Energy Transition (3)</b></p>
	<p>Chair: Aoki, Ryuta (Tokyo Metropolitan University, Japan)</p>	<p>Chair: Murata, Hidenori (Osaka University, Japan)</p>	<p>Chair: Dalhammar, Carl (Lund University, Sweden)</p>	<p>Chair: Mishima, Nozomu (Akita University, Japan)</p>	<p>Chair: Esteban, Miguel (Waseda University, Japan)</p>
	<p><b>[A3-1] Visual Narrative for Taking Future Generation's Perspective</b>  <u>Nakagawa, Yoshinori;</u>  Saijo, Tatsuyoshi  (Kochi University of Technology, Japan)</p>	<p><b>[B3-1] The Carbon Handprint Approach to Assess the Positive Climate Impact</b>  Vatanen, Saija (1);  Pajula, Tiina (1);  Grönman, Kaisa (2);  Soukka, Risto (2);  Kasurinen, Heli (2)  (1: VTT Technical Research Centre of Finland, Finland;  2: LUT University, Finland)</p>	<p><b>[C3-1][E] Model-based Design of Product-related Information Management System for Accelerating Resource Circulation</b>  <u>Komoto, Hitoshi;</u>  Matsumoto, Mitsutaka;  Kondoh, Shinsuke  (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[D3-1][E] Recyclability of Tungsten, Tantalum and Neodymium from Smartphones</b>  <u>Nissen, Nils F. (1);</u>  Reinhold, Julia (1);  Schischke, Karsten (1);  Lang, Klaus-Dieter (1,2)  (1: Fraunhofer Institute for Reliability and Microintegration IZM, Germany;  2: Technische Universität Berlin, Germany)</p>	<p><b>[E3-1][E] A Spatial, High-Resolution Electricity Simulation Model for Renewable Integration and the Concurrent Presence of Various Vehicle Technologies: A Case Study for Japan</b>  <u>Kneuper, Kristina;</u>  Esteban, Miguel;  Shibayama, Tomoya  (Waseda University, Japan)</p>
<p>16:20-17:40</p>	<p><b>[A3-2] Effects of Time Framing on the Perception of Water Environmental Problems – Evidence from Future Design Workshop in Ho Chi Minh City, Vietnam</b>  <u>Kuroda, Masashi;</u>  Uwasu, Michinori;  Hara, Keishiro  (Osaka University, Japan)</p>	<p><b>[B3-2] The Comparison of the Environmental Impact and Carbon Footprint Assessment between Taiwan and Australian Greenhouse Facility of Agricultural Crops</b>  Hu, Allen H. (1);  <u>Trinh, Lien, Thi Kim (1);</u>  Liu, Ting-Jung (1);  Kuo, Chien-Hung (1);  Lan, Yi-Chen (2);  Chen, Zhong-Hua (2)  (1: National Taipei University of Technology, Taiwan;  2: University of Western Sydney, Australia)</p>	<p><b>[C3-2] Guidelines for the Implementation of Lean and MTM Techniques in Remanufacturing Factory Planning: Potentials for Project-based Learning</b>  <u>Guidat, Thomas (1);</u>  Kohl, Holger (2);  Nguyen, Hung Quoc (1);  Seliger, Günther (3)  (1: Vietnamese-German University, Vietnam;  2: Fraunhofer Institute for Production Systems and Design Technology, Germany  3: Technische Universität Berlin, Germany)</p>	<p><b>[D3-2] Analysis of Economical Material-based GHG Recovery and Reduction by Integrated Supplier and Disassembly Part Selections: Cell Phone Case Study</b>  <u>Irie, Hayate;</u>  Kinoshita, Yuki;  Yamada, Tetsuo  (The University of Electro-Communications, Japan)</p>	<p><b>[E3-2][E] Feasibility Study for Electric Vehicle Utilization as Grid Supporting in Indonesian Power System</b>  Huda, Muhammad (1);  Tokimatsu, Koji (1);  <u>Darmawan, Arif (1);</u>  Aziz, Muhammad (2)  (1: Tokyo Institute of Technology, Japan;  2: The University of Tokyo, Japan)</p>
	<p><b>[A3-3] Practice of Future Design in Pursuit of Sustainability – A Case Study</b>  <u>Hara, Keishiro</u>  (Osaka University, Japan)</p>	<p><b>[B3-3][E] Adopting Life Cycle Assessment for Various Greenhouse Typologies in Multiple Cropping Environment in Australia</b>  Evangelista, Ana;  <u>Lan, Yi-Chen;</u>  Chen, Zhonghua;  Tam, Vivian W. Y.;  Datt, Rina  (Western Sydney University, Australia)</p>	<p><b>[C3-3][E] Analysis of Electric Vehicle Batteries Recoverability through a Dynamic Fleet Based Approach</b>  <u>Sato, Fernando Enzo Kenta</u>  (1,2);  Nakata, Toshihiko (2)  (1: Honda Motor Co. Ltd., Japan;  2: Tohoku University, Japan)</p>	<p><b>[D3-3] Selective Dismantlement of Lithium-ion Battery Positive Electrode Material by Electrical Discharge for Recycling</b>  <u>Maruyama, Shuhei (1);</u>  Lim, Soowon (1);  Nishi, Maiko (1);  Sawamura, Yukihiko (1);  Namihira, Takao (2);  Tokoro, Chiharu (1)  (1: Waseda University, Japan;  2: Kumamoto University, Japan)</p>	<p><b>[E3-3][E] Social Equity and Lifestyle Conscious Policy Making for the Energy Transition</b>  <u>Chapman, Andrew John (1);</u>  Shigetomi, Yosuke (2)  (1: Kyushu University, Japan;  2: Nagasaki University, Japan)</p>

<p><b>[A3-4] Future Design and Innovation Policy</b>  <u>Aoki, Reiko</u>  (Japan Fair Trade Commission, Japan)</p>	<p><b>[B3-4] Comparison of the Two Different Uncertainty Analysis Methods; the Monte Carlo Simulation (MCS), and the Bootstrap Method for the Uncertainty Analysis of a Mathematical Model</b>  Lee, Min Hyeok (1); Lee, Jong Seok (2); Lee, Joo Young (2);  <u>Lee, Kun Mo (3)</u>  (1: Korea Institute of Industrial Technology, South Korea;  2: Green Technology Center, South Korea;  3: KMSE and Ajou University, South Korea)</p>	<p><b>[C3-4] A Coupled LCA and Dynamic MFA Models as a Design Tool for Circular Utilization of Lithium-ion Batteries</b>  <u>Chen, I-Ching (1)</u>;  Ohno, Hajime (1);  Tokoro, Chiharu (2);  Fukushima, Yasuhiro (1)  (1: Tohoku University, Japan;  2: Waseda University, Japan)</p>		<p><b>[E3-4] Consequences of Consequential Transitions</b>  <u>McLellan, Benjamin Craig (1)</u>;  Chapman, Andrew John (2);  Yamasue, Eiji (3);  Shigetomi, Yosuke (4);  Farzaneh, Hooman (2);  Giurco, Damien (5)  (1: Kyoto University, Japan;  2: Kyushu University, Japan;  3: Ritsumeikan University, Japan;  4: Nagasaki University, Japan;  5: University of Technology, Sydney, Australia)</p>
--	--	--	--	--

18:00-20:30 Welcome Reception (315)

Tuesday, November 26, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p><b>[A4] OS: EcoDesign in Electronics Packaging Technology (JIEP Session)</b></p>	<p><b>[B4] Life Cycle Sustainability Assessment (3)</b></p>	<p><b>[C4] OS: Sustainable Consumption and Production in Asian Context (1)</b></p>	<p><b>[D4] OS: Embedding Sustainability in Cyber-Physical Production Systems</b></p>	<p><b>[E4] Critical Materials and Material Flow</b></p>
	<p>Chair: Shimoi, Norihiro (Tohoku University, Japan)</p>	<p>Chair: Fatimah, Yun Arifatul (Universitas Muhammadiyah Magelang, Indonesia)</p>	<p>Chair: Matsumoto, Mitsutaka (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p>Chair: Despeisse, Mélanie (Chalmers University of Technology, Sweden)</p>	<p>Chair: Deubzer, Otmar Karl (UNU SCYCLE, Germany)</p>
	<p><b>[A4-1] The Focused EcoDesign and Sustainability Issues of JIEP “Material and EcoDesign Technical Committee” in the Next Decade</b>  Hayashi, Hidetaka (1);  Happoya, Akihiko (2)  (1: EcoDesign Promotion Network, Japan;  2: Iwate University, Japan)</p>	<p><b>[B4-1] Introduction of Life Cycle Assessment in Municipal Solid Waste Management: Case Study of Kinshasa City</b>  <u>Okin, Yllah Kang</u>;  Yabar, Helmut;  Mizunoya, Takeshi  (University of Tsukuba, Japan)</p>	<p><b>[C4-1] Directions and Opportunities for Accelerated Achievement of Sustainable Consumption and Production in Asia</b>  <u>Hirao, Masahiko (1)</u>;  Tsaki, Tomohiro (2);  Hotta, Yasuhiro (3);  Kanie, Norichika (4)  (1: The University of Tokyo, Japan;  2: National Institute for Environmental Studies, Japan;  3: Institute for Global Environmental Strategies, Japan;  4: Keio University, Japan)</p>	<p><b>[D4-1][E] The Environmental Implications of Digitalization in Manufacturing: A Case Study</b>  <u>Chen, Xiaoxia (1)</u>; Despeisse, Mélanie (1); Dahlman, Patrik (2); Dietl, Paul (3); Johansson, Björn (1)  (1: Chalmers University of Technology, Sweden;  2: AB SKF, Sweden;  3: SKF Österreich AG, Austria)</p>	<p><b>[E4-1] Substance Flow Analysis of Rare Earth and Contribution of International Standard for its Recycle from End-of-life Products - The Case Study of Neodymium-Morimoto, Shinichiro (1)</b>;  Kuroki, Hiroshi (2);  Ishigaki, Aya (2)  (1: National Institute of Advanced Industrial Science and Technology, Japan;  2: Tokyo University of Science, Japan)</p>
	<p><b>[A4-2] Lead-free and Fluxless Indium Solder Bonding Process in Low Temperature through Vacuum Ultraviolet (VUV)</b>  <u>Chiu, Yu Shan (1)</u>;  Shigetou, Akitsu (1);  Kao, C. Robert (2)  (1. National Institute for Materials Science, Japan;  2. National Taiwan University, Taiwan)</p>	<p><b>[B4-2] Techno-Economic Assessment of City Sanitary Sewerage SYSTEM: A Case Study of Khartoum North, Sudan</b>  <u>Mohamed, Ola M A</u>;  Yabar, Helmut;  Mizunoya, Takeshi  (University of Tsukuba, Japan)</p>	<p><b>[C4-2] Development of a Co-design Method of Sustainable Consumption and Production Patterns</b>  <u>Tasaki, Tomohiro (1)</u>;  Amasawa, Eri (2);  Kishita, Yusuke (2);  Kohno, Makiko (2);  Takagi, Cosmo (3);  Moon, Dami (2);  Umeda, Yasushi (2);  Kanie, Norichika (3);  Hotta, Yasuhiko (4);  Hirao, Masahiko (2)  (1: National Institute for Environmental Studies, Japan;  2: The University of Tokyo, Japan;  3: Keio University, Japan;  4: Institute for Global Environmental Strategies, Japan)</p>	<p><b>[D4-2][E] Cyber Physical System in Inverse Manufacturing</b>  <u>Kondoh, Shinsuke</u>;  Komoto, Hitoshi;  Matsumoto, Mitsutaka  (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[E4-2][E] Material Criticality Assessment for Business Purposes Using Fuzzy Linguistic Method</b>  <u>Chen, Xiaobo (1)</u>;  Goddard, James (2);  Lee, Jacquetta (1)  (1: University of Surrey, United Kingdom;  2: Granta Design, ANSYS Inc., United Kingdom)</p>
9:00-10:20	<p><b>[A4-3][E] Development of Electrostatic Linear Motor for Insect-Type Microrobot</b>  <u>Osada, Genki</u>;  Mizumoto, Asuya;  Hirao, Satoshi;  Hayakawa, Yuichiro;  Noguchi, Daisuke;  Kaneko, Minami;  Uchikoba, Fumio;  Saito, Ken  (Nihon University, Japan)</p>	<p><b>[B4-3] Assessment of the Current State of Biogas Digester Use for Livestock Waste Treatment: A Case Study in Quang Tri Province, Vietnam</b>  <u>Hoang, Thanh Huong</u>;  Kato, Takaaki  (University of Kitakyushu, Japan)</p>	<p><b>[C4-3] Framework of Participatory Scenario Design for Sustainable Consumption and Production</b>  <u>Kishita, Yusuke</u>;  Isoda, Ayumi;  Umeda, Yasushi  (The University of Tokyo, Japan)</p>	<p><b>[D4-3][E] Life Cycle Simulation of Machine Parts with Part Agents Supporting their Reuse</b>  <u>Sugahara, Takumi</u>;  Tanigawa, Tsuramichi;  Hiraoka, Hiroyuki  (Chuo University, Japan)</p>	<p><b>[E4-3] Material Flow and Stock Analysis Considering Spatial Distribution toward an Evaluation of Recovery Potential of Copper in Japan</b>  <u>Yokoi, Ryosuke (1)</u>;  Nakatani, Jun (2);  Moriguchi, Yuichi (2)  (1: National Institute of Advanced Industrial Science and Technology, Japan;  2: The University of Tokyo, Japan)</p>

<p><b>[A4-4][E] E-Catalogues of Equipment for Constructing an Injection Molding Digital Eco-Factory</b>  Matsuda, Michiko (1);  Kondo, Tomoaki (2);  Kawai, Wakahiro (3);  Hamanaka, Jun (4);  Matsushita, Naohisa (5);  Chino, Shinichiro (6);  Fujii, Susumu (7);  Kimura, Fumihiko (8)  (1: Kanagawa Institute of Technology, Japan;  2: K.T.System Co., Ltd., Japan;  3: OMRON Corporation, Japan;  4: Hitachi, Ltd., Japan;  5: Institute of Industry Promotion-Kawasaki, Japan;  6: Mitsubishi Electric Co., Ltd., Japan;  7: Kobe University, Japan;  8: The University of Tokyo, Japan)</p>	<p><b>[B4-4] Environmental Benefits of Waste Recycling and Recovery for the Cement Industry: A Case Study</b>  Hu, Allen H.;  <u>Kuo, Chien-Hung</u>;  Tseng, Yung-I;  Ting, Chih-Yu  (National Taipei University of Technology, Taiwan)</p>	<p><b>[C4-4] Proposal of a Connecting Method between Product Structures and Fundamental Human Needs</b>  Murata, Hidenori;  Kobayashi, Hideki  (Osaka University, Japan)</p>	<p><b>[D4-4] Decision-Making in Assessing Sustainability Using Big-Data</b>  Ullah, AMM Sharif (1);  Alam, Muhammad Noor E (2)  (1: Kitami Institute of Technology, Japan; 2: Northeastern University, USA)</p>	
10:20-10:40	Coffee (315 Lobby)			

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<b>[A5] Green Telecommunication &amp; Electronics</b>	<b>[B5] Life Cycle Sustainability Assessment (4)</b>	<b>[C5] OS: Sustainable Consumption and Production in Asian Context (2)</b>	<b>[D5] OS: Intelligent Circular Manufacturing (1)</b>	<b>[E5] Sustainability Education and Gamification</b>
	Chair: Lan, Yi-Chen (Western Sydney University, Australia)	Chair: Dowaki, Kiyoshi (Tokyo University of Science)	Chair: Kobayashi, Hideki (Osaka University, Japan)	Chair: Martinsen, Kristian (Norwegian University of Science and Technology, Norway)	Chair: Nonaka, Tomomi (Ritsumeikan University, Japan)
	<b>[A5-1][E] Methodology for Modeling the Energy and Material Footprint of Future Telecommunication Networks</b> Stobbe, Lutz (1); Nissen, Nils F. (1); Druschke, Jan (1); Zedel, Hannes (1); Richter, Nikolai (1); Lang, Klaus-Dieter (1,2) (1: Fraunhofer Institute for Reliability and Microintegration IZM, Germany; 2: Technischen Universität Berlin, Germany)	<b>[B5-1] Life Cycle Assessment of Autonomous Vehicles: Impact of Electrification and Lightweighting</b> Kim, Hyung Chul; Wallington, Timothy J. (Ford Motor Company, USA)	<b>[C5-1] Environmental Performance of Sharing Economy: Case of Household Laundry in Tokyo and Bangkok</b> Amasawa, Eri; Moon, Dami; Hirao, Masahiko (The University of Tokyo, Japan)	<b>[D5-1][E] Additive Manufacturing for Circular Manufacturing: Trends and Challenges – A Survey in Japan, Norway, and India</b> Matsumoto, Mitsutaka (1); Hirose, Shingo (1); Martinsen, Kristian (2); Simhambhatla, Suryakumar (3); Reddy, Venkata (3); Guldbrandsen-Dahl, Sverre (4) (1: National Institute of Advanced Industrial Science and Technology, Japan; 2: Norwegian University of Science and Technology, Norway; 3: Indian Institute of Technology Hyderabad, India; 4: FI Manufacturing, Norway)	<b>[E5-1][E] Gamifying Sustainable Design to Enhance Environmental Consciousness of Industrial Design Students</b> Suppipat, Suphichaya (1); Hu, Allen H. (1); Chotiratanapinun, Treechada (2) (1: National Taipei University of Technology, Taiwan; 2: Silpakorn University, Thailand)
10:40-12:00	<b>[A5-2][E] Forecast of Future Impacts of Using ICT Services on GHG Emissions Reduction and GDP Growth in Japan</b> Zhang, Xiaoxi (1); Shinozuka, Machiko (1); Tanaka, Yuriko (1); Kanamori, Yuko (2); Masui, Toshihiko (2) (1: Nippon Telegraph and Telephone Corporation, Japan; 2: National Institute for Environmental Studies, Japan)	<b>[B5-2][E] Ecological Cost-benefit Analysis of a Sensor-based Parking Prediction Service</b> Druschke, Jan (1); Fath, Stephan (2); Stobbe, Lutz (1); Nissen, Nils F. (1); Richter, Nikolai (1); Lang, Klaus-Dieter (1,3) (1: Fraunhofer Institute for Reliability and Microintegration IZM, Germany; 2: Deutsche Telekom Technik GmbH, Germany; 3: Technischen Universität Berlin, Germany)	<b>[C5-2] Evaluation of Environmental Impact of Car Sharing Considering Uncertainty of Influential Variables</b> Tsujii, Katsuya; Kurusu, Kiyo; Nakatani, Jun; Moriguchi, Yuichi (The University of Tokyo, Japan)	<b>[D5-2] Advanced Manufacturing Capabilities in Existing Machinery: A Case Study of Retrofitting CNC and Weld-Deposition for Additive Manufacturing</b> Simhambhatla, Suryakumar; Reddy, Venkata (Indian Institute of Technology Hyderabad, India)	<b>[E5-2][E] Consideration of Communication Methods with the Next Generation for Sustainable Living through the Case Study of a Visiting Lecture</b> Tajima, Shota; Nasu, Satoko; Fujikawa, Daisuke (Chiba University, Japan)
	<b>[A5-3] Estimation of Impact of ICT Services on GHG Emissions and GDP in Japan through Lifestyle Changes</b> Shinozuka, Machiko (1); Zhang, Xiaoxi (1); Tanaka, Yuriko (1); Kanamori, Yuko (2); Masui, Toshihiko (2) (1: Nippon Telegraph and Telephone Corporation, Japan; 2: National Institute for Environmental Studies, Japan)	<b>[B5-3] Life Cycle Assessment of Residential Air-Conditioners: Comparison between India, Indonesia and Japan</b> Karkour, Selim (1); Ihara, Tomohiko (2); Ota, Takaharu (2); Itsubo, Norihiro (1) (1: Tokyo City University, Japan; 2: The University of Tokyo, Japan)	<b>[C5-3] Modelling Choice Behavior of Car-Sharing Platform: The Case Study of Bangkok Metropolitan Region</b> Bunditsakulchai, Pongsun (1); Kishita, Yusuke (2) (1: Chulalongkorn University, Thailand; 2: The University of Tokyo, Japan)	<b>[D5-3] Incremental Sheet Metal Forming: A Candidate Process for Circular Manufacturing</b> Nallagundla, Venkata Reddy (1); Simhambhatla, Suryakumar (1); Matsumoto, Mitsutaka (2); Martinsen, Kristian (3); Guldbrandsen-Dahl, Sverre (4) (1: Indian Institute of Technology, Hyderabad, India; 2: National Institute of Advanced Industrial Science and Technology, Japan; 3: Norwegian University of Science and Technology, Norway; 4: SFI Manufacturing, Norway)	<b>[E5-3] Learning from the Student Climate Change Summit</b> Chinen, Kenichiro (1); Uchiya, Yu (2) (1: California State University, Sacramento, USA; 2: Yokohama National University, Japan)

<p><b>[A5-4] Packaging Evaluation of Consumer Electronics Products from Economic, Logistical, and Environmental Perspectives</b>  <u>Chung, Wu-Hsun</u>;  Wu, Pei-Cheng  (National Taiwan Ocean University, Taiwan)</p>		<p><b>[C5-4][E] Understanding of Individuals' Intention toward Car Sharing Usage in the Southeast-Asia Region: From University Students in Thailand and Indonesia</b>  <u>Chun, Yoon-Young</u>;  Matsumoto, Mitsutaka;  Tahara, Kiyotaka  (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[D5-4] Development of Platinum Group Metals-Based Diffusion Coatings for Oxidation Protection of Ni-based Superalloys, and its Application to Remanufacturing Process</b>  Tue, Dao Chi (1,2);  Hayakawa, Masao (1);  Ishida, Akira (1);  Hong Lien, Le Thi (2)  Matsumoto, Mitsutaka (3);  <u>Murakami, Hideyuki (1,4)</u>;  (1: National Institute for Materials Science, Japan;  2: Institute of Materials Science, Vietnam;  3: National Institute of Advanced Industrial Science and Technology, Japan;  4: Waseda University, Japan)</p>	
---	--	---	--	--

12:00-14:00	Lunch & Poster Session (315)
-------------	------------------------------

Tuesday, November 26, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p><b>[A6] Sustainable Design and User Behavior</b>  Chair: Chun, Yoon-Young  (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[B6] Product Service System Design</b>  Chair: Komoto, Hitoshi  (National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[C6] OS: Sustainable Consumption and Production in Asian Context (3)</b>  Chair: Kishita, Yusuke (The University of Tokyo, Japan)</p>	<p><b>[D6] OS: Intelligent Circular Manufacturing (2)</b>  Chair: Nallagundla, Venkata Reddy (Indian Institute of Technology, Hyderabad, India)</p>	<p><b>[E6] Green Energy Technologies</b>  Chair: Smith, Shana (National Taiwan University, Taiwan)</p>
	<p><b>[A6-1][E] The Chinese-Brand Electric Vehicles in the Eyes of the US Consumers</b>  <u>Chinen, Kenichiro (1)</u>;  Endo, Hideki (2);  Matsumoto, Mitsutaka (3);  Han, Yongliang (1)  (1: California State University, Sacramento, USA;  2: Nihon Fukushi University, Japan;  3: National Institute of Advanced Industrial Science and Technology, Japan)</p>	<p><b>[B6-1][E] State-of-the-Art on Product-Service Systems and Digital Technologies</b>  <u>González Chávez, Clarissa Alejandra</u>;  Despeisse, Mélanie;  Johansson, Björn  (Chalmers University of Technology, Sweden)</p>	<p><b>[C6-1][E] Enhancing Role and Participation of Industry and Community for Sustainable E-waste Recovery for Sustainable Consumption and Production (SCP): Case Study Kuala Lumpur Malaysia</b>  <u>Mohamed, Ahmad Fariz</u>;  Rasnani, Muhammad Izzat  (Universiti Kebangsaan Malaysia, Malaysia)</p>	<p><b>[D6-1][E] Closed Loop Tolerance Engineering Modelling and Maturity Assessment in a Circular Economy Perspective</b>  <u>Martinsen, Kristian (1)</u>;  Assuad, Carla Susana Aquedelo (1);  Kito, Tomomi (2);  Matsumoto, Mitsutaka (3);  Nallagundla, Venkata Reddy (4);  Guldbrandsen-Dahl, Sverre (5)  (1: Norwegian University of Science and Technology, Norway;  2: Waseda University, Japan;  3: National Institute of Advanced Industrial Science and Technology, Japan;  4: Indian Institute of Technology Hyderabad, India;  5: SINTEF Manufacturing, Norway)</p>	<p><b>[E6-1][E] Green Power Generations and Environmental Monitoring Systems Based on the Dielectric Elastomer Transducer</b>  <u>Chiba, Seiki (1)</u>;  Waki, Mikio (2);  Takeshita, Makoto (3);  Uejima, Mitsugu (3);  Arakawa, Kohei (3);  Ono, Koji (4);  Takikawa, Yoshihiro (4);  Hatano, Ryu (4);  Tanaka, Shoma (4)  (1: Chiba Science Institute, Japan;  2: Wits Inc., Japan;  3: Zeon Corporation, Japan;  4: Aisin AW Co., LTD, Japan)</p>
14:00-15:20	<p><b>[A6-2][E] Strengthening Aesthetic Individualization in Product Design to Enhance Customer Loyalty and Sustainability</b>  <u>Hagedorn, Lisa</u>;  Kremer, Gerald Albert;  Stark, Rainer  (Technische Universität Berlin, Germany)</p>	<p><b>[B6-2][E] Material-Service Systems for Sustainable Resource Management</b>  Aurisicchio, Marco;  Zeeuw Van Der Laan, Anouk;  Tennant, Mike  (Imperial College London, UK)</p>	<p><b>[C6-2][E] Information Flow System for Chemicals in Products (CiP) with Adequate Attention to the Social Dimension: The Japanese Challenge and the Way Forward</b>  <u>Kohno, Makiko</u>;  Hirao, Masahiko  (The University of Tokyo, Japan)</p>	<p><b>[D6-2][E] Prediction of Width and Thickness of Injection Molded Parts Using Machine Learning Methods</b>  <u>Ogorodnyk, Olga (1)</u>;  Lyngstad, Ole Vidar (2);  Larsen, Mats (2);  Martinsen, Kristian (1)  (1: Norwegian University of Science and Technology, Norway;  2: SINTEF Manufacturing, Norway)</p>	<p><b>[E6-2] Developing a Concept and Prototype of Arrayed-Type Offshore Ocean Wave Energy Catcher</b>  <u>Chang, Hsiang-Tang</u>;  Lee, Zi-Yi;  Lo, Kuo-Yuan  (National Kaohsiung University of Science and Technology, Taiwan)</p>

<p><b>[A6-3] Conceptual Design of a Configurator Enables Sustainable Consumption of Clothes</b>  Honda, Moe;  Mishima, Kuniko;  Mishima, Nozomu  (Akita University, Japan)</p>	<p><b>[B6-3] Decision Support Method for Planning Upgrade Cycle and Designing Product Architecture of Upgradable Product Service System</b>  Yamada, Shuho (1);  Miyajima, Shogo (1);  Hasebe, Rina (1);  Yamada, Tetsuo (2);  Bracke, Stefan (3);  Inoue, Masato (1)  (1: Meiji University, Japan;  2: The University of Electro-Communications, Japan;  3: University of Wuppertal, Germany)</p>	<p><b>[C6-3][E] Economy-wide Material Flow Analysis and Its Projection: DMI vs TMR in Japan</b>  Kosai, Shoki (1,2);  Yamasue, Eiji (2)  (1: Kyoto University;  2: Ritsumeikan University)</p>	<p><b>[D6-3][E] Life Cycle Simulation System as a Tool for Improving Material Flow Management in Circular Manufacturing</b>  Asai, Keito;  Nishida, Dai;  Takata, Shozo  (Waseda University, Japan)</p>	<p><b>[E6-3] Development of New Electric Power Cell by Magnesium for Earthquake Occurrence</b>  Furukawa, Yuji (1);  Ishiwata, Takehiko (2)  (1: Tokyo University of Agriculture and Technology, Japan;  2: STAYER Co. Ltd., Japan)</p>
<p><b>[A6-4][E] Comparative Analysis of the Users' Kansei Evolutions over Their Short and Long-lived Products' Lifetimes in Iran</b>  Zafarmand, Seyed Javad (1);  Zolfaghari, Mohammad (2);  (1: Iran University of Science and Technology / Shiraz University, Iran;  2: Iran University of Science and Technology, Iran)</p>	<p><b>[B6-4] PSS for the BoP: A Review from DfS to Sustainable Business Model</b>  Méndez-León, Eduardo (1);  Reyes-Carrillo, Tatiana (1);  Díaz-Pichardo, René (1,2)  (1: Université de Technologie Troyes, France.;  2: South Champagne Business School, France)</p>	<p><b>[C6-4] Needs-Based Design Evaluation Method Using Mixed Prototyping Environment</b>  Kano, Akio;  Watanabe, Yugo;  Murata, Hidenori;  Fukushige, Shinichi;  Kobayashi, Hideki  (Osaka University, Japan)</p>	<p><b>[D6-4] Life Cycle Simulation Assessment of Reusability of Electric Cars in Norway and Japan, a Country Comparison</b>  A Assuad, Carla Susana (1);  Asai, Keito (2);  Takata, Shozo (2);  Martinsen, Kristian (1)  (1: Norwegian University of Science and Technology, Norway;  2: Waseda University, Japan)</p>	<p><b>[E6-4] A Novel Process for Yellow Phosphorus Formation from a Steelmaking Slag Using Silicon Sludge</b>  Fujimura, Shiho (1);  Takatani, Hiroto (1);  Mitsuhara, Kei (1);  Kosai, Shoki (1,2);  Takizawa, Masaru (1);  Yamasue, Eiji (1)  (1: Ritsumeikan University, Japan;</p>
15:20-15:40	Coffee (315 Lobby)			

15:40-16:30	Plenary Keynote 3 (302) <b>Science for Policy: Analysis of Several Scientific Supports to EU Policy Related to Resources and Raw Material Management</b> <i>Mathieux, Fabrice, Ph.D.   Directorate-General Joint Research Centre (JRC), Sustainable Resources Directorate, European Commission</i>
16:30-18:00	Panel Discussion (302) <b>20 Years of EcoDesign and the Future –Is EcoDesign Enough for Sustainability?</b> <i>Panelists: Chen, Jahau L. (National Cheng Kung University, Taiwan), Kobayashi, Hideki (Osaka University, Japan), Lee, KunMo (Ajou University, Korea) and Nissen, Nils F. (Fraunhofer IZM, Germany)</i> <i>Moderator: Umeda, Yasushi (The University of Tokyo, Japan)</i>

18:30-21:00	Banquet (InterContinental Yokohama Grand, 3rd Floor, Pacific)
-------------	---

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<b>[A7] OS: Circular Consumption and Use Perspectives (1)</b>	<b>[B7] OS: Environmental Indicators for Designers (1)</b>	<b>[C7] OS: Sustainable Consumption and Production in Asian Context (4)</b>		<b>[E7] Energy System Design (1)</b>
	Chair: Selvefors, Anneli (Chalmers University of Technology, Sweden)	Chair: Laratte, Bertrand (ENSAM (I2M), France)	Chair: Masui, Keijiro (National Institute of Advanced Industrial Science and Technology, Japan)		Chair: Mizuno, Yuji (The Institute of Applied Energy, Japan)
	<b>[A7-1] Exploring the Gap between Consumer Value Cognition of Shopping Bags and Using Behavior</b> <u>Huang, Yu-Chen (1);</u> Luh, Ding-Bang (2) (1: National University of Kaohsiung, Taiwan; 2: Guangdong University of Technology, China)	<b>[B7-1] Development of a Conceptual Framework to Take the Dissipation of Non-Energetic Abiotic Resources into Account within Life Cycle Assessment</b> <u>Charpentier Poncelet, Alexandre (1,2);</u> Laratte, Bertrand (2); Loubet, Philippe (1); Sonnemann, Guido (1) (1: Université de Bordeaux (CyVi Group), France; 2: ENSAM (I2M), France; 3: CNRS, CyVi Group, France)	<b>[C7-1][E] Barriers for the Remanufacturing Business in Southeast Asia: The Role of Governments in the Circular Economy</b> Matsumoto, Mitsutaka (1); Chinen, Kenichiro (2); Jamaludin, Khairur Rijal (3); Yusoff, Badli Shah Mohd (4) (1: National Institute of Advanced Industrial Science and Technology, Japan; 2: California State University, Sacramento, USA; 3: Universiti Teknologi Malaysia, Malaysia; 4: Universiti Kuala Lumpur, Malaysia)		<b>[E7-1][E] Influence of Thermal Conductivity and Subsurface Temperature on Life-Cycle Environmental Load of the Ground Source Heat Pump in Bangkok, Thailand</b> <u>Shimada, Yutaro (1);</u> Uchida, Youhei (2); Kurishima, Hideaki (3); Tokimatsu, Koji (1) (1: Tokyo Institute of Technology, Japan; 2: National Institute of Advanced Industrial Science and Technology, Japan; 3: Shibaura Institute of Technology, Japan)
	<b>[A7-2][E] Consumer's Perception of Plastics in Everyday Products in Relation to Their Personality</b> <u>Veelaert, Lore;</u> Du Bois, Els; Herweyers, Laure; Moons, Ingrid (University of Antwerp, Belgium)	<b>[B7-2][E] Development of a Method for Measuring Resource Efficiency for Product Lifecycle</b> <u>Miyake, Gaku (1);</u> Miyaji, Naoya (1); Tajima, Akio (2); Matsumoto, Mitsutaka (3); Masui, Keijiro (3) (1: Panasonic Corporation, Japan; 2: Panasonic Environmental Technology Solutions Co., Ltd., Japan; 3: National Institute of Advanced Industrial Science and Technology, Japan)	<b>[C7-2] An Analysis of Consumer Purchase Intentions for Remanufactured Auto Parts</b> <u>Endo, Hideki (1);</u> Chinen, Kenichiro (2); Matsumoto, Mitsutaka (3) (1: Nihon Fukushi University, Japan; 2: California State University, Sacramento, USA; 3: National Institute of Advanced Industrial Science and Technology, Japan)		<b>[E7-2] The Role of Japanese Cities in Ensuring a Carbon Free Electricity Grid</b> <u>Esteban, Miguel (1);</u> Knupfer, Kristina (1); Iliopoulos, Nikolaos (2); Ishihara, Keiichi (3) (1: Waseda University, Japan; 2: The University of Tokyo, Japan; 3: Kyoto University, Japan)
9:00-10:20	<b>[A7-3][E] User Activity Matters: An Activity Theory Informed Design Toolkit for Sustainable Behavior Design</b> <u>Chu, Wanjun;</u> Glad, Wiktorja; Wever, Renee (Linköping University, Sweden)	<b>[B7-3] Environmental Hotspots in Global Supply Chains Attributed to Japanese National Activities</b> <u>Motoshita, Masaharu (1);</u> Nansai, Keisuke (2); Hashimoto, Seiji (3); Sasaki, Takahiro (3); Pfister, Stephan (4); Finkbeiner, Matthias (5) (1: National Institute of Advanced Industrial Science and Technology, Japan; 2: National Institute for Environmental Studies, Japan; 3: Ritsumeikan University; 4: ETH Zurich; 5: Technische Universitaet Berlin)	<b>[C7-3] The Impact of a Modal Shift on End-of-life Vehicle Management for Asian Countries</b> <u>Lin, Hsin-Tien (1);</u> Yamasue, Eiji (2) (1: Kyoto University, Japan; 2: Ritsumeikan University, Japan)		<b>[E7-3][E] The Readiness Levels of Japan Supported Biomass Energy Conversion Technology Development Projects in Emerging Southeast Asia: Verification of the J-TRA Results</b> Ihara, Issui (1); <u>Pandvaswargo, Andante Hadi (2);</u> Onoda, Hiroshi (2) (1: Deloitte Tohmatsu Consulting, LLC., Japan; 2: Waseda University, Japan)

<p>[A7-4] Design for Sustainable Behaviour: Reducing Single Use Coffee Cup Waste in the UK  <u>Lofthouse, Vicky</u>;  <u>Lilley, Debra</u>  (Loughborough University, UK)</p>	<p>[B7-4] Methodology for Investigation of Material Degradation during Recycling  <u>Panasiuk, Daryna</u>;  <u>Daigo, Ichiro</u>;  <u>Hoshino, Takeo</u>  (The University of Tokyo, Japan)</p>	<p>[C7-4] The Impact of Recyclable Waste Trade Restriction on Producer's Recycling Activities  <u>Kojima, Michikazu</u>  (Economic Research Institute for ASEAN and East Asia, Indonesia)</p>		<p>[E7-4] The Evaluation of Local Industry for Decommissioning a Nuclear Power Plant in Taiwan  <u>Shuai, Jian-An</u>;  <u>Smith, Shana</u>  (National Taiwan University, Taiwan)</p>
---	--	---	--	---

10:20-10:40 Coffee (315 Lobby)

Wednesday, November 27, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<b>[A8] OS: Sustainability, SDGs and Roadmapping</b>	<b>[B8] OS: Environmental Indicators for Designers (2)</b>	<b>[C8] Policy and Design for Circular Economy</b>	<b>[D8] Reuse and Maintenance</b>	<b>[E8] Energy System Design (2)</b>
	Chair: Hirose, Yuta (Advanced Institute of Industrial Technology, Japan)	Chair: Kim, Hyung Chul (Ford Motor Company, USA)	Chair: Iwamoto, Takashi (Keio University, Japan)	Chair: Soo, Vi Kie (Australian National University, Australia)	Chair: Tokimatsu, Koji (Tokyo Institute of Technology, Japan)
	<b>[A8-1] Supporting Roadmap Design for Sustainable Futures Using Backcasting</b> <u>Okada, Yuki (1)</u> ; <u>Kishita, Yusuke (1)</u> ; <u>Phaal, Robert (2)</u> ; <u>Nomaguchi, Yutaka (3)</u> ; <u>Yano, Tomoaki (4)</u> ; <u>Ohtomi, Koichi (5)</u> (1: University of Tokyo, Japan; 2: University of Cambridge, UK; 3: Osaka University, Japan; 4: Japan Aerospace Exploration Agency, Japan; 5: Meiji University, Japan)	<b>[B8-1] Adequacy Assessment of Automobile Repair Option for Product Value, Environmental Impact and Cost: Case Study of Automobile Starter Motor</b> <u>Kobayashi, Shun (1)</u> ; <u>Fujita, Mitsunobu (1,2)</u> ; <u>Mori, Takao (3)</u> ; <u>Sugimoto, Junji (2)</u> ; <u>Hayakawa, Akihiro (2)</u> ; <u>Inoue, Masato (1)</u> (1: Meiji University, Japan; 2: NGP Corporation, Japan; 3: Toyama Prefectural University, Japan)	<b>[C8-1] Value-up Mechanism in Circular Economy</b> <u>Hayashi, Hidetaka</u> (EcoDesign Promotion Network, Japan)	<b>[D8-1] Data-assimilation Method for Lifecycle Simulation Based on Process Behavior Adjustment</b> <u>Fujimoto, Kazuho</u> ; <u>Fukushige, Shinichi</u> ; <u>Kobayashi, Hideki</u> (Osaka University, Japan)	<b>[E8-1][E] Recovery Analysis of Domestic Electric Storage Water Heaters</b> <u>Fernández, Emilia</u> ; <u>Devoto, Carolina</u> ; <u>Piñeyro, Pedro</u> (Universidad de la Republica, Uruguay)
10:40-12:00	<b>[A8-2] Roadmapping for the Future Smart Infrastructure in Engineering Industries</b> <u>Murata, Hisashi (1)</u> ; <u>Nago, Makito (1)</u> ; <u>Motomiya, Akihiro (1)</u> ; <u>Kojima, Shuzo (1)</u> ; <u>Nakamura, Kotaro (1)</u> ; <u>Shirahada, Kunio (2)</u> (1: Engineering Advancement Association of Japan, Japan; 2: Japan Advanced Institute of Science and Technology, Japan)	<b>[B8-2] Design for Reuse (DFReu) Applied to Buildings; Anticipate Disassembly for the End-of-Life (EoL), in Order to Preserve Resources</b> <u>Bertin, Ingrid (1,2)</u> ; <u>Feraile, Adélaïde (1)</u> ; <u>Laratte, Bertrand (4)</u> ; <u>Le Roy, Robert (1,3)</u> (1: Laboratoire Navier, Ecole des Ponts ParisTech, France; 2: Setec tpi, France; 3: ENSAPM, Laboratoire GSA, France; 4: I2M, Institut de Mécanique et d'Ingénierie - Ingénierie Mécanique et Conception, France)	<b>[C8-2] Policy Considerations for Car Sharing Service Activation</b> <u>Lee, Sang Kil</u> (Institute of information & Communications Technology Planning & Evaluation, South Korea)	<b>[D8-2][E] Application of Causality Model to Propose Maintenance Action of Parts</b> <u>Nagahata, Takeru</u> ; <u>Saitoh, Hiroki</u> ; <u>Hiraoka, Hiroyuki</u> (Chuo university, Japan)	<b>[E8-2] Energy Flow Analysis for Zero Carbon Society in Japan's Regional Area: Case Study in Akita</b> <u>Furubayashi, Takaaki</u> (Akita University, Japan)
	<b>[A8-3] Governing Data-Driven Innovation for Sustainability: Implications for Roadmapping in the Presence of Technological Uncertainty and Complexity</b> <u>Yarime, Masaru (1,2,3)</u> (1: Hong Kong University of Science and Technology, Hong Kong; 2: University College London, UK; 3: The University of Tokyo, Japan)	<b>[B8-3] An Overview of Circular Economy for Wooden Construction</b> <u>Hosseini, Zahra (1)</u> ; <u>Laratte, Bertrand (1,2)</u> ; <u>Amor, Ben (3)</u> ; <u>Blanchet, Pierre (4)</u> (1: ENSAM, France; 2: APESA, France; 3: Université de Sherbrooke, Canada; 4: Laval University, Canada)	<b>[C8-3][E] Service Design of Rehabilitative Exoskeleton for Sustainable Value Creation: A Case Study of Exoskeleton for Stroke Rehabilitation in China</b> <u>Tao, Jing</u> ; <u>Yu, Suiran</u> (Shanghai Jiao Tong University, China)	<b>[D8-3][E] Part Agents for Exchanging Modules of Manipulators</b> <u>Fukazawa, Yuki</u> ; <u>Honda, Yuichi</u> ; <u>Hiraoka, Hiroyuki</u> (Chuo University, Japan)	<b>[E8-3] Environmental Footprint of Wasted Photovoltaic (PV) Solar Panels</b> <u>Kuo, Tsai Chi</u> (Chung Yuan Christian University, Taiwan)

<p><b>[A8-4] Strategic Roadmapping for Technology Ventures and Investors</b>  <u>Hirose, Yuta</u> (1,2);  Phaal, Robert (2);  Okada, Yuki (3);  Kishita, Yusuke (3)  (1: Advanced Institute of Industrial Technology, Japan;  2: University of Cambridge, UK;  3: The University of Tokyo, Japan)</p>	<p><b>[B8-4] An Improvement of Multiple Environmental Index of Vegetables in Consideration of Market Effects</b>  <u>Mizutani, Daichi</u>;  Dowaki, Kiyoshi  (Tokyo University of Science, Japan)</p>			
---	---	--	--	--

12:00-13:00 Lunch (311, 312, 313, 314)

Wednesday, November 27, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p><b>[A9] OS: Circular Consumption and Use Perspectives (2)</b></p>	<p><b>[B9] Sustainable Product Design (1)</b></p>	<p><b>[C9] Business Perspectives of Remanufacturing</b></p>	<p><b>[D9] OS: Advanced Circular Model of Spent Photovoltaic Panels in Tokyo Metropolitan (1)</b></p>	<p><b>[E9] Environmental Policy and Ecolabelling</b></p>
	<p>Chair: Boks, Casper (Norwegian University of Science and Technology, Norway)</p>	<p>Chair: Wever, Renee (Linköping University, Sweden)</p>	<p>Chair: Guidat, Thomas (Vietnamese-German University, Vietnam)</p>	<p>Chair: Daigo, Ichiro (The University of Tokyo, Japan)</p>	<p>Chair: Kobayashi, Yoshinori (Toshiba Corporation, Japan)</p>
	<p><b>[A9-1] Nudging Consumers towards a More Circular Economy: A Case of Consumer Electronics</b>  <u>Parajuly, Keshav</u> (1,2);  Fitzpatrick, Colin (1);  Kuehr, Ruediger (2);  <u>Deubzer, Otmar</u> (2)  (1: University of Limerick, Ireland;  2: United Nations University, Germany)</p>	<p><b>[B9-1][E] Eco-Innovation by Integrating Emerging Technologies with ARIZ Method</b>  <u>Chen, Jahau Lewis</u>;  Chou, Chi-Yu  (National Cheng Kung University, Taiwan)</p>	<p><b>[C9-1][E] Efforts to Reduce CO2 Emissions in the Japanese Automobile Recycling Industry</b>  <u>Kitajima, Soshō</u>;  Onoda, Hiroshi  (Waseda University, Japan)</p>	<p><b>[D9-1] Proposal of "Tokyo Model" for Advanced Reuse/Recycling System of Photovoltaic Panels</b>  <u>Tokoro, Chiharu</u> (1);  Murakami, Shinsuke (2);  Daigo, Ichiro (2);  Kikuchi, Yasunori (2)  (1: Waseda University, Japan;  2: The University of Tokyo, Japan)</p>	<p><b>[E9-1] Exploring the International Dissemination of Environmental Innovations: The Impact of Innovative Performance and Absorptive Capacity</b>  <u>Yabar, Helmut</u>  (University of Tsukuba, Japan)</p>
	<p><b>[A9-2][E] A Toolkit for Designing Products and Services Fit for Circular Consumption</b>  <u>Rexfelt, Oskar</u>;  Selvfors, Anneli  (Chalmers University of Technology, Sweden)</p>	<p><b>[B9-2][E] Analysis of the Personal Cars Sustainability in Relation with Their Formalistic Characteristics in Iran</b>  <u>Zolfaghari, Mohammad</u> (1);  Zafarmand, Seyed Javad (1, 2)  (1: Iran University of Science and Technology, Iran;  2: Shiraz University, Iran)</p>	<p><b>[C9-2] Trends and Challenges in Remanufacturing in Construction and Mining Machineries</b>  <u>Kanazawa, Tomohisa</u>;  Yoshimoto, Mitsuhiro;  Ino, Kazuyuki;  Sugawara, Michio  (Hitachi Construction Machinery Co.,Ltd., Japan)</p>	<p><b>[D9-2] Social Cost of Reverse Logistics for Waste Solar Panels in Tokyo</b>  <u>Toyota, Terufumi</u>;  Murakami, Shinsuke  (The University of Tokyo, Japan)</p>	<p><b>[E9-2] The Product Environmental Footprint Initiative at the Crossroad: Synergies and Discords with the European Ecolabel for Building Environmentally-Sound Production and Consumption Patterns</b>  <u>Minkov, Nikolay</u>;  Lehmann, Annkatrin;  Finkbeiner, Mathias  (Technische Universität Berlin, Germany)</p>
13:00-14:20	<p><b>[A9-3] The Future Consumer: Sparking Imagination and Engaging People in Meaning Making around Circular Economies for Clothing</b>  <u>Chamberlin, Lucy</u>;  Liven, Ragnhild Finsveen;  Boks, Casper  (Norwegian University of Science and Technology, Norway)</p>	<p><b>[B9-3] Quantitative Evaluation of Product Shape and It's Application to Eco-efficient Design</b>  <u>Mishima, Nozomu</u>  (Akita University, Japan)</p>	<p><b>[C9-3][E] Design of Household Appliances Considering Remanufacturing: A Case Study</b>  Kang, Hong-Yoon (1);  <u>Jun, Yong-Sung</u> (1);  Park, Ji-Hyoung (2);  Yang, Eun-Hyeok (3)  (1: Korea Institute of Industrial Technology, South Korea;  2: YESSorg Co., Ltd, South Korea;  3: Cowey Co., Ltd, South Korea)</p>	<p><b>[D9-3] PV Module Recycling Solution</b>  Ito, Masafumi;  <u>Doi, Taisuke</u>  (NPC Incorporated, Japan)</p>	<p><b>[E9-3] Voluntary Certification Scheme for Recycling of Critical Raw Materials from Waste</b>  <u>Deubzer, Otmar Karl</u> (1);  Wagner, Michelle (1);  Herrerias, Lucia (2);  Hajósi, Eniko (2);  Gensch, Carl-Otto (2);  Art, Steven (3);  Zonneveld, Norbert (4);  Baron, Yifaat (5);  Valdivia, Sonia (6)  (1: UNU SCYCLE, Germany;  2: WEEE-Forum, Belgium;  3: Umicore, Belgium;  4: European Electronics Recyclers Association, The Netherlands;  5: Oeko-Institut e.v., Germany;  6: World Resources Forum, Switzerland )</p>

14:20-14:40	<p><b>[A9-4][E] Embedding a Sustainability Focus in Packaging Development Processes</b>  <u>de Koeijer, Bjorn (1,2);</u>          Borgman, Iris (1,2);          Henseler, Jörg (1,2);          ten Klooster, Roland (1,2);          de Lange, Jos (1,2)          (1: University of Twente, The Netherlands;          2: Center for Research in Sustainable Packaging, The Netherlands)</p>	<p><b>[C9-4][E] Production Planning of Remanufactured Products with Inventory by Life-Cycle Simulation</b>  <u>Okumura, Susumu;</u>  <u>Hashimoto, Nobuyoshi;</u>          Fujita, Taichi          (University of Shiga Prefecture, Japan)</p>	<p><b>[D9-4] Requirements for Assessment of Technology Options Recycling Spent Photovoltaic Panels</b>  <u>Kikuchi, Yasunori (1);</u>          Chen, I-Ching (2);          Heiho, Aya (1);          Dou, Yi (1);          Fukushima, Yasuhiro (3);          Tokoro, Chiharu (2)          (1: The University of Tokyo, Japan;          2: Waseda University, Japan;          3: Tohoku University, Japan)</p>	<p><b>[E9-4] Evaluation of New Substances to be Regulated by the EU RoHS Directive and Amendment of Exemption Criteria</b>  <u>Deubzer, Otmar Karl (1);</u>          Clemm, Christian (1);          Baron, Yifaat (2);          Gensch, Carl-Otto (2)          (1: Fraunhofer IZM, Germany;          2: Oeko-Institut Freiburg, Germany)</p>
Coffee (315 Lobby)				

Wednesday, November 27, 2019

	Room A (311)	Room B (312)	Room C (313/314)	Room D (411)	Room E (412)
	<p><b>[A10] Prospects of EcoDesign Research</b></p>	<p><b>[B10] Sustainable Product Design (2)</b></p>	<p><b>[C10] Sustainable Supply Chain Management</b></p>	<p><b>[D10] OS: Advanced Circular Model of Spent Photovoltaic Panels in Tokyo Metropolitan (2)</b></p>	
14:40-15:40	<p>Chair: Fukushige, Shinichi (Osaka University, Japan)</p>	<p>Chair: Yu, Suiran (Shanghai Jiao Tong University, China)</p>	<p>Chair: Kuo, Tsai Chi (Chung Yuan Christian University, Taiwan)</p>	<p>Chair: Tokoro, Chiharu (Waseda University, Japan)</p>	
	<p><b>[A10-1] Multi-, Inter- and Trans-disciplinary Approaches for Ecodesign</b>  <u>Sakao, Tomohiko;</u>  <u>Brambila-Macias, Sergio</u>          (Linköping University, Sweden)</p>	<p><b>[B10-1] A Bayesian Decision Analysis in Developing a New Green Product (NGP)</b>  <u>Fongsatitkul, Thanyatorn;</u>  <u>Kainuma, Yasutaka</u>          (Tokyo Metropolitan University, Japan)</p>	<p><b>[C10-1] A Proposal for Communication of Environmental Information in Supply Chain: Focused on Electric and Electronic Products</b>  <u>Choi, Byung Hee;</u>  <u>Cho, Jang Je;</u>  <u>Kim, Tae Yeon;</u>  <u>Jung, Youngchae;</u>  <u>Kim, Chang Gone</u>          (LG Display, South Korea)</p>	<p><b>[D10-1] Technical Feasibility of Recycling PV Panel Glass to Ceramics and Tiles</b>  <u>Kato, So (1);</u>  <u>Daigo, Ichiro (2)</u>          (1: The Glass Recycling Committee of Japan, Japan;          2: The University of Tokyo, Japan)</p>	
	<p><b>[A10-2] Structure versus Meaning: Client-Designer Dynamics around Sustainability Ambitions</b>  <u>Wever, Renee;</u>  <u>Ruiz, Juan;</u>  <u>Bengtsson, Marie</u>          (Linköping University, Sweden)</p>	<p><b>[B10-2][E] Time Axis Design as an EcoDesign Method</b>  <u>Watanabe, Kentaro;</u>  <u>Sakamoto, Fumiya;</u>  <u>Kishita, Yusuke;</u>  <u>Umeda, Yasushi</u>          (The University of Tokyo, Japan)</p>	<p><b>[C10-2][E] Study of Formalization of Informal Collectors under a Dual-Channel Reverse Logistics: A Game Theoretic Approach</b>  <u>Wang, Juntao;</u>  <u>Mishima, Nozomu</u>          (Akita University, Japan)</p>	<p><b>[D10-2] Possibility of Further Recycling of Glass</b>  <u>Daigo, Ichiro;</u>  <u>Panasiuk, Daryna;</u>  <u>Dunuwila, Pasan;</u>  <u>Hoshino, Takeo</u>          (The University of Tokyo, Japan)</p>	
			<p><b>[C10-3][E] An Economic Evaluation of Recycling System in Next-generation Vehicles Considering the Risk of Spilled EOL to Overseas</b>  <u>Kuroki, Hiroshi (1);</u>  <u>Ishigaki, Aya (1);</u>  <u>Takashima, Ryuta (1);</u>  <u>Morimoto, Shinichirou (2)</u>          (1: Tokyo University of Science, Japan;          2: National Institute of Advanced Industrial Science and Technology, Japan)</p>		

15:40-16:30	Award Ceremony & Closing Session (315)
-------------	--

## EcoDesign 2019 Poster Session Program

Poster number	Title	Authors	Affiliations
<b>[P-1] Social Perspectives of EcoDesign</b>			
P1-1	The Ethics; a Missing Part in Sustainable Development (SD)	<u>Vakili-Ardebili, Ali</u>	University of Tehran, Iran
P1-2	Architectural Development of Performance	<u>Vakili-Ardebili, Ali</u>	University of Tehran, Iran
P1-3	Function Evaluation of Karatsu City Smart Resilience Establishment as a Disaster Prevention Base	<u>Akihisa, Ogawa;</u> Daiki, Yoshidome; Hiroshi, Onoda	Waseda University, Japan
<b>[P-2] Sustainable Design and Sustainability Assessment</b>			
P2-1 [E]	Persuasive Design for Improving Battery Swap Service Systems of Electric Scooters	<u>Shih, Li-hsing;</u> Chien, Yi-Tzu	National Cheng Kung University, Taiwan
P2-2	Sustainable Management of Bio-resources Based on Geographical Information System: Case study in Hanoi, Vietnam	<u>Dao, Khue Minh;</u> Helmut, Yabar; Mizunoya, Takeshi	University of Tsukuba, Japan
P2-3 [E]	Industrial Designers Towards Design Concepts Based on the Water and Fire Themes– A Review and Comparison of Sustainability Considerations	<u>Ueda, Edilson</u>	Chiba University, Japan
P2-4	Environmental Impact Assessment of Tourism and MICE in Japan Based on Tourist's Consumption	<u>Kitamura, Yusuke;</u> Ichisugi, Yuki; Suzuki, Haruo; Itsubo, Norihiro	Tokyo City University, Japan
P2-5 [E]	Scenario Analysis of Environmental Impact of Paddy Rice Farming Systems Utilizing Different Fertilizer Materials	<u>Hishinuma, Tatsuo;</u> Ono, Saaya; Ikeguchi, Atsuo	Utsunomiya University, Japan
P2-6	Examination of Potential Accessibility of Energy Production from Bagasse and Animal Excrement in Jamaica	<u>Richards, Delmaria Delina;</u> Yabar, Helmut	University of Tsukuba, Japan
P2-7 [E]	Techno-economic Assessment on Waste from Palm Oil Mill to Electricity in Malaysia	<u>Hashizume, Michino;</u> Tokimatsu, Koji	Tokyo Institute of Technology, Japan
P2-8	Development of Impact Assessment Method for Light Pollution in the	<u>Kurahara, Yoko;</u> Itsubo, Norihiro	Tokyo City University, Japan

	framework of Life Cycle Assessment; LCA for Road Light Considering the Impacts of Nighttime Light Pollution to Paddy Field and Climate Change Caused by Electricity		
P2-9	A Proposal of an Evaluation Method of Eco-Efficiency based on Quantification of Functional and Visual Features of Products	<u>Ozawa, Minehiro</u> ; Mishima, Nozomu	Akita University, Japan
P2-10	Life Cycle Assessment: Assessment of the Current Waste Management System of Nasinu Town Council, Fiji	<u>Matagi, Laisa</u> ; Yabar, Helmut; Mizunoya, Takeshi	University of Tsukuba, Japan
P2-11	Development of Global Inventory Database Based on IDEA	<u>Tahara, Kiyotaka (1)</u> ; Fujii, Chiharu (1); Yokota, Maki (1); Shobatake, Koichi (2); Kobayashi, Kensuke (1,3)	1: National Institute of Advanced Industrial Science and Technology, Japan; 2: TCO2 Co.,Ltd., Japan; 3: Prefectural University of Hiroshima, Japan
<b>[P-3] Business Innovation and Supply Chain Management</b>			
P3-1	Sustainability of Clothing Rental in Japan	<u>Lee, Hyunyoung</u> ; Takashio, Yuga	Ehime University, Japan
P3-2	Sustainability Balanced Scorecard for Supply Chain Performance Evaluation	<u>Suzuki, Imaru (1)</u> ; Xinchen, Sun (2); Ahsan, Kamural (3); Kainuma, Yasutaka (1)	1: Tokyo Metropolitan University, Japan; 2: Fuji Xerox Co., Ltd.; 3: Royal Melbourne Institute of Technology, Australia
P3-3	Sustainability in the Apparel Industry Related to Excessive Clothing Supply	<u>Takehara, Naho</u> ; Lee, Hyunyoung	Ehime University, Japan
P3-4	Recycling Clothing in Japan	<u>Nishimura, Saki</u> ; Lee, Hyunyoung	Ehime University, Japan
<b>[P-4] Sustainable Manufacturing and Green Technology</b>			
P4-1	Hydrometallurgical Process Using Organic Aqua Regius for Extraction of Gold from WEEE	<u>Matsuno, Yasunari</u> ; Takatori, Kota; Yoshimura, Akihiro	Chiba University, Japan
P4-2 [E]	A Novel Approach to Artificial Energy-loss Free Field Emitters: The Outstanding Cathodic Durability of High Crystallized Single-walled Carbon Nanotubes	<u>Shimoi, Norihiro</u>	Tohoku University, Japan

P4-3 [E]	Investigation of the Behaviour of a New Nanogrid Concept and the Nanogrid Components	Halász, Ágnes; <u>Iváncsy, Tamás</u> ; Tamus, Zoltán Ádám	Budapest University of Technology and Economics, Hungary
<b>[P-5] Energy System Design</b>			
P5-1	Effect of Introducing Renewable Energy: An Analysis Using the 2011 Input-output Table for the Next-generation Energy System	<u>Washizu, Ayu</u> (1); Nakano, Satoshi (2)	1: Waseda University, Japan; 2: The Japan Institute for Labour Policy and Training, Japan
P5-2	Underestimated Energy Poverty in Developed Countries – Case of Japan While Accounting Energy Needs	<u>Nazarahari, Amin M.</u> ; Tokimatsu, Koji	Tokyo Institute of Technology, Japan
P5-3	Study of Renewable Energy Main Power System Using Smoothing Effect by Wide Area Interconnection	<u>Okada, Masaki</u> (1); Obara, Shinya (2)	1: National Institute of Technology, Asahikawa College, Japan; 2: Kitami Institute of Technology, Japan
P5-4 [E]	The Import Structure of LNG from Russia to Japan by Cognitive Map and Text Analysis	Takeda, Kengo (1); <u>Purevsuren, Norovsambuu</u> (1); Tokimatsu, Koji (1); Ikegami, Masako (1); Hook, Mikael (2)	1: Tokyo Institute of Technology, Japan; 2: Uppsala University, Sweden
P5-5 [E]	Techno-economic Analysis on Renewable Energy via Hydrogen from Macro and Micro Scope Views	Chen, Meng; <u>Ookubo, Tatsuya</u> ; Hasegawa, Kei; Oda, Takuya; Ihara, Manabu; Tokimatsu, Koji	Tokyo Institute of Technology, Japan
P5-6	Calculation of Surplus Power of Energy Efficient Solar Powered Prototype House for Maximizing Simultaneous Electric Power Consumption in Local	<u>Nasu, Satoko</u> ; Tajima, Shota; Sugai, Yasuo	Chiba University, Japan