

## Session overview

October 9, Tuesday						
9:00am - 12:00pm					<b>Side event 1:</b> Second International Round Table on Materials Criticality  9:00am - 4:45pm Room 115	<b>Side event 2:</b> Latest global trends in visualization of sustainability –Measuring ESG and CE–  10:00am - 3:00pm Room 109
1:30pm - 4:30pm	<b>International School 1:</b> Resource scenarios to support circular economy policies  Lecturer: Ester van der Voet  KFC Hall 2nd	<b>International School 2:</b> How to use LCA software?  1:30pm MiLCA 2:30pm GaBi 3:30pm SimaPro  Room 106				
5:00pm - 7:00pm	Welcome reception					KFC Hall Foyer

October 10, Wednesday						
9:30am - 12:30pm	<b>Opening &amp; Plenary</b>  10:10am Keynote 1: Yuji Ueda 10:55am Keynote 2: Ester van der Voet  KFC Hall					
	Lunch					
1:30pm - 2:50pm	<b>1-1A:</b> Policy-making & LCA (1)  KFC Hall 2nd	<b>1-1B:</b> Supply chain risks & Life cycle thinking  Room 101/102	<b>1-1C:</b> Local sustainability & Renewable energy (1)  Room 103	<b>1-1D:</b> Food–energy–water nexus (1)  Room 107	<b>1-1E:</b> Circular economy & Sustainable design (1)  Room 108	<b>1-1F:</b> Material stock & Sustainability assessment  Room 109
	Break					
3:10pm - 4:30pm	<b>1-2A:</b> Policy-making & LCA (2)  KFC Hall 2nd	<b>1-2B:</b> Business opportunities & Life cycle thinking  Room 101/102	<b>1-2C:</b> Local sustainability & Renewable energy (2)  Room 103	<b>1-2D:</b> Food–energy–water nexus (2)  Room 107	<b>1-2E:</b> Circular economy & Sustainable design (2)  Room 108	<b>1-2F:</b> Carbon & nitrogen flows in urban-industrial symbiosis  Room 109
	Break					
4:50pm - 6:10pm	<b>1-3A:</b> Technology as enabler of collective wisdom for LCA  KFC Hall 2nd	<b>1-3B:</b> Supply chain risks & Resource efficiency  Room 101/102	<b>1-3C:</b> Local sustainability & Renewable energy (3)  Room 103	<b>1-3D:</b> Food–energy–water nexus (3)  Room 107	<b>1-3E:</b> Circular economy & Sustainable design (3)  Room 108	<b>1-3F:</b> Carbon & nitrogen flows from households  Room 109
	Break					
6:30pm - 8:00pm	<b>Young Researchers Meeting</b>  KFC Hall 2nd					

<b>October 11, Thursday</b>						
<b>10:00am - 11:40am</b>	<b>2-1A:</b> Environmental Footprint – comprehensiveness of analysis vs. simplicity of communication (1)  <b>KFC Hall 2nd</b>	<b>2-1B:</b> Emerging technologies & Supply chains  <b>Room 101/102</b>	<b>2-1C:</b> Circular economy & Assessment methods/indices  <b>Room 103</b>	<b>2-1D:</b> Plantation crops & Sustainability assessment  <b>Room 107</b>	<b>2-1E:</b> Circular economy & Behavioral science (1)  <b>Room 108</b>	<b>2-1F:</b> Progress in inventory analysis methodologies  <b>Room 109</b>
Lunch						
<b>1:00pm - 2:40pm</b>	<b>2-2A:</b> Environmental Footprint – comprehensiveness of analysis vs. simplicity of communication (2)  <b>KFC Hall 2nd</b>	<b>2-2B:</b> Green technologies & Material criticality  <b>Room 101/102</b>	<b>2-2C:</b> Wastewater & Life cycle thinking  <b>Room 103</b>	<b>2-2D:</b> Sustainable food consumption & production  <b>Room 107</b>	<b>2-2E:</b> Circular economy & Behavioral science (2)  <b>Room 108</b>	<b>2-2F:</b> Sustainability indices  <b>Room 109</b>
Break						
<b>3:00pm - 4:20pm</b>	<b>2-3A:</b> Sustainability assessment methods  <b>KFC Hall 2nd</b>	<b>2-3B:</b> Green technologies & Life cycle thinking  <b>Room 101/102</b>	<b>2-3C:</b> Waste management & recycling  <b>Room 103</b>	<b>2-3D:</b> Food–energy–water nexus (4)  <b>Room 107</b>	<b>2-3E:</b> Circular economy & Input–output analysis  <b>Room 108</b>	<b>2-3F:</b> Progress in impact assessment methodologies  <b>Room 109</b>
Break						
<b>4:30pm - 6:30pm</b>	<b>Poster session</b>					
	<b>4:30pm - 5:30pm</b> Core time 1 <b>5:30pm - 6:30pm</b> Core time 2					<b>KFC Hall Annex</b>
Break						
<b>7:00 pm - 9:00pm</b>	<b>Banquet</b>					
	<b>Dai-ichi Hotel Ryogoku 5F Kiyosumi</b>					

<b>October 12, Friday</b>						
<b>10:20am - 11:40am</b>	<b>3-1A:</b> Innovations & Life cycle thinking  <b>KFC Hall 2nd</b>	<b>3-1B:</b> National hotspot analysis & Global supply chains  <b>Room 101/102</b>	<b>3-1C:</b> Metal production & Sustainability assessment  <b>Room 103</b>		<b>3-1E:</b> Automobile life cycles  <b>Room 108</b>	
Lunch						
<b>1:00pm - 2:20pm</b>	<b>3-2A:</b> Innovative policy design & Sustainability analysis: A dual relation  <b>KFC Hall 2nd</b>	<b>3-2B:</b> Sustainable society by integration of adaptation & mitigation (1)  <b>Room 101/102</b>	<b>3-2C:</b> Organic waste & Life cycle thinking  <b>Room 103</b>	<b>3-2D:</b> Electrical/electronic equipment & Resources  <b>Room 107</b>	<b>3-2E:</b> Advanced vehicles & Sustainability assessment  <b>Room 108</b>	
<b>2:40pm - 4:00pm</b>		<b>3-3B:</b> Sustainable society by integration of adaptation & mitigation (2)  <b>Room 101/102</b>	<b>3-3C:</b> Emerging issues for plastics  <b>Room 103</b>	<b>3-3D:</b> Innovation of power supply for sustainability  <b>Room 107</b>	<b>3-3E:</b> Energy systems & Scenario analysis  <b>Room 108</b>	
Break						
<b>4:30pm - 6:00pm</b>	<b>Closing &amp; Networking drinks</b>					<b>KFC Hall 2nd</b>

## Presentation list: Oral sessions

October 10, Wednesday	
9:30am - 12:30pm	Opening & Plenary  <b>KFC Hall</b>
<b>Keynote 1</b> <b>Japan's Sharing Economy: Present and Future</b> <u>Yuji Ueda</u> Sharing Economy Association, Japan	
<b>Keynote 2</b> <b>The role of the Circular Economy in Reconciling Sustainable Development Goals</b> <u>Ester van der Voet</u> Leiden University, Netherlands	
12:30pm - 1:30pm	Lunch
1:30pm - 2:50pm <b>KFC Hall 2nd</b>	<b>1-1A: Policy-making &amp; LCA (1)</b> Session Chair: <b>Matthias Finkbeiner</b> , TU Berlin, Germany
<b>1-1A-1 1:30pm - 1:50pm</b> <b>Enhancing the effectiveness of organisational environmental policies: insights from Australia</b> <u>Bishal Baniya</u> , <u>Damien Guirco</u> , <u>Scott Kelly</u> Institute for Sustainable Futures, University of Technology Sydney, Australia	
<b>1-1A-2 1:50pm - 2:10pm</b> <b>The complementary use of attributional and consequential LCA for policy support</b> <u>Dieuwertje Louise Schrijvers</u> <sup>1,2</sup> , <u>Philippe Loubet</u> <sup>2,3</sup> , <u>Guido Sonnemann</u> <sup>1,2</sup> <sup>1</sup> University of Bordeaux, ISM, UMR 5255, France; <sup>2</sup> CNRS, ISM, UMR 5255, France; <sup>3</sup> ENSCBP, Bordeaux INP, UMR 5255, France	
<b>1-1A-3 2:10pm - 2:30pm</b> <b>Closing the hole in the automotive tailpipe legislation by life cycle based policies</b> <u>Matthias Finkbeiner</u> , <u>Annekatriin Lehmann</u> Technische Universität Berlin, Chair of Sustainable Engineering, Germany	
<b>1-1A-4 2:30pm - 2:50pm</b> <b>Full LCA of Palm Biodiesel with Policy-based LCIA method</b> <u>Naruetep Lecksiwilai</u> , <u>Shabbir Gheewala</u> The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand	
1:30pm - 2:50pm <b>Room 101/102</b>	<b>1-1B: Supply chain risks &amp; Life cycle thinking</b> Session Chair: <b>Yuh-Ming Lee</b> , National Taipei University, Taiwan Session Chair: <b>Hiroki Hatayama</b> , National Institute of Advanced Industrial Science and Technology, Japan
<b>1-1B-1 1:30pm - 1:50pm</b> <b>Mapping the supply chain disruption risks posed by earthquakes in Japan</b> <u>Jun Nakatani</u> <sup>1</sup> , <u>Hideaki Kurishima</u> <sup>2</sup> , <u>Kiyotaka Tahara</u> <sup>3</sup> , <u>Yuki Kudoh</u> <sup>3</sup> , <u>Ichiro Daigo</u> <sup>1</sup> <sup>1</sup> The University of Tokyo, Japan; <sup>2</sup> Shibaura Institute of Technology; <sup>3</sup> National Institute of Advanced Industrial Science and Technology	
<b>1-1B-2 1:50pm - 2:10pm</b>	

<p><b>From the outside in: integrating product-level commodity supply risk within life cycle sustainability assessment</b></p> <p>Alexander Cimprich<sup>1</sup>, Vanessa Bach<sup>2</sup>, Christoph Helbig<sup>3</sup>, Andrea Thorenz<sup>3</sup>, Dieuwertje Schrijvers<sup>4</sup>, Guido Sonnemann<sup>4</sup>, <u>Steven B. Young</u><sup>1</sup>, Thomas Sonderegger<sup>5</sup></p> <p><sup>1</sup>University of Waterloo, Canada; <sup>2</sup>Technische Universität Berlin; <sup>3</sup>Universität Augsburg; <sup>4</sup>Universite de Bordeaux; <sup>5</sup>ETH Zürich</p>	
<p><b>1-1B-3 2:10pm - 2:30pm</b></p> <p><b>Construction without sand or bitumen? Accounting for supply risks of construction resources</b></p> <p><u>Dimitra Ioannidou</u><sup>1,2,3</sup>, Steven B. Young<sup>4</sup>, Sangwon Suh<sup>3</sup>, Guido Sonnemann<sup>1,2</sup></p> <p><sup>1</sup>Univ. Bordeaux, ISM, UMR 5255, F-33400 Talence, France; <sup>2</sup>CNRS, ISM, UMR 5255, F-33400 Talence, France; <sup>3</sup>Bren School of Environmental Science &amp; Management, University of California, Santa Barbara, CA 93106-5131, USA; <sup>4</sup>School of Environment, Enterprise and Development (SEED), University of Waterloo, Waterloo, Canada</p>	
<p><b>1-1B-4 2:30pm - 2:50pm</b></p> <p><b>Climate-related Financial Risk Assessment Framework – Application to Power Generation Industry</b></p> <p><u>Yu-Che Tseng</u><sup>1,2</sup>, Yuh-Ming Lee<sup>1</sup></p> <p><sup>1</sup>Institute of Natural Resource Management, National Taipei University, New Taipei City 23741, Taiwan; <sup>2</sup>Partner and Taiwan CPA, Climate Change and Sustainability Service, Ernst and Young 11012, Taiwan</p>	
<p><b>1:30pm - 2:50pm</b></p> <p><b>Room 103</b></p>	<p><b>1-1C: Local sustainability &amp; Renewable energy (1)</b></p> <p>Session Chair: <b>Shabbir H. Gheewala</b>, King Mongkut's University of Technology Thonburi, Thailand Session Chair: <b>Yuki Kudoh</b>, National Institute of Advanced Industrial Science and Technology, Japan</p>
<p><b>1-1C-1 1:30pm - 1:50pm</b></p> <p><b>Boundary problem of woody biomass usage: A temporal eco-socio-system approach</b></p> <p><u>Makoto Ooba</u>, Takuya Togawa, Shogo Nakamura, Kazuyoshi Nemoto, Minoru Fujii</p> <p>National Institute for Environmental Studies, Japan</p>	
<p><b>1-1C-2 1:50pm - 2:10pm</b></p> <p><b>Socio-economic and environmental impacts of palm biodiesel development in Thailand</b></p> <p><u>Piyanon Kaenchan</u><sup>1</sup>, Nattapong Puttanapong<sup>2</sup>, Thongchart Bowonthumrongchai<sup>3</sup>, Kitti Limskul<sup>3</sup>, Shabbir H. Gheewala<sup>1</sup></p> <p><sup>1</sup>King Mongkut's University of Technology Thonburi, Thailand; <sup>2</sup>Thammasat University, Thailand; <sup>3</sup>Saitama University, Japan</p>	
<p><b>1-1C-3 2:10pm - 2:30pm</b></p> <p><b>Eco-efficiency of Palm Biorefinery Systems for Food, Fuel and Oleochemical in Thailand</b></p> <p><u>Thapat Silalertruksa</u><sup>1,2</sup>, Shabbir Gheewala<sup>1,2</sup>, Pariyapat Nilsalab<sup>1,2</sup>, Naruetep Lecksiwilai<sup>1,2</sup>, Kunnika Changwichan<sup>1,2</sup>, Napapat Permpool<sup>1,2</sup>, Nattaya Huailuek<sup>1,2</sup></p> <p><sup>1</sup>The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand; <sup>2</sup>Center of Excellence on Energy Technology and Environment, PERDO</p>	
<p><b>1-1C-4 2:30pm - 2:50pm</b></p> <p><b>Environmental Optimization and Economic Feasibility Study of Electricity Production of Palm Oil Mill Effluent (POME) Anaerobic Digestion</b></p> <p>Zainura Zainon Noor, <u>Sharvini Siva Raman</u>, Chun Siong Chong</p> <p>Universiti Teknologi Malaysia, Malaysia</p>	
<p><b>1:30pm - 2:50pm</b></p> <p><b>Room 107</b></p>	<p><b>1-1D: Food–energy–water nexus (1)</b></p> <p>Session Chair: <b>Yandra Arkeman</b>, Bogor Agricultural University, Indonesia Session Chair: <b>Naoki Yoshikawa</b>, Ritsumeikan University, Japan</p>
<p><b>1-1D-1 1:30pm - 1:50pm</b></p> <p><b>Water energy and food nexus in rice production in Thailand</b></p> <p><u>Napat Jakrawatana</u>, Shabbir Gheewala</p> <p>University of Phayao, Thailand</p>	

<b>1-1D-2</b> 1:50pm - 2:10pm	
<b>Biomass and bioenergy potential from an interdisciplinary perspective, another side of the food-energy nexus</b>	
<b>Marisabel Cuberos Balda, Kotaro Kawajiri</b> Research Institute of Science for Safety and Sustainability, AIST, Japan	
<b>1-1D-3</b> 2:10pm - 2:30pm	
<b>Evaluation of current green and blue water requirements based on global food trade balance</b>	
<b>Yohei Yamaguchi, Naoki Yoshikawa, Koji Amano, Seiji Hashimoto</b> Ritsumeikan University, Japan	
<b>1-1D-4</b> 2:30pm - 2:50pm <b>Withdrawn</b>	
<b>More food, less waste: strategies, policies and plans under a Water-Energy-Food-Climate Nexus approach</b>	
<b>Isabel Garcia Herrero<sup>1</sup>, Maria Margallo<sup>1</sup>, Jara Laso<sup>1</sup>, Alba Bala<sup>2</sup>, Pere Fullana<sup>2</sup>, Ian Vazquez Rowe<sup>3</sup>, Maria Jose Durá<sup>1</sup>, Carmen Sarabias<sup>1</sup>, Rebeca Abajas<sup>1</sup>, Francisco Jose Amo-Setien<sup>1</sup>, Ainhoa Quiñones<sup>1</sup>, Angel Irabien<sup>1</sup>, Ruben Aldaco<sup>1</sup></b> <sup>1</sup> Universidad de Cantabria, Spain; <sup>2</sup> Catedra UNESCO de Ciclo de Vida y Cambio Climatico, Universidad Pompeu Fabra, Spain; <sup>3</sup> Pontificia Universidad Católica del Perú, Departamento de Ingeniería, Red Peruana Ciclo de Vida	
<b>1:30pm - 2:50pm</b> <b>Room 108</b>	<b>1-1E: Circular economy &amp; Sustainable design (1)</b> Session Chair: <b>Jordi Cravioto</b> , Ritsumeikan University, Japan Session Chair: <b>Yusuke Kishita</b> , The University of Tokyo, Japan
<b>1-1E-1</b> 1:30pm - 1:50pm	
<b>Global Multi-Value Circulation for “Mottainai” society with higher resource efficiency</b>	
<b>Kohmei Halada<sup>1</sup>, Yasushi Umeda<sup>2</sup>, Ichiro Daigo<sup>2</sup>, Michikazu Kojima<sup>3</sup>, Eiji Yamasue<sup>4</sup></b> <sup>1</sup> Sustainability Design Institute, Japan; <sup>2</sup> University of Tokyo, Japan; <sup>3</sup> Japan External Trade Organization; <sup>4</sup> Ritsumeikan University, Japan	
<b>1-1E-2</b> 1:50pm - 2:10pm	
<b>WEEE valorization in Belgium: how to improve its contribution in a circular economy context with support of LCA and MFA</b>	
<b>Jo Dewulf, Pieter Nachtergaele, Peter Vos, Steven De Meester</b> Ghent University, Belgium	
<b>1-1E-3</b> 2:10pm - 2:30pm	
<b>Assessing the environmental savings potential of Preparing for Reuse for WEEE</b>	
<b>Sandra Boldoczi<sup>1</sup>, Lukas Messmann<sup>1</sup>, Andrea Thorenz<sup>2</sup>, Axel Tuma<sup>1</sup></b> <sup>1</sup> University of Augsburg, Faculty of Business and Economics, Germany; <sup>2</sup> University of Augsburg, Institute of Materials Resource Management, Germany	
<b>1-1E-4</b> 2:30pm - 2:50pm	
<b>Estimation of generated E-wastes in Vietnam considering Lifetime Transition</b>	
<b>Eiji Yamasue<sup>1</sup>, Ichiro Daigo<sup>2</sup>, Jordi Cravioto<sup>1</sup>, Shoki Kosai<sup>1</sup>, Duc-Quang Nguyen<sup>3</sup>, Duc-Huy Tran<sup>3</sup>, Yusuke Kishita<sup>2</sup>, Yasushi Umeda<sup>2</sup></b> <sup>1</sup> Ritsumeikan University, Japan; <sup>2</sup> The University of Tokyo; <sup>3</sup> Hanoi University of Science and Technology	
<b>1:30pm - 2:50pm</b> <b>Room 109</b>	<b>1-1F: Material stock &amp; Sustainability assessment</b> Session Chair: <b>Seiji Hashimoto</b> , Ritsumeikan University, Japan Session Chair: <b>Kenichi Nakajima</b> , National Institute for Environmental Studies, Japan
<b>1-1F-1</b> 1:30pm - 1:50pm	
<b>A dynamic and spatially explicit analysis of household appliances' stocks and flows in Beijing's dwellings</b>	
<b>Yupeng Liu<sup>1,2</sup>, Wei-Qiang Chen<sup>1,2,3</sup>, Jiajia Li<sup>1,2,3</sup></b>	

<sup>1</sup>Key Lab of Urban Environment and Health, Institute of Urban Environment, Chinese Academy of Sciences, China; <sup>2</sup>Xiamen Key Lab of Urban Metabolism, China; <sup>3</sup>University of Chinese Academy of Sciences, China

**1-1F-2** 1:50pm - 2:10pm

**Exbounding the Long-term Dynamics of In-use Stock in Beijing**

**Chenling Fu, Yanxian Li, Yaoguang Li, Xiaolin Zhang, Yan Zhang**  
Beijing Normal University, China

**1-1F-3** 2:10pm - 2:30pm

**The Weight of China-Spatio-temporal dynamics of In-use steel stocks in China**

**Lulu Song, Wei-Qiang Chen**  
Institute of Urban Environment, Chinese Academy of Sciences, China

**1-1F-4** 2:30pm - 2:50pm

**Energy Consumption of Primary Gold Mining and Gold Recycling**

**Carin Aichele, Mario Schmidt**  
Pforzheim University, Germany

**2:50pm - 3:10pm** Break

**3:10pm - 4:30pm** **1-2A: Policy-making & LCA (2)**

**KFC Hall 2nd**

Session Chair: **Vanessa Bach**, Technische Universität Berlin, Germany  
Session Chair: **Guido Sonnemann**, University of Bordeaux, France

**1-2A-1** 3:10pm - 3:30pm

**Role of Vehicle Inspection Policy in Climate Mitigation: The Case of Japan**

**Yuya Nakamoto, Shigemi Kagawa**  
Kyushu university, Japan

**1-2A-2** 3:30pm - 3:50pm

**Assessing the impacts of reprocessing Used Nuclear Fuels: a UK case study**

**Andrea Paulillo<sup>1</sup>, Roland Clift<sup>2</sup>, Jonathan Dodds<sup>3</sup>, Andrew Milliken<sup>4</sup>, Stephen J. Palethorpe<sup>3</sup>, Paola Lettieri<sup>1</sup>**  
<sup>1</sup>University College London, United Kingdom; <sup>2</sup>University of Surrey, United Kingdom; <sup>3</sup>National Nuclear Laboratory, United Kingdom; <sup>4</sup>Sellafield Ltd.

**1-2A-3** 3:50pm - 4:10pm

**Lima LCA database roadmap training**

**Ian Vázquez-Rowe<sup>1</sup>, Bruce W. Vigon<sup>2</sup>, Camilo I. Bastías<sup>3</sup>, Ricardo E. Estrada<sup>4</sup>, Reynaldo Félix<sup>5</sup>, Benjamín J. Lagos<sup>3</sup>, Tiago Braga<sup>6</sup>**

<sup>1</sup>Peruvian LCA Network, Department of Engineering, Pontificia Universidad Católica del Perú, Av. Universitaria 1801, San Miguel 1801, Lima, Perú.; <sup>2</sup>Brejeja Environmental Consulting LLC Pensacola, FL USA 32503.; <sup>3</sup>Regenerativa, La Concepción 191, Of. 1201, Providencia, Santiago, Chile.; <sup>4</sup>Dirección de Calidad Ambiental y Ecoeficiencia, Ministerio del Ambiente (MINAM), San Isidro, Lima, Perú.; <sup>5</sup>Centro de Análisis de Ciclo de Vida y Diseño Sustentable, Bohemia 2-9, Bosques del Lago, Cuautitlán Izcalli, Estado de México, México.; <sup>6</sup>Brazilian Institute for Information in Science and Technology and Universidade de Brasília, SAUS 5, Bloco H, Sala 604, Brasília, Brasil, 70070-912.

**1-2A-4** 4:10pm - 4:30pm

**Identifying Regulatory Risks for NdFeB Permanent Magnet Production**

**Gwendolyn Bailey<sup>1</sup>, Robert Pell<sup>2</sup>, James Goddin<sup>3</sup>, Kimberly Marshall<sup>3</sup>, Paul Ylloja<sup>3</sup>, Wim Dewulf<sup>1</sup>, Karel Van Acker<sup>1</sup>**

<sup>1</sup>KU Leuven; <sup>2</sup>University of Exeter (Camborne School of Mines); <sup>3</sup>Granta Design

**3:10pm - 4:30pm**

**Room 101/102**

**1-2B: Business opportunities & Life cycle thinking**

Session Chair: **Steven Bruce Young**, University of Waterloo, Canada  
Session Chair: **Atsushi Inaba**, Kogakuin University, Japan

**1-2B-1** 3:10pm - 3:30pm

<p><b>Monetization: taking LCA beyond the environmental dimension</b></p> <p><b>Max Sonnen</b> Ecomatters B.V., Netherlands</p>	
<p><b>1-2B-2</b> 3:30pm - 3:50pm</p> <p><b>LCA in companies: driving business, leading innovation, mitigating risk, fostering compliance</b></p> <p><b>Martin Baitz</b>, Harald Florin, Sebastian Schulz thinkstep AG, Germany</p>	
<p><b>1-2B-3</b> 3:50pm - 4:10pm</p> <p><b>Always business with Eco-Economics</b></p> <p><b>Heidi Beers</b>, Mark Breed, Shuichi Osaki, Nobuyuki Takakura Teijin Ltd.</p>	
<p><b>1-2B-4</b> 4:10pm - 4:30pm</p> <p><b>The analysis of material cycles in companies by using the MFCA method</b></p> <p><b>Mario Schmidt</b> Pforzheim University, Germany</p>	
<p><b>3:10pm - 4:30pm</b></p> <p><b>Room 103</b></p>	<p><b>1-2C: Local sustainability &amp; Renewable energy (2)</b></p> <p>Session Chair: <b>Thapat Silalertruksa</b>, King Mongkut's University of Technology Thonburi, Thailand Session Chair: <b>Yasuhiro Fukushima</b>, Tohoku University, Japan</p>
<p><b>1-2C-1</b> 3:10pm - 3:30pm</p> <p><b>Environmental and economic sustainability of off-grid solar photovoltaic systems integrated with storage: the effect of scale and type of battery</b></p> <p><b>Jhud Mikhail Aberilla</b><sup>1,2</sup>, <b>Alejandro Gallego-Schmid</b><sup>1</sup>, <b>Laurence Stamford</b><sup>1</sup>, <b>Adisa Azapagic</b><sup>1</sup> <sup>1</sup>Sustainable Industrial Systems, University of Manchester, Manchester, United Kingdom; <sup>2</sup>University of the Philippines Diliman, Quezon City, Philippines</p>	
<p><b>1-2C-2</b> 3:30pm - 3:50pm</p> <p><b>Application of life cycle thinking for regional transformation considering local resource circulation with energy technology options</b></p> <p><b>Yasunori Kikuchi</b><sup>1</sup>, <b>Yuko Oshita</b><sup>2</sup>, <b>Yasuhiro Fukushima</b><sup>3</sup> <sup>1</sup>the University of Tokyo, Japan; <sup>2</sup>Kobe University, Japan; <sup>3</sup>Tohoku University, Japan</p>	
<p><b>1-2C-3</b> 3:50pm - 4:10pm</p> <p><b>Analysis of socio-economic effects on local area induced by renewable energy utilization: A case of Tanegashima, Japan</b></p> <p><b>Yuko Oshita</b><sup>1</sup>, <b>Yasuhiro Fukushima</b><sup>2</sup>, <b>Yasunori Kikuchi</b><sup>3</sup> <sup>1</sup>Kobe University, Japan; <sup>2</sup>Tohoku University, Japan; <sup>3</sup>The University of Tokyo, Japan</p>	
<p><b>1-2C-4</b> 4:10pm - 4:30pm</p> <p><b>Building life cycle capacity on the regional level</b></p> <p><b>Philip Strothmann</b>, <b>Guido Sonnemann</b>, <b>Fritz Balkau</b> FSLCI e.V., Germany</p>	
<p><b>3:10pm - 4:30pm</b></p> <p><b>Room 107</b></p>	<p><b>1-2D: Food–energy–water nexus (2)</b></p> <p>Session Chair: <b>Erwinsyah</b>, Indonesian Oil Palm Research Institute, Indonesia Session Chair: <b>Kiyotada Hayashi</b>, National Agriculture and Food Research Organization, Japan</p>
<p><b>1-2D-1</b> 3:10pm - 3:30pm</p> <p><b>Life Cycle Assessment of the Water-Energy Nexus (WEN) in the urban building stock: The case of Heidelberg, Germany</b></p> <p><b>Jasmin Friedrich</b>, <b>Witold-Roger Pogonietz</b>, <b>Helmut Lehn</b></p>	

KIT, Germany

**1-2D-2** 3:30pm - 3:50pm

**A user-friendly comprehensive assessment platform: GIS-based Regional Environmental Assessment Tool for Food-Energy-Water nexus (GREAT for FEW)**

**Chia-Chun Lin<sup>1</sup>, Ying-Chen Lin<sup>2</sup>, Kuang-Yu Yuan<sup>1</sup>, Pei-Te Chiueh<sup>1</sup>**

<sup>1</sup>National Taiwan University, Taiwan; <sup>2</sup>Feng Chia University, Taiwan

**1-2D-3** 3:50pm - 4:10pm

**Life cycle assessment of natural farming: Case study of green tea production in Nara prefecture, Japan**

**Naoki Yoshikawa<sup>1</sup>, Ken'ichi Ikawa<sup>2</sup>, Kouki Tsuji<sup>1</sup>, Shunta Furihata<sup>1</sup>, Koji Amano<sup>1</sup>**

<sup>1</sup>Ritsumeikan University; <sup>2</sup>Kenichi Sizen Nouen

4:10pm - 4:30pm

**Overall discussion**

3:10pm - 4:30pm

**Room 108**

**1-2E: Circular economy & Sustainable design (2)**

Session Chair: **Jo Dewulf**, Ghent University, Belgium

Session Chair: **Eri Amasawa**, The University of Tokyo, Japan

**1-2E-1** 3:10pm - 3:30pm

**How Do We Extract the Essence of Sustainable Consumption and Production? - A Case Study of Southeast Asia**

**Yusuke Kishita<sup>1</sup>, Shogo Kuroyama<sup>1</sup>, Mitsutaka Matsumoto<sup>2</sup>, Michikazu Kojima<sup>3</sup>, Yasushi Umeda<sup>1</sup>**

<sup>1</sup>The University of Tokyo; <sup>2</sup>National Institute of Advanced Industrial Science and Technology; <sup>3</sup>Institute of Developing Economies, Japan External Trade Organization

**1-2E-2** 3:30pm - 3:50pm

**Developing a model to simulate the markets of remanufactured products**

**Mitsutaka Matsumoto<sup>1</sup>, Nuwan Lasantha Senevirathne<sup>1</sup>, Yasushi Umeda<sup>2</sup>**

<sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan; <sup>2</sup>The University of Tokyo

**1-2E-3** 3:50pm - 4:10pm

**Modelling benefits of co-processing in Vietnamese steel and cement production: a South East Asian integration?**

**Jordi Cravioto<sup>1</sup>, Duc-Quang Nguyen<sup>2</sup>, Tran-Duc Huy<sup>2</sup>, Eiji Yamasue<sup>1</sup>**

<sup>1</sup>Ritsumeikan University, Japan; <sup>2</sup>Hanoi University of Science and Technology, Vietnam

**1-2E-4** 4:10pm - 4:30pm

**Economic and environmental opportunity costs of regional development in WEEE reverse networks**

**Lukas Messmann<sup>1</sup>, Christoph Helbig<sup>1</sup>, Andrea Thorenz<sup>2</sup>, Axel Tuma<sup>1</sup>**

<sup>1</sup>University of Augsburg, Faculty of Business and Economics, Germany; <sup>2</sup>University of Augsburg, Institute of Materials Resource Management, Germany

3:10pm - 4:30pm

**Room 109**

**1-2F: Carbon & Nitrogen flows in urban-industrial symbiosis**

Session Chair: **Abhishek Abhishek**, ETH Zurich, Switzerland

Session Chair: **Yosuke Shigetomi**, Nagasaki University, Japan

**1-2F-1** 3:10pm - 3:30pm

**Green Innovation for Mitigating Climate Change towards Carbon-Neutral Circular Economy**

**Rattawan Mungkung<sup>1,2</sup>, Kannika Sorakon<sup>1</sup>, Anyarat Lamai<sup>1</sup>**

<sup>1</sup>Centre of Excellence on environmental strategy for GREEN business (VGREEN), Thailand; <sup>2</sup>Department of Environmental Technology and Management, Faculty of Environment, Kasetsart University, Bangkok, Thailand



<b>1-2F-2</b>	<b>3:30pm - 3:50pm</b>	<b>Nitrogen flow analysis focusing on industrial applications in Japan</b> <b>Kiwamu Katagiri, Kazuyo Matsubae, Tetsuya Nagasaka</b> Tohoku university, Japan
<b>1-2F-3</b>	<b>3:50pm - 4:10pm</b>	<b>Decomposition analysis of activated nitrogen consumption factors in Beijing</b> <b>Xiaolin Zhang, Yanxian Li, Yaoguang Li, Chenling Fu, Yan Zhang</b> Beijing Normal University, China
<b>1-2F-4</b>	<b>4:10pm - 4:30pm</b>	<b>Assessment of energy saving and environmental benefit effect with urban-industrial symbiosis system</b> <b>Lu Sun<sup>1,2</sup></b> <sup>1</sup> The University of Tokyo; <sup>2</sup> National Institute for Environmental Studies
<b>4:30pm - 4:50pm</b>	Break	
<b>4:50pm - 6:10pm</b> <b>KFC Hall 2nd</b>	<b>1-3A: Technology as enabler of collective wisdom for LCA</b> Session Chair: <b>Mark Goedkoop</b> , PRé Sustainability, Netherlands	
<b>1-3A-1</b>	<b>4:50pm - 4:58pm</b>	<b>How a cloud platform can maximize the impact of LCA Expertise</b> <b>Eric Mieras</b> PRé Sustainability, Netherlands
<b>1-3A-2</b>	<b>4:58pm - 5:06pm</b>	<b>The use of Life Cycle Information in a Digital Circular Economy</b> <b>Martina Prox</b> ifu Institute for Environmental IT Hamburg, Germany
<b>1-3A-3</b>	<b>5:06pm - 5:14pm</b>	<b>Stakeholder Perspectives on Business Requirements for an Automated Life Cycle Assessment using available internal data</b> <b>Andreas Schifflleitner<sup>1</sup>, Mieke Klein<sup>2</sup>, Jan Hedemann<sup>2</sup>, Martina Prox<sup>2</sup></b> <sup>1</sup> iPoint-Austria GmbH, Austria; <sup>2</sup> IFU Hamburg GmbH, Germany
<b>1-3A-4</b>	<b>5:14pm - 5:22pm</b>	<b>Applications of Machine Learning Techniques to Life Cycle Assessment: A Review</b> <b>Runsheng Song, Mengya Tao, Yuwei Qin, Sangwon Suh</b> University of California, Santa Barbara, United States
<b>1-3A-5</b>	<b>5:22pm - 5:30pm</b>	<b>Project to Lead Eco-design Integration with Aerospace Development and Engineering Systems</b> <b>James Robert Jarrett Goddin<sup>1</sup>, Luca Petrucci<sup>1</sup>, Andrew Clifton<sup>2</sup></b> <sup>1</sup> Granta Design, United Kingdom; <sup>2</sup> Rolls-Royce PLC, United Kingdom
<b>5:30pm - 6:10pm</b> <b>Panel discussion</b>		
<b>4:50pm - 6:10pm</b> <b>Room 101/102</b>	<b>1-3B: Supply chain risks &amp; Resource efficiency</b> Session Chair: <b>Benjamin Sprecher</b> , Leiden University, Netherlands Session Chair: <b>Ichiro Daigo</b> , The University of Tokyo, Japan	

<b>1-3B-1</b> 4:50pm - 5:10pm	
<b>Methods identifying conflict affected and high-risk areas in supply-chains of minerals</b>	
<b>Steven B. Young</b> University of Waterloo, Canada	
<b>1-3B-2</b> 5:10pm - 5:30pm	
<b>Where the Supply Chain Begins: Stakeholder Response to Mining Pressure in Rural Peru</b>	
<b>David Daugherty Sussman</b> The Tokyo Foundation for Policy Research, Japan	
<b>1-3B-3</b> 5:30pm - 5:50pm	
<b>Comprehensive assessment of abiotic and biotic resource use</b>	
<b>Vanessa Bach, Markus Berger, Matthias Finkbeiner</b> Technische Universität Berlin, Germany	
<b>1-3B-4</b> 5:50pm - 6:10pm	
<b>100 Pioneers in Efficient Resource Management - Best practice cases</b>	
<b>Marlene Preiss, Mario Schmidt, Christian Haubach</b> Pforzheim University, Germany	
<b>4:50pm - 6:10pm</b> <b>Room 103</b>	<b>1-3C: Local sustainability &amp; Renewable energy (3)</b> Session Chair: <b>Erik O Ahlgren</b> , Chalmers University of Technology, Sweden Session Chair: <b>Shunichi Hienuki</b> , Yokohama National University, Japan
<b>1-3C-1</b> 4:50pm - 5:10pm	
<b>Using life cycle impact assessment to predict site-specific ecological impacts of remaining global hydropower potentials</b>	
<b>Martin Dorber<sup>1</sup>, Anders Arvesen<sup>1</sup>, Odd Terje Sandlund<sup>2</sup>, Roel May<sup>2</sup>, Francesca Verones<sup>1</sup></b> <sup>1</sup> Norwegian University of Science and Technology (NTNU); <sup>2</sup> Norwegian Institute for Nature Research (NINA)	
<b>1-3C-2</b> 5:10pm - 5:30pm	
<b>Environmental and socio-economic performances of local uses of rice husk ash from rice husk based power plants</b>	
<b>Jittima Prasara-A<sup>1</sup>, Shabbir H. Gheewala<sup>2,3</sup></b> <sup>1</sup> Climate Change and Adaptation Research Unit (CCARE), Faculty of Environment and Resource Studies, Mahasarakham University, Mahasarakham 44150, Thailand; <sup>2</sup> Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Bangkok 10140, Thailand; <sup>3</sup> Centre of Excellence on Energy Technology and Environment, Science and Technology Postgraduate Education and Research Development Office (PERDO), Bangkok 10400, Thailand	
<b>1-3C-3</b> 5:30pm - 5:50pm	
<b>Environmental impacts assessment of bio-butanol production from agrofood wastes</b>	
<b>Roberto Chirone<sup>1</sup>, Giuseppe Olivieri<sup>2</sup>, Piero Bareschino<sup>3</sup>, Antonio Marzocchella<sup>2</sup>, Paola Lettieri<sup>1</sup></b> <sup>1</sup> University College London, United Kingdom; <sup>2</sup> Università degli Studi di Napoli Federico II, Italia; <sup>3</sup> Università Degli Studi del Sannio, Italia	
<b>1-3C-4</b> 5:50pm - 6:10pm	
<b>Comparative Greenhouse Gas Emission and Energy Assessment of Municipal Solid Waste Management Scenarios for the City of Brasilia, Brazil</b>	
<b>Francisco Javier Contreras<sup>1</sup>, Sora Yi<sup>2</sup></b> <sup>1</sup> Graduate Program on Environmental Technology and Water Resources, University of Brasilia, Brazil.; <sup>2</sup> Korea Environmental Institute, Sejong, South Korea.	
<b>4:50pm - 6:10pm</b> <b>Room 107</b>	<b>1-3D: Food–energy–water nexus (3)</b> Session Chair: <b>Angel Daniel Avadi</b> , CIRAD, France Session Chair: <b>Masanori Saito</b> , Tohoku University, Japan

<b>1-3D-1</b> 4:50pm - 5:10pm	
<b>Developing life cycle inventories for agricultural production systems in Asian countries: Lessons from LCA Food Supply Chains Asia Project</b>	
<b>Kiyotada Hayashi<sup>1</sup>, Koichi Shobatake<sup>2</sup>, Naoki Makino<sup>2</sup>, Masanori Saito<sup>3</sup></b>	
<sup>1</sup> National Agriculture and Food Research Organization, Japan; <sup>2</sup> TCO2 Co. Ltd.; <sup>3</sup> Tohoku University	
<b>1-3D-2</b> 5:10pm - 5:30pm	
<b>Differentiating Life Cycle GHG Emissions from Palm Oil Production by Locations and Management Practices</b>	
<b>Vita Dhian Lelyana<sup>1</sup>, Kiyotada Hayashi<sup>2</sup>, Erwinsyah Erwinsyah<sup>1</sup>, Mugiyanto Mugiyanto<sup>3</sup>, Agus Haryanto<sup>4</sup></b>	
<sup>1</sup> Indonesian Oil Palm Research Institute, Indonesia; <sup>2</sup> National Agriculture and Food Research Organization; <sup>3</sup> PP London Sumatera Indonesia Tbk; <sup>4</sup> University of Lampung	
<b>1-3D-3</b> 5:30pm - 5:50pm	
<b>Improving energy-efficiency of farming practices: A case study of rice production in Central Luzon, Philippines</b>	
<b>Elmer Granadozo Bautista<sup>1</sup>, Masanori Saito<sup>2</sup>, Kiyotada Hayashi<sup>3</sup></b>	
<sup>1</sup> Philippine Rice Research Institute, Philippines; <sup>2</sup> Tohoku University; <sup>3</sup> National National Agriculture and Food Research Organization	
<b>1-3D-4</b> 5:50pm - 6:10pm	
<b>Measuring Carbon Footprint of Potato Chips Agroindustry Supply Chains</b>	
<b>Ririn Regiana Dwi Satya<sup>1</sup>, Yandra Arkeman<sup>1</sup>, Kiyotada Hayashi<sup>2</sup></b>	
<sup>1</sup> Bogor Agricultural University, Indonesia; <sup>2</sup> National Agricultural Research Organization (NARO), Tsukuba, Japan	
<b>4:50pm - 6:10pm</b> <b>Room 108</b>	<b>1-3E: Circular economy &amp; Sustainable design (3)</b>  Session Chair: <b>Mélanie Despeisse</b> , Chalmers University of Technology, Sweden Session Chair: <b>Mitsutaka Matsumoto</b> , National Institute of Advanced Industrial Science and Technology, Japan
<b>1-3E-1</b> 4:50pm - 5:10pm	
<b>Technological challenges to promote remanufacturing</b>	
<b>Mitsutaka Matsumoto<sup>1</sup>, Yasunari Matsuno<sup>2</sup>, Kenichi Nakajima<sup>3</sup>, Masao Hayakawa<sup>4</sup>, Hideyuki Murakami<sup>4</sup></b>	
<sup>1</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan; <sup>2</sup> Chiba University, Japan; <sup>3</sup> National Institute for Environmental Studies (NIES), Japan; <sup>4</sup> National Institute for Materials Science (NIMS), Japan	
<b>1-3E-2</b> 5:10pm - 5:30pm	
<b>Analysis of GHG emission reduction effect by remanufacturing of industrial pump</b>	
<b>Sejik Kim, Gibeom Hong, Dongkyu Kim, Ik Kim</b>	
Smart eco, South Korea	
<b>1-3E-3</b> 5:30pm - 5:50pm	
<b>Integration of design consequences into life cycle design of packaging for sustainability</b>	
<b>Naoki Yokokawa, Yutaro Masuda, Eri Amasawa, Hirokazu Sugiyama, Masahiko Hirao</b>	
The University of Tokyo, Japan	
<b>1-3E-4</b> 5:50pm - 6:10pm	
<b>Proposal of design indices from the producer and consumer perspectives for sustainable products</b>	
<b>Yoon-Young Chun<sup>1</sup>, Kun-Mo Lee<sup>2</sup>, Jong Seok Lee<sup>2</sup>, Joo Young Lee<sup>2</sup>, Min Hyeok Lee<sup>2</sup>, Nozomu Mishima<sup>3</sup>, Kiyotaka Tahara<sup>1</sup></b>	
<sup>1</sup> AIST, Japan; <sup>2</sup> Ajou University, Korea; <sup>3</sup> Akita University, Japan	
<b>4:50pm - 6:10pm</b> <b>Room 109</b>	<b>1-3F: Carbon &amp; Nitrogen flows from households</b>  Session Chair: <b>Yan Zhang</b> , Beijing Normal University, China Session Chair: <b>Hajime Ohno</b> , Tohoku University, Japan

<b>1-3F-1</b>	<b>4:50pm - 5:10pm</b>	<b>Food nitrogen and phosphorus footprints trends and prospects associated with food consumption patterns</b> <b>Azusa Oita</b> , Kiwamu Katagiri, Yuko Mano, Elizabeth Webeck, Kazuyo Matsubae Tohoku University, Japan
<b>1-3F-2</b>	<b>5:10pm - 5:30pm</b>	<b>Evaluation of carbon intensity of goods consumed by households by integrating footprint and flow of carbon: the case of Japan</b> <b>Hajime Ohno</b> <sup>1</sup> , Yosuke Shigetomi <sup>2</sup> , Yasuhiro Fukushima <sup>1</sup> <sup>1</sup> Tohoku University, Japan; <sup>2</sup> Nagasaki University, Japan
<b>1-3F-3</b>	<b>5:30pm - 5:50pm</b>	<b>Residential energy consumption and its associated emission based on input-output model</b> <b>Yin Long</b> <sup>1</sup> , Habura Borjigin <sup>2</sup> , Yoshida Yoshikuni <sup>1</sup> <sup>1</sup> University of Tokyo, Japan; <sup>2</sup> National Institute for Environmental studies, Japan
<b>1-3F-4</b>	<b>5:50pm - 6:10pm</b>	<b>The role of households in avoiding carbon release in end-of-life products: the case of Japan</b> <b>Yosuke Shigetomi</b> <sup>1</sup> , Hajime Ohno <sup>2</sup> , Yasuhiro Fukushima <sup>2</sup> <sup>1</sup> Nagasaki University, Japan; <sup>2</sup> Tohoku University, Japan
<b>6:10pm - 6:30pm</b>	Break	
<b>6:30pm - 8:00pm</b>	<b>Young Researchers Meeting</b>	<b>KFC Hall 2nd</b>

<b>October 11, Thursday</b>		
<b>10:00am - 11:40am</b> <b>KFC Hall 2nd</b>	<b>2-1A: Environmental Footprint – comprehensiveness of analysis vs. simplicity of communication (1)</b> Session Chair: <b>Marc-Andree Wolf</b> , maki Consulting GmbH, Germany Session Chair: <b>Masayuki Kanzaki</b> , Japan Environmental Management Association for Industry, Japan	
<b>10:00am - 10:20am</b> <b>Video message from European Commission, DG Environment</b>		
<b>2-1A-1</b>	<b>10:20am - 10:40am</b>	<b>IT equipment pilot test in the European Environmental Footprint</b> <b>Osamu Namikawa</b> Hitachi, Ltd., Japan
<b>2-1A-2</b>	<b>10:40am - 11:00am</b>	<b>Rechargeable Batteries - Product Environmental Footprint (PEF) pilot project</b> <b>Carol-Lynne Pettit</b> <sup>1</sup> , Claude Chanson <sup>2</sup> , Clemence Siret <sup>3</sup> , Mark Mistry <sup>4</sup> <sup>1</sup> Cobalt Institute, United Kingdom; <sup>2</sup> Recharge, Belgium; <sup>3</sup> Saft, France; <sup>4</sup> Nickel Institute, Germany
<b>2-1A-3</b>	<b>11:00am - 11:20am</b>	<b>PEF for Decorative Paints case study: Experiences, best practices and next steps</b> <b>Max Sonnen</b> Ecomatters B.V., Netherlands
<b>2-1A-4</b>	<b>11:20am - 11:40am</b>	<b>Available support to stakeholders worldwide during the EU Environmental Footprint transition</b>

<b>phase until early 2021</b>	
<b>Marc-Andree Wolf<sup>1</sup>, Hannes Partl<sup>2</sup>, Andreas Busa<sup>2</sup>, Marta Bonell<sup>2</sup>, Juliane Franze<sup>3</sup>, Kirana Chomkhamsri Wolf<sup>1</sup></b> <sup>1</sup> maki Consulting GmbH, Germany; <sup>2</sup> thinkstep AG, Germany; <sup>3</sup> SGS Germany GmbH, Germany	
<b>10:00am - 11:40am</b>	<b>2-1B: Emerging technologies &amp; Supply chains</b>
<b>Room 101/102</b>	Session Chair: <b>Witold-Roger Poganietz</b> , Karlsruhe Institute of Technology (KIT), Germany Session Chair: <b>Kotaro Kawajiri</b> , National Institute of Advanced Industrial Science and Technology, Japan
<b>2-1B-1</b> 10:00am - 10:20am	<b>Technology forecasting to meet future societies by constructing context scenarios</b> <b>Witold-Roger Poganietz<sup>1</sup>, Annika Weiss<sup>1</sup>, Dominik Poncette<sup>1</sup>, Marlen de Weser<sup>2</sup></b> <sup>1</sup> Karlsruhe Institute of Technology (KIT), Germany; <sup>2</sup> Toyota Motor Europe, Belgium
<b>2-1B-2</b> 10:20am - 10:40am	<b>Environmental screening of electrode materials for a novel Al-ion battery</b> <b>Linda Ager-Wick Ellingsen</b> Norwegian University of Science and Technology (NTNU), Norway
<b>2-1B-3</b> 10:40am - 11:00am	<b>Methodological Development of Life Cycle Assessment of Future Technologies Considering Scaling Effect</b> <b>Kotaro Kawajiri</b> National Institute of Advanced Industrial Science and Technology, Japan
<b>2-1B-4</b> 11:00am - 11:20am	<b>Eco-efficiency of Ni-Co hydroxide and reduced graphene oxide for energy storage</b> <b>Edis Glogic<sup>1,2</sup>, Alberto Adan Mas<sup>2,3</sup>, Steven B. Young<sup>1</sup>, Guido Sonnemann<sup>2</sup></b> <sup>1</sup> University of Waterloo, France; <sup>2</sup> University of Bordeaux, France; <sup>3</sup> University of Lisbon, Portugal
<b>2-1B-5</b> 11:20am - 11:40am	<b>Environmental Impact Assessment Methodology of Emerging Technologies: Case of Car Materials</b> <b>Mikiaki Hasegawa, Eri Amasawa, Miyuki Ota, Hirokazu Sugiyama, Masahiko Hirao</b> The University of Tokyo, Japan
<b>10:00am - 11:40am</b>	<b>2-1C: Circular economy &amp; Assessment methods/indices</b>
<b>Room 103</b>	Session Chair: <b>Christian Haubach</b> , Pforzheim University, Germany Session Chair: <b>Yasushi Kondo</b> , Waseda University, Japan
<b>2-1C-1</b> 10:00am - 10:20am	<b>Understanding the value of various circular economy indicators: a framework for a better positioning in function of policy support</b> <b>Gustavo Longaray, Sophie Huysveld, Steven De Meester, Jo Dewulf</b> Ghent University, Belgium
<b>2-1C-2</b> 10:20am - 10:40am	<b>Applying Urban Metabolism to the Assessment of Resource Productivity of Municipal Water Reclamation and Waste Treatment</b> <b>Chia-Yun Yeh, Yuh-Ming Lee</b> National Taipei University, Taiwan
<b>2-1C-3</b> 10:40am - 11:00am	<b>Urban Energy and Material Flow Analysis in the Perspective of Circular Economy</b> <b>Pei-Hsuan Huang, Yuh-Ming Lee</b> Institute of Natural Resource Management, National Taipei University
<b>2-1C-4</b> 11:00am - 11:20am	

<p><b>Dynamic vs static approaches in LCA to assess the long term global warming effects of novel waste-based construction materials</b></p> <p><b>Andrea Di Maria<sup>1</sup>, Annie Levasseur<sup>2</sup>, Karel Van Acker<sup>1</sup></b>  <sup>1</sup>KU Leuven, Belgium; <sup>2</sup>École de technologie supérieure, Montréal, Québec, Canada</p>	
<p><b>2-1C-5 11:20am - 11:40am</b></p> <p><b>Model-based investigation of co-creation in local green transitions</b></p> <p><b>Erik O Ahlgren, Sujeetha Selvakkumaran</b>  Chalmers University of Technology, Sweden</p>	
<p><b>10:00am - 11:40am</b></p> <p><b>Room 107</b></p>	<p><b>2-1D: Plantation crops &amp; Sustainability assessment</b></p> <p>Session Chair: <b>Dimitra Ioannidou</b>, University of Bordeaux, France  Session Chair: <b>Azusa Oita</b>, Tohoku University, Japan</p>
<p><b>2-1D-1 10:00am - 10:20am</b></p> <p><b>Malaysian Palm Oil: Sustainability Opportunities, Challenges and the Role of Life Cycle Management</b></p> <p><b>Foo Yuen Ng</b>  Malaysian Palm Oil Council, Malaysia</p>	
<p><b>2-1D-2 10:20am - 10:40am</b></p> <p><b>Life cycle sustainability assessment of cotton - towards a standard assessment framework.</b></p> <p><b>Marzia Traverso<sup>1</sup>, Sabrina Neugebauer<sup>1</sup>, Heinz Zeller<sup>2</sup>, Michela Gioacchini<sup>2</sup></b>  <sup>1</sup>RWTH Aachen University, Germany; <sup>2</sup>Hugo Boss</p>	
<p><b>2-1D-3 10:40am - 11:00am</b></p> <p><b>Eco-Efficiency Assessment of Sugarcane Harvesting: A case study in the central region of Thailand</b></p> <p><b>Patcharaporn Pongpat, Shabbir H. Gheewala</b>  The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand</p>	
<p><b>2-1D-4 11:00am - 11:20am</b></p> <p><b>Tropical okoumé or local pine? Criticality assessment of different wood species used in construction</b></p> <p><b>Dimitra Ioannidou<sup>1,2,3</sup>, Régis Pommier<sup>4</sup>, Guillaume Habert<sup>1</sup>, Guido Sonnemann<sup>2,3</sup></b>  <sup>1</sup>Chair of Sustainable Construction, ETH Zurich, Switzerland; <sup>2</sup>Univ. Bordeaux, ISM, UMR 5255, F-33400 Talence, France; <sup>3</sup>CNRS, ISM, UMR 5255, F-33400 Talence, France; <sup>4</sup>I2M, Univ. Bordeaux, UMR 5295, F-33405 Talence, France</p>	
<p><b>11:20am - 11:40am</b></p> <p><b>Overall discussion</b></p>	
<p><b>10:00am - 11:40am</b></p> <p><b>Room 108</b></p>	<p><b>2-1E: Circular economy &amp; Behavioral science (1)</b></p> <p>Session Chair: <b>Li-hsing Shih</b>, National Cheng Kung University, Taiwan  Session Chair: <b>Ryu Koide</b>, Institute for Global Environmental Strategies, Japan</p>
<p><b>2-1E-1 10:00am - 10:20am</b></p> <p><b>People's preferences on sharing services in Japan and Switzerland</b></p> <p><b>Kiyo Kurisu<sup>1</sup>, Riho Ikeuchi<sup>1</sup>, Jun Nakatani<sup>1</sup>, Bernadette Sütterlin<sup>2</sup>, Michael Siegrist<sup>2</sup>, Yuichi Moriguchi<sup>1</sup></b>  <sup>1</sup>Department of Urban Engineering, School of Engineering, The University of Tokyo, Japan; <sup>2</sup>Consumer Behavior, Institute for Environmental Decisions (IED), ETH Zürich, Switzerland</p>	
<p><b>2-1E-2 10:20am - 10:40am</b></p> <p><b>Systematic classification and scenario analysis of product provision styles for environmental sustainability</b></p> <p><b>Tsubasa Shibata, Eri Amasawa, Hirokazu Sugiyama, Masahiko Hirao</b></p>	

The University of Tokyo, Japan	
<b>2-1E-3</b> 10:40am - 11:00am	<p><b>Evaluation of sharing services from the viewpoints of environmental impacts and consumer behaviors: A case study in major cities of China</b></p> <p><b>Akinari Son</b>, Kiyoko Kurisu, Jun Nakatani, Yuichi Moriguchi University of Tokyo, Japan</p>
<b>2-1E-4</b> 11:00am - 11:20am	<p><b>Explicit and implicit attitudes towards recycling: implications to promoting sustainable consumption</b></p> <p><b>Akiyuki Masuda</b>, Shinsuke Murakami The University of Tokyo, Japan</p>
<b>2-1E-5</b> 11:20am - 11:40am	<p><b>The sustainability assessment of environmental activities for Japanese local governments : A study for recycling activities by citizen groups in Kyoto</b></p> <p><b>Renzhuo Wang</b>, Makoto Nohtomi Waseda University, Graduate School of Environment and Energy Engineering, Japan</p>
10:00am - 11:40am <b>Room 109</b>	<p><b>2-1F: Progress in inventory analysis methodologies</b></p> <p>Session Chair: <b>Martin Eberhard Baitz</b>, thinkstep AG, Germany Session Chair: <b>Kiyotaka Tahara</b>, National Institute of Advanced Industrial Science and Technology, Japan</p>
<b>2-1F-1</b> 10:00am - 10:20am	<p><b>Does the Use of Pre-calculated Uncertainty Values Change the Conclusions of Comparative LCAs? – An Empirical Analysis</b></p> <p><b>Yuwei Qin</b>, <b>Sangwon Suh</b> University of California, Santa Barbara, United States</p>
<b>2-1F-2</b> 10:20am - 10:40am	<p><b>Analysis on the survey results on contribution of products to avoided greenhouse gas emissions</b></p> <p><b>Shoichiro Tsuruta</b><sup>1</sup>, Masayuki Kanzaki<sup>1</sup>, Ichiro Daigo<sup>2</sup>, Masaharu Motoshita<sup>3</sup>, Atsushi Inaba<sup>4</sup> <sup>1</sup>Japan Environmental Management Association for Industry, Japan; <sup>2</sup>The University of Tokyo; <sup>3</sup>National Institute of Advanced Industrial Science and Technology; <sup>4</sup>Kogakuin University</p>
<b>2-1F-3</b> 10:40am - 11:00am	<p><b>LCI methodologies considering recyclability of materials</b></p> <p><b>Ichiro Daigo</b><sup>1</sup>, Hiroki Hatayama<sup>2</sup>, Yoshinao Kobayashi<sup>3</sup>, Kenichi Nakajima<sup>4</sup>, Eiji Yamasue<sup>5</sup>, Kazuyo Matsubae<sup>6</sup> <sup>1</sup>The University of Tokyo, Japan; <sup>2</sup>National Institute of Advanced Industrial Science and Technology; <sup>3</sup>Tokyo Institute of Technology; <sup>4</sup>National Institute for Environmental Studies, Japan; <sup>5</sup>Ritsumeikan University; <sup>6</sup>Tohoku University</p>
<b>2-1F-4</b> 11:00am - 11:20am	<p><b>Life Cycle Thinking of GHGs Emission Between Production-Based and Consumption-Based in Thailand</b></p> <p><b>Viganda Varabuntoonvit</b>, Kultida Kunanuntakij Kasetsart University, Thailand</p>
<b>2-1F-5</b> 11:00am - 11:20am	<p><b>Considering of import products in IDEA</b></p> <p><b>Kiyotaka Tahara</b><sup>1</sup>, Kenichiro Tsukahara<sup>1</sup>, Koichi Shobatake<sup>2</sup>, Kensuke Kobayashi<sup>3</sup> <sup>1</sup>AIST, Japan; <sup>2</sup>TCO2, Japan; <sup>3</sup>Prefectural University of Hiroshima, Japan</p>
11:40am - 1:00pm	Lunch

<p><b>1:00pm - 2:40pm</b> <b>KFC Hall 2nd</b></p>	<p><b>2-2A: Environmental Footprint – comprehensiveness of analysis vs. simplicity of communication (2)</b></p> <p>Session Chair: <b>Marc-Andree Wolf</b>, maki Consulting GmbH, Germany Session Chair: <b>Masayuki Kanzaki</b>, Japan Environmental Management Association for Industry, Japan</p>
<p><b>2-2A-1</b> 1:00pm - 1:20pm</p> <p><b>Thailand's Experience on the Environmental Footprint Shadow Project</b></p> <p><b>Nongnuch Poolsawad</b>, <b>Jitti Mungkalasiri</b>, <b>Saowalak Olarnrithinun</b>, <b>Thumrongrut Mungcharoen</b> National Science and Technology Development Agency, Thailand</p>	
<p><b>2-2A-2</b> 1:20pm - 1:40pm</p> <p><b>PEF Pilot phase – remaining challenges and outlook</b></p> <p><b>Vanessa Bach</b>, <b>Annekatriin Lehmann</b>, <b>Matthias Finkbeiner</b> Technische Universität Berlin, Germany</p>	
<p><b>2-2A-3</b> 1:40pm - 2:00pm</p> <p><b>PEF - the progress of Environmental Footprinting in the EU - Lessons learned in a multi-stakeholder cooperation</b></p> <p><b>Martin Baitz</b>, <b>Lionel Thellier</b>, <b>Steffen Schöll</b>, <b>Daniel Coen</b>, <b>Thilo Kupfer</b>, <b>Constantin Herrmann</b>, <b>Stefan Horlacher</b>, <b>Andreas Busa</b>, <b>Marta Bonell</b>, <b>Diep Russ</b>, <b>Viviana Carrillo</b> thinkstep AG, Germany</p>	
<p><b>2-2A-4</b> 2:00pm - 2:20pm</p> <p><b>A proposal of multiple indexes regarding the environmental and safety aspects for an apple cultivation</b></p> <p><b>Daichi Mizutani</b>, <b>Yuna Seo</b>, <b>Kiyoshi Dowaki</b> TOKYO UNIVERSITY OF SCIENCE, Japan</p>	
<p><b>2:20pm - 2:40pm</b></p> <p><b>Summary of the Environmental Footprint sessions</b></p>	
<p><b>1:00pm - 2:40pm</b> <b>Room 101/102</b></p>	<p><b>2-2B: Green technologies &amp; Material criticality</b></p> <p>Session Chair: <b>Rod Eggert</b>, Colorado School of Mines, United States Session Chair: <b>Keisuke Nansai</b>, The University of Sydney, Australia</p>
<p><b>2-2B-1</b> 1:00pm - 1:20pm</p> <p><b>Material Criticality and Carbon Abatement, 2018-2040</b></p> <p><b>Rod Eggert</b> Colorado School of Mines, United States</p>	
<p><b>2-2B-2</b> 1:20pm - 1:40pm</p> <p><b>Material requirements of low carbon energy technologies</b></p> <p><b>René Kleijn</b> Leiden University, Netherlands</p>	
<p><b>2-2B-3</b> 1:40pm - 2:00pm</p> <p><b>Global supply risk of critical metals in regional economy in Japan</b></p> <p><b>Keisuke Nansai</b><sup>1,2</sup>, <b>Takako Wakiyama</b><sup>1</sup>, <b>Manfred Lenzen</b><sup>1</sup> <sup>1</sup>The University of Sydney, Australia; <sup>2</sup>National Institute for Environmental Studies, Japan</p>	
<p><b>2-2B-4</b> 2:00pm - 2:20pm</p> <p><b>Material criticality in supply chains: national and technology perspectives</b></p> <p><b>Benjamin Craig McLellan</b> Kyoto University, Japan</p>	



<b>2-2B-5</b> 2:20pm - 2:40pm	
<b>Global Trade of Critical Metals: A Case Study of Neodymium in China</b>	
Yan Ren <sup>1,2</sup> , Wei-Qiang Chen <sup>1,2,3</sup>	
<sup>1</sup> Key Lab of Urban Environment and Health, Institute of Urban Environment, Chinese Academy of Sciences, Xiamen 361021, P. R. China; <sup>2</sup> Xiamen Key Lab of Urban Metabolism, Xiamen 361021, P. R. China; <sup>3</sup> University of Chinese Academy of Sciences, Beijing 100049, P. R. China	
1:00pm - 2:40pm Room 103	<b>2-2C: Wastewater &amp; Life cycle thinking</b> Session Chair: Mengshan Lee, National Kaohsiung University of Science and Technology, Taiwan Session Chair: Toyohiko Nakakubo, Ochanomizu University, Japan
<b>2-2C-1</b> 1:00pm - 1:20pm	
<b>Integration of regional life cycle assessment and spatial analysis for decision making: a case study on concentrate management in Taiwan</b>	
Mengshan Lee National Kaohsiung University of Science and Technology, Taiwan	
<b>2-2C-2</b> 1:20pm - 1:40pm	
<b>Understanding the Role of Advanced Wastewater Treatment Plants in Shaping Circular Economy Compliant Sustainable Cities from a Life Cycle Perspective: A Case Study of Umea Wastewater Treatment Plant, Umea, Sweden.</b>	
Kavitha Shanmugam, Majid Mustafa, Mats Tysklind, Venkata Krishna Kumar Upadhyayula Umea University, Sweden, Sweden	
<b>2-2C-3</b> 1:40pm - 2:00pm	
<b>Life cycle assessment of low-energy-demand technology for reclaiming domestic wastewater</b>	
Huan-Yu Shiu <sup>1</sup> , Mengshan Lee <sup>2</sup> , Chia-Hung Hou <sup>1</sup> , Pei-Te Chiueh <sup>1</sup>	
<sup>1</sup> National Taiwan University, Taiwan; <sup>2</sup> National Kaohsiung First University of Science and Technology	
<b>2-2C-4</b> 2:00pm - 2:20pm	
<b>Life Cycle Analysis of Water Recovery from Coffee Manufacturing Wastewater</b>	
Mariano Javier Savelski, C. Stewart Slater, Christian M. Wisniewski Rowan University, United States	
<b>2-2C-5</b> 2:20pm - 2:40pm	
<b>Urban wastewater footprint and environmental loads</b>	
Lishan Xiao <sup>1</sup> , Shinichiro Nakamura <sup>2</sup>	
<sup>1</sup> Chinese Academy of Sciences, China; <sup>2</sup> Waseda University, Japan	
1:00pm - 2:40pm Room 107	<b>2-2D: Sustainable food consumption &amp; production</b> Session Chair: Charongpun Musikavong, Prince of Songkla University, Thailand Session Chair: Yuichi Moriguchi, The University of Tokyo, Japan, Japan
<b>2-2D-1</b> 1:00pm - 1:20pm	
<b>Food Loss Footprint Analysis of Agricultural Commodities -Application of newly developed Japanese multi-regional input-output model (MRIO)</b>	
Takako Wakiyama <sup>1</sup> , Manfred Lenzen <sup>2</sup> , Futu Faturay <sup>2</sup> , Arne Geschke <sup>2</sup> , Arunima Malik <sup>2</sup> , Jacob Fry <sup>2</sup> , Keisuke Nansai <sup>3</sup>	
<sup>1</sup> University of Sydney / IGES; <sup>2</sup> University of Sydney; <sup>3</sup> NIES / University of Sydney	
<b>2-2D-2</b> 1:20pm - 1:40pm	
<b>Evaluation of ecological footprint of rice production in Thailand</b>	
Konkanok Jaibumrung <sup>1</sup> , Shabbir Gheewala <sup>2,3</sup> , Charongpun Musikavong <sup>1</sup>	
<sup>1</sup> Environmental Assessment and Technology for Hazardous Waste Management Research Center, Department of Civil Engineering, Faculty of Engineering, Prince of Songkla University, Hatyai, Songkhla, Thailand; <sup>2</sup> The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand; <sup>3</sup> Centre of Excellence on Energy Technology and Environment, PERDO, Bangkok, Thailand	

**2-2D-3** 1:40pm - 2:00pm

**A methodological evaluation of environmental assessments: A case study of the U.S. beef industry**

**William Benjamin Putman<sup>1</sup>, Greg Thoma<sup>1</sup>, Al Rotz<sup>2</sup>**

<sup>1</sup>Ralph E. Martin Department of Chemical Engineering, University of Arkansas, Fayetteville, AR 72701, USA; <sup>2</sup>United States Department of Agriculture - Agricultural Research Service, University Park, PA, 16802, USA

**2-2D-4** 2:00pm - 2:20pm

**Sustainable food consumption: environmental, social, and public health issues**

**Natsumi Fujiwara<sup>1</sup>, Masashi Tachikawa<sup>2</sup>, Naoki Yoshikawa<sup>1</sup>, Steven R. McGreevy<sup>3</sup>, Atsushi Inaba<sup>4</sup>**

<sup>1</sup>Ritsumeikan University, Japan; <sup>2</sup>Nagoya University, Japan; <sup>3</sup>Research Institute for Humanity and Nature, Japan; <sup>4</sup>Kogakuin University, Japan

**2-2D-5** 2:20pm - 2:40pm

**Water Footprint Inventory Database of Rice Farming in Thailand**

**Rattanawan Mungkung<sup>1,2</sup>, Shabbir H. Gheewala<sup>3,4</sup>, Thapat Silalertruksa<sup>3,4</sup>, Sarocha Dangsir<sup>1</sup>**

<sup>1</sup>Centre of Excellence on environmental strategy for GREEN business (VGREEN), Thailand; <sup>2</sup>Department of Environmental Technology and Management, Faculty of Environment, Kasetsart University, Bangkok, Thailand; <sup>3</sup>The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Bangkok, Thailand; <sup>4</sup>Center of Excellence on Energy Technology and Environment, PERDO, Bangkok, Thailand

1:00pm - 2:40pm

Room 108

**2-2E: Circular economy & Behavioral science (2)**

Session Chair: **Dami Moon**, The University of Tokyo, Japan  
Session Chair: **Tomohiro Tabata**, Kobe University, Japan

**2-2E-1** 1:00pm - 1:20pm

**Consumer perceptions of home appliances: the shift from possession-oriented to function-oriented**

**Dami Moon<sup>1</sup>, Yurie Suzuki<sup>1</sup>, Eri Amasawa<sup>1</sup>, Jun Nakatani<sup>1</sup>, Kiyotaka Tahara<sup>2</sup>, Masahiko Hirao<sup>1</sup>**

<sup>1</sup>the University of Tokyo, Japan; <sup>2</sup>National Institute of Advanced Industrial Science and Technology

**2-2E-2** 1:20pm - 1:40pm

**Mapping of impacts on sustainability of bioeconomy products and services, including consumer behaviour**

**Galyna Medyna, Sirpa Kurppa**

Natural Resources Institute Finland (Luke), Finland

**2-2E-3** 1:40pm - 2:00pm

**Impact of knowledge on purchase decision making of fair trade products**

**Tomohiko Ihara, Ko Yoshida, Yoshikuni Yoshida**

The University of Tokyo, Japan

**2-2E-4** 2:00pm - 2:20pm

**Environmental potential of renting, leasing, and sharing of products**

**Eri Amasawa, Tsubasa Shibata, Dami Moon, Masahiko Hirao**

The University of Tokyo, Japan

**2-2E-5** 2:20pm - 2:40pm

**Information Provision and Economic Approach for Promotion of Plastic Shopping Bag Reduction in Thailand**

**Nattapat Piromrut<sup>1</sup>, Chanathip Pharino<sup>1</sup>, Yuichi Moriguchi<sup>2</sup>, Jun Nakatani<sup>2</sup>**

<sup>1</sup>Chulalongkorn University, Thailand; <sup>2</sup>The University of Tokyo, Japan

1:00pm - 2:40pm

**2-2F: Sustainability indices**

Session Chair: **Marzia Traverso**, RWTH Aachen University, Germany

<b>Room 109</b>	Session Chair: <b>Hideaki Kurishima</b> , Shibaura Institute of Technology, Japan
<b>2-2F-1</b> 1:00pm - 1:20pm	
<b>A global effort towards the 2019 SLCA Guidelines</b>	
<b>Sonia Valdivia<sup>1</sup>, Mathias Finkbeiner<sup>2</sup>, Catherine Benoit-Norris<sup>3</sup>, Sara Russo<sup>4</sup>, Elisabeth Ekener<sup>5</sup>, <u>Marzia Traverso<sup>6</sup></u></b>	
<sup>1</sup> Leuphana University Luneburg, Germany; <sup>2</sup> TU Berlin, Germany; <sup>3</sup> Social Hotspots Database, USA; <sup>4</sup> CIRAIG, UQÀM, École des Sciences de la gestion, Canada; <sup>5</sup> KTH Royal Institute of Technology, Sweden; <sup>6</sup> RWH Aachen University, Germany	
<b>2-2F-2</b> 1:20pm - 1:40pm	
<b>A Generational Household Level Analysis of Public Bads and Environmental Injustice in an Aging, Shrinking Population</b>	
<b><u>Andrew John Chapman<sup>1</sup></u>, Yosuke Shigetomi<sup>2</sup></b>	
<sup>1</sup> International Institute for Carbon Neutral Research, Kyushu University, Japan; <sup>2</sup> Graduate School of Fisheries and Environmental Sciences, Nagasaki University	
<b>2-2F-3</b> 1:40pm - 2:00pm	
<b>Multi-criteria analysis of Benin vegetable value chains: facilitating communication of complex results</b>	
<b><u>Angel Avadi<sup>1,3</sup></u>, Frédéric Feder<sup>2,3</sup>, Richard Hodomihou<sup>4</sup></b>	
<sup>1</sup> CIRAD, UPR Recyclage et risque, F-34398 Montpellier, France; <sup>2</sup> CIRAD, UPR Recyclage et risque, Dakar, Senegal; <sup>3</sup> Recyclage et risque, Univ Montpellier, CIRAD, Montpellier, France; <sup>4</sup> Université d'Abomey-Calavi, Benin	
<b>2-2F-4</b> 2:00pm - 2:20pm	
<b>Analysis of the Relationship between Social Deprivation and Excess Winter Mortality Based on Statistical Information in Japan</b>	
<b><u>Takuro Ishito<sup>1</sup></u>, Toshiharu Ikaga<sup>1</sup>, Shun Kawakubo<sup>2</sup></b>	
<sup>1</sup> Keio University, Japan; <sup>2</sup> Hosei University, Japan	
<b>2-2F-5</b> 2:20pm - 2:40pm	
<b>Closing the carbon cycle – Assessing the sustainability of currently discussed concepts</b>	
<b><u>Witold-Roger Pogonietz</u>, Maryegli Fuss</b>	
Karlsruhe Institute of Technology (KIT), Germany	
<b>2:40pm - 3:00pm</b>	Break
<b>3:00pm - 4:20pm</b>	<b>2-3A: Sustainability assessment methods</b>
<b>KFC Hall 2nd</b>	Session Chair: <b>Thumrongrut Mungcharoen</b> , National Science and Technology Development Agency, Thailand Session Chair: <b>Yuko Oshita</b> , Kobe University, Japan
<b>2-3A-1</b> 3:00pm - 3:20pm	
<b>Is there a Hidden Cost on Disaster-prone Land Asset? : Evidence from floodwater accidents in Japan</b>	
<b><u>Masashi Yamamoto<sup>1</sup></u>, Daisuke Ichinose<sup>2</sup></b>	
<sup>1</sup> University of Toyama, Japan; <sup>2</sup> Rikkyo University, Japan	
<b>2-3A-2</b> 3:20pm - 3:40pm	
<b>Applying the UN-SDG11 to the Analysis of City Sustainability in Taiwan's Six Municipalities</b>	
<b><u>Ching-Yun Haiso</u>, Yuh-Ming Lee</b>	
Institute of Natural Resource Management, National Taipei University	
<b>2-3A-3</b> 3:40pm - 4:00pm	
<b>Sustainable Development Goals (SDGs) Call for New Indicator of Resource Efficiency for Japan</b>	

<p><b>Qian Zhang, Yuichi Moriguchi</b> The University of Tokyo, Japan</p>	
<p><b>2-3A-4</b> 4:00pm - 4:20pm <b>Sustainability Management integrated with SDGs, based on MFCA Information</b> <b>Michiyasu Nakajima</b> Kansai University, Japan</p>	
<p><b>3:00pm - 4:20pm</b> <b>Room 101/102</b></p>	<p><b>2-3B: Green technologies &amp; Life cycle thinking</b> Session Chair: <b>Linda Ager-Wick Ellingsen</b>, Norwegian University of Science and Technology (NTNU), Norway Session Chair: <b>Minako Hara</b>, Nippon Telegraph and Telephone West Corporation, Japan</p>
<p><b>2-3B-1</b> 3:00pm - 3:20pm <b>Life cycle assessment of power plants using hydrogen energy carriers</b> <b>Yuki Kudoh</b> National Institute of Advanced Industrial Science and Technology, Japan</p>	
<p><b>2-3B-2</b> 3:20pm - 3:40pm <b>LCA of the CO<sub>2</sub>-based methanol production and potential methodological pitfalls within cross-sectoral symbioses</b> <b>Nils Thonemann, Daniel Maga</b> Fraunhofer UMSICHT, Germany</p>	
<p><b>2-3B-3</b> 3:40pm - 4:00pm <b>Life cycle assessment of advanced production process of carbon fibers using aromatic polymer</b> <b>Kaito Sakamoto, Kotaro Kawajiri, Hiroaki Hatori, Kiyotaka Tahara</b> National Institute of Advanced Industrial Science and Technology, Japan</p>	
<p><b>2-3B-4</b> 4:00pm - 4:20pm <b>Sophistication of energy recovery systems in a MSW incineration plant by linking up with a neighboring sewage treatment plant</b> <b>Toyohiko Nakakubo</b> Ochanomizu University, Japan</p>	
<p><b>3:00pm - 4:20pm</b> <b>Room 103</b></p>	<p><b>2-3C: Waste management &amp; Recycling</b> Session Chair: <b>Helmut Yabar</b>, University of Tsukuba, Japan Session Chair: <b>Ryouta Ii</b>, Pacific Consultants Co., Ltd., Japan</p>
<p><b>2-3C-1</b> 3:00pm - 3:20pm <b>Deducing the sustainability criteria of advanced PVC wastes recycling technology for CI circulation system at its early stage of development</b> <b>Jiaqi Lu<sup>1</sup>, Shogo Kumagai<sup>1</sup>, Hajime Ohno<sup>2</sup>, Tomohito Kameda<sup>1</sup>, Yuko Saito<sup>1</sup>, Toshiaki Yoshioka<sup>1</sup>, Yasuhiro Fukushima<sup>2</sup></b> <sup>1</sup>Graduate School of Environmental Studies, Tohoku University, Japan; <sup>2</sup>Graduate School of Engineering, Tohoku University, Japan</p>	
<p><b>2-3C-2</b> 3:20pm - 3:40pm <b>Novel Electric-pulse Disintegration with Flexible Electrode Positioning System for Reuse/High-Grade Recycling</b> <b>Kenichiro Fukaki<sup>1</sup>, Taiki Senga<sup>1</sup>, Tatsuya Kato<sup>1</sup>, Yuki Tsunazawa<sup>3</sup>, Giuseppe Granata<sup>2</sup>, Chiharu Tokoro<sup>2</sup>, Shuji Owada<sup>2</sup></b> <sup>1</sup>Graduate School of Creative Science and Engineering, Waseda University, Japan; <sup>2</sup>Faculty of Science and Engineering, Waseda University, Japan; <sup>3</sup>National Institute of Advanced Industrial Science and Technology, Japan</p>	
<p><b>2-3C-3</b> 3:40pm - 4:00pm <b>Withdrawn</b> <b>Life Cycle Assessment as a policy support methodology for landfilling in different geo-climatic</b></p>	

<p><b>regions in Peru</b>  <b>Kurt Ziegler<sup>2</sup>, Maria Margallo<sup>1</sup>, Ramzy Kahhat<sup>2</sup>, Ruben Aldaco<sup>1</sup>, Ian Vazquez Rowe<sup>2</sup></b>  <sup>1</sup>Departamento de Ingeniería Química y Biomolecular, Universidad de Cantabria, Spain; <sup>2</sup>Peruvian LCA Network, Department of Engineering, Pontificia Universidad Católica del Perú</p>	
<p><b>2-3C-4 4:00pm - 4:20pm</b>  <b>Evaluation Tool for Engineering Sustainable Recycling Pathways: a Case Study</b>  <b>Guilhem Grimaud<sup>1,2</sup>, Bertrand Laratte<sup>2,3</sup>, Nicolas Perry<sup>2</sup></b>  <sup>1</sup>MTB Recycling, France; <sup>2</sup>Arts &amp; Métiers ParisTech, CNRS, I2M Bordeaux, France; <sup>3</sup>APESA-Innovation, France</p>	
<p><b>3:00pm - 4:20pm</b>  <b>Room 107</b></p>	<p><b>2-3D: Food–energy–water nexus (4)</b>  Session Chair: <b>Rattanawan Mungkung</b>, Centre of Excellence on environmental strategy for GREEN business (VGREEN), Thailand  Session Chair: <b>Tatsuo Hishinuma</b>, Utsunomiya University, Japan</p>
<p><b>2-3D-1 3:00pm - 3:20pm</b>  <b>Improving the consideration of contaminants in environmental assessment of agricultural recycling of organic waste</b>  <b>Angel Avadi<sup>1,2</sup>, Tom Wassenaar<sup>1,2</sup>, Emmanuel Doelsch<sup>1,2</sup></b>  <sup>1</sup>CIRAD, UPR Recyclage et risque, F-34398 Montpellier, France; <sup>2</sup>Recyclage et risque, Univ Montpellier, CIRAD, Montpellier, France</p>	
<p><b>2-3D-2 3:20pm - 3:40pm</b>  <b>Lifecycle Assessment of Packaged Tofu</b>  <b>Akihiro Izumi<sup>1</sup>, Nobutaka Nakamura<sup>2</sup>, Kiyotada Hayashi<sup>2</sup>, Ken Ishii<sup>3</sup>, Toshio Yokoyama<sup>4</sup>, Hiroshi Kameda<sup>5</sup>, Michihiro Takeda<sup>6</sup>, Masashi Hamba<sup>1</sup>, Koichi Shobatake<sup>7</sup>, Naoki Makino<sup>7</sup>, Takeo Shiina<sup>8</sup></b>  <sup>1</sup>Plastic Waste Management Institute, Japan; <sup>2</sup>National Agriculture and Food Research Organization; <sup>3</sup>Japan Plastic Food Container Association; <sup>4</sup>The Japan Plastics Industry Federation; <sup>5</sup>Vinyl Environmental Council; <sup>6</sup>Japan Expanded Polystyrene Association; <sup>7</sup>TCO2 Co. Ltd; <sup>8</sup>Graduate School of Horticulture, Chiba University</p>	
<p><b>2-3D-3 3:40pm - 4:00pm</b>  <b>Water, Food and Energy Nexus: Experiences in Malaysia and Water Footprint Assessment of Rice Production</b>  <b>Nurfarhain Mohamed Rusli, Zainura Zainon Noor, Shazwin Mat Taib</b>  Universiti Teknologi Malaysia, Malaysia</p>	
<p><b>4:00pm - 4:20pm</b>  <b>Overall discussion</b></p>	
<p><b>3:00pm - 4:20pm</b>  <b>Room 108</b></p>	<p><b>2-3E: Circular economy &amp; Input–output analysis</b>  Session Chair: <b>Wei-Qiang Chen</b>, Chinese Academy of Sciences, China  Session Chair: <b>Keiichiro Kanemoto</b>, Shinshu University, Japan</p>
<p><b>2-3E-1 3:00pm - 3:20pm</b>  <b>Metal dynamics of a circular economy: identifying barriers to sustainable recycling</b>  <b>Shinichiro Nakamura<sup>1</sup>, Yasushi Kondo<sup>1</sup>, Kenichi Nakajima<sup>2</sup>, Hajime Ohno<sup>3</sup></b>  <sup>1</sup>Waseda University, Japan; <sup>2</sup>National Institute for Environmental Studies, Japan; <sup>3</sup>Tohoku University, Japan</p>	
<p><b>2-3E-2 3:20pm - 3:40pm</b> <b>Withdrawn</b>  <b>The effects of secondary material recycling and reuse in circular economy</b>  <b>Hsiu Ching Shih, Hwong wen Ma</b>  National Taiwan University, Taiwan</p>	
<p><b>2-3E-3 3:40pm - 4:00pm</b>  <b>Promoting Circular Economy Strategies of Regions through Waste Input-Output Analysis</b>  <b>Yasushi Kondo</b></p>	

Waseda University, Japan	
<b>2-3E-4 4:00pm - 4:20pm</b>	
<b>Material stock analysis considering accumulation pathways and recovery potential: a case study for copper in Japan</b>	
<b>Ryosuke Yokoi, Jun Nakatani, Yuichi Moriguchi</b> The University of Tokyo, Japan	
<b>3:00pm - 4:20pm</b> <b>Room 109</b>	<b>2-3F: Progress in impact assessment methodologies</b> Session Chair: <b>Trakarn Prapasongsa</b> , Mahidol University, Thailand Session Chair: <b>Masaharu Motoshita</b> , National Institute of Advanced Industrial Science and Technology, Japan
<b>2-3F-1 3:00pm - 3:20pm</b>	
<b>The characterisation of site-dependent environmental impacts in LCA under global supply chains</b>	
<b>Trakarn Prapasongsa<sup>1</sup>, Shabbir H. Gheewala<sup>2,3</sup></b> <sup>1</sup> Department of Civil and Environmental Engineering, Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand; <sup>2</sup> The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Bangkok, Thailand; <sup>3</sup> Centre of Excellence on Energy Technology and Environment, PERDO, Bangkok, Thailand	
<b>2-3F-2 3:20pm - 3:40pm</b>	
<b>The innovation of the human exposure factor estimation for LCA</b>	
<b>Alexandra Belyanovskaya<sup>1,2</sup>, Bertrand Laratte<sup>1</sup>, Natalia Baranovskaya<sup>2</sup>, Nicolas Perry<sup>1</sup></b> <sup>1</sup> École nationale supérieure d'arts et métiers, France; <sup>2</sup> Tomsk Polytechnic University, Russia	
<b>2-3F-3 3:40pm - 4:00pm</b>	
<b>Human toxicity assessment of rice cultivation in Thailand: the variability from using different life cycle impact assessment methods</b>	
<b>Pattaramart Makmoon<sup>1</sup>, Jitti Mungkalasiri<sup>2</sup>, Tanapon Phenrat<sup>3</sup>, Shabbir H. Gheewala<sup>4</sup>, Trakarn Prapasongsa<sup>1</sup></b> <sup>1</sup> Department of Civil and Environmental Engineering, Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand; <sup>2</sup> National Metal and Materials Technology Center (MTEC), National Science and Technology Development Agency (NSTDA), Pathumthani, Thailand; <sup>3</sup> Faculty of Engineering, Naresuan University, Phitsanulok 65000, Thailand; <sup>4</sup> The Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi, Bangkok, Thailand	
<b>2-3F-4 4:00pm - 4:20pm</b>	
<b>Water stress index with reference to environmental water requirement under climate change for the case of Thailand</b>	
<b>Pariyapat Nilsalab, Shabbir H. Gheewala</b> The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand	
<b>4:20pm - 4:30pm</b>	Break
<b>4:30pm - 6:30pm</b>	<b>Poster session</b>  <b>KFC Hall Annex</b>
<b>6:30pm - 7:00pm</b>	Break
<b>7:00pm - 9:00pm</b>	<b>Banquet</b>  <b>Dai-ichi Hotel Ryogoku 5F Kiyosumi</b>

<b>October 12, Friday</b>	
<b>10:20am - 11:40am</b> <b>KFC Hall 2nd</b>	<b>3-1A: Innovations &amp; Life cycle thinking</b> Session Chair: <b>Martina Prox</b> , ifu Institute for Environmental IT Hamburg, Germany Session Chair: <b>Koichi Shobatake</b> , TCO2 Co. Ltd., Japan

<b>3-1A-1</b> 10:20am - 10:40am	
<b>Understanding Sustainable Innovation with a Life Cycle Perspective</b>	
Jim Fava, Martina Prox, Guido Sonnemann, <u>Philip Strothmann</u> FSLCI e.V., Germany	
<b>3-1A-2</b> 10:40am - 11:00am	
<b>The case study of gold engineered nanoparticles synthesis: Life Cycle Assessment and cost analysis</b>	
<u>Martina Pucciarelli</u> , Fabio Grimaldi, Asterios Gavriilidis, Paola Lettieri University College London, United Kingdom	
<b>3-1A-3</b> 11:00am - 11:20am	
<b>Sustainability in the age of Digitization and Personalization</b>	
<u>Daniel Wehner</u> University of Stuttgart, Germany	
<b>3-1A-4</b> 11:20am - 11:40am	
<b>Exploring the Dissemination Mechanisms of Environmental Innovations across Developing Nations: The Role of Innovative Performance and Absorptive Capacity</b>	
<u>Helmut Yabar</u> <sup>1</sup> , Michinori Uwasu <sup>2</sup> , Keishiro Hara <sup>2</sup> <sup>1</sup> University of Tsukuba, Japan; <sup>2</sup> Osaka University, Japan	
<b>10:20am - 11:40am</b>	<b>3-1B: National hotspot analysis &amp; Global supply chains</b>
<b>Room 101/102</b>	Session Chair: <b>Sangwon Suh</b> , University of California, Santa Barbara, United States Session Chair: <b>Yasushi Furushima</b> , Mizuho Information & Research Institute, Inc., Japan
<b>3-1B-1</b> 10:20am - 10:40am	
<b>Constructing a Hybrid Energy Multi-Regional Input-output Table of China</b>	
<u>Yawen Han</u> , Shigemi Kagawa Kyushu University, Japan	
<b>3-1B-2</b> 10:40am - 11:00am	
<b>Mining and trade of metals until 2100 associated with greenhouse gas concentration scenarios</b>	
<u>Ryoko Morioka</u> <sup>1</sup> , Koji Tsuda <sup>2</sup> , Kenichi Nakajima <sup>1</sup> , Keisuke Nansai <sup>1,3</sup> <sup>1</sup> National Institute for Environmental Studies, Japan; <sup>2</sup> The University of Tokyo; <sup>3</sup> The University of Sydney	
<b>3-1B-3</b> 11:00am - 11:20am	
<b>Nutritional combined Environmental Life Cycle Assessment of National Diets</b>	
<u>Abhishek Abhishek</u> , Alexander Mathys ETH Zurich, Switzerland	
<b>3-1B-4</b> 11:20am - 11:40am	
<b>Environmental hotspots in global supply chains attributed to Japanese national activities</b>	
<u>Masaharu Motoshita</u> <sup>1</sup> , Keisuke Nansai <sup>2,3</sup> , Seiji Hashimoto <sup>4</sup> , Takahiro Sasaki <sup>4</sup> , Stephan Pfister <sup>5</sup> , Matthias Finkbeiner <sup>6</sup> <sup>1</sup> National Institute of Advanced Industrial Science and Technology; <sup>2</sup> National Institute of Environmental Studies; <sup>3</sup> Sydney University; <sup>4</sup> Ritsumeikan University; <sup>5</sup> ETH Zurich; <sup>6</sup> Technische Universitaet Berlin	
<b>10:20am - 11:40am</b>	<b>3-1C: Metal production &amp; Sustainability assessment</b>
<b>Room 103</b>	Session Chair: <b>Mario Schmidt</b> , Pforzheim University, Germany Session Chair: <b>Yasunari Matsuno</b> , Chiba University, Japan
<b>3-1C-1</b> 10:20am - 10:40am	
<b>Environmental impacts of Open-pit Copper mining in Lao PDR: A Life Cycle Assessment</b>	
<u>Xaysackda Vilaysouk</u> <sup>1,2</sup> , Kamrul Islam <sup>1</sup> , James West <sup>2</sup> , Heinz Schandl <sup>2,3</sup> , Shinsuke Murakami <sup>1</sup>	

<sup>1</sup>The University of Tokyo, Japan; <sup>2</sup>CSIRO, Australia; <sup>3</sup>Australian National University, Fenner School for Environment and Society, Australia

**3-1C-2** 10:40am - 11:00am

**Physical parameter-based allocation for the energy consumption of pyro-metallurgical system—a case study on nickel production in China**

**Boxue Sun**, Zuoren Nie, Yu Liu, Feng Gao  
Beijing University of Technology, China

**3-1C-3** 11:00am - 11:20am

**Optimization of Primary and Secondary Metal Production**

**Philipp Schaefer**, Nadine Roetzer, Mario Schmidt  
Pforzheim University, Germany

**3-1C-4** 11:20am - 11:40am

**Revisiting Total Material Requirement Estimation and Evaluation**

**Eiji Yamasue**<sup>1</sup>, Shoki Kosai<sup>1</sup>, Ichiro Daigo<sup>2</sup>, Kenichi Nakajima<sup>3</sup>, Benjamin McLellan<sup>4</sup>, Kazuyo Matsubae<sup>5</sup>, Shisuke Murakami<sup>2</sup>

<sup>1</sup>Ritsumeikan University, Japan; <sup>2</sup>The University of Tokyo; <sup>3</sup>National Institute for Environmental Studies; <sup>4</sup>Kyoto University; <sup>5</sup>Tohoku University

10:20am - 11:40am

Room 108

**3-1E: Automobile life cycles**

Session Chair: **Hyung Chul Kim**, Ford Motor Company, United States  
Session Chair: **Kazuyo Matsubae**, Tohoku University, Japan

**3-1E-1** 10:20am - 10:40am

**Application of LCA in evaluation of dependencies on natural capital: a case study of electric vehicle**

**Yoriko Saeki**, Katsuyuki Nakano  
Japan Environmental Management Association for Industry, Japan

**3-1E-2** 10:40am - 11:00am

**Global Environmental Impacts of Product Lifetime Change of Automobiles**

**Daisuke Nishijima**<sup>1</sup>, Yuya Nakamoto<sup>2</sup>, Shigemi Kagawa<sup>2</sup>, Masahiro Oguchi<sup>1</sup>, Keisuke Nansai<sup>1</sup>  
<sup>1</sup>National Institute for Environmental Studies (NIES), Japan; <sup>2</sup>Kyushu University, Japan

**3-1E-3** 11:00am - 11:20am

**Potential of Dissipated Alloy Elements in Special Steel and Economic Benefits from Automobile Recycling Processes**

**Zhengyang Zhang**<sup>1</sup>, Kentaro Takeyama<sup>1</sup>, Hajime Ohno<sup>1</sup>, Kazuyo Matsubae<sup>1</sup>, Kenichi Nakajima<sup>2</sup>, Tetsuya Nagasaka<sup>1</sup>

<sup>1</sup>Tohoku University, Japan; <sup>2</sup>National Institute for Environmental Studies, Japan

**3-1E-4** 11:20am - 11:40am

**RAUPE - Recycling of Automotive Units and Parts Evaluator**

**Alexandra Pehlken**, Bjoern Koch, Matthias Kalverkamp  
Carl von Ossietzky University Oldenburg, Germany

11:40am - 1:00pm

Lunch

1:00pm - 3:20pm

KFC Hall 2nd

**3-2A: Innovative policy design & Sustainability analysis: A dual relation**

Session Chair: **Gjalt Huppes**, CML Leiden University, Netherlands  
Session Chair: **René Kleijn**, Leiden University, Netherlands

1:00pm - 1:10pm

**Introduction to innovative policy design & sustainability analysis**



<b>3-2A-1</b> 1:10pm - 1:30pm	
<b>Climate Policy required to make available the metals needed for the energy transition</b>	
<b>René Kleijn</b> Leiden University, Netherlands	
<b>3-2A-2</b> 1:30pm - 1:50pm	
<b>Grid response to electricity demand increase: a causal inference analysis for consequential LCA</b>	
<b>Joseph William Palazzo, Stefano Cucurachi, Sangwon Suh</b> University of California, Santa Barbara, United States	
<b>3-2A-3</b> 1:50pm - 2:10pm	
<b>Policy innovation and corporate social responsibility in mineral supply-chains</b>	
<b>Steven B. Young</b> University of Waterloo, Canada	
<b>3-2A-4</b> 2:10pm - 2:30pm	
<b>In-Use Product Stocks Indicate the Impacts of Technology Diffusion and Innovation</b>	
<b>Wei-Qiang Chen, Min Dai</b> Chinese Academy of Sciences, China	
<b>3-2A-5</b> 2:30pm - 2:50pm	
<b>Industrial Ecology and Policy, a Dual Relation</b>	
<b>Gjalt Huppes</b> CML Leiden University, Netherlands	
<b>2:50pm - 3:20pm</b>	
<b>Overall discussion</b>	
<b>1:00pm - 2:20pm</b>	<b>3-2B: Sustainable society by integration of adaptation &amp; mitigation (1)</b>
<b>Room 101/102</b>	Session Chair: <b>Lisa Ann Peterson</b> , Drexel University, United States Session Chair: <b>Kazuki Yamaguchi</b> , Tokyo Electric Power Company Holdings, Inc., Japan
<b>3-2B-1</b> 1:00pm - 1:20pm	
<b>Reduction potential of CO2 emission by integrating waste bank system into municipal solid waste management in Indonesia: a case study in Medan City</b>	
<b>Hafizhul Khair<sup>1,2</sup>, Indriyani Rachman<sup>1</sup>, Toru Matsumoto<sup>1</sup></b> <sup>1</sup> Graduate School of Environmental Engineering, The University of Kitakyushu; <sup>2</sup> Faculty of Engineering, Universitas Sumatera Utara	
<b>3-2B-2</b> 1:20pm - 1:40pm	
<b>Measurement of demand function for HEMS: comparison between Japan and the United States</b>	
<b>Ayu Washizu<sup>1</sup>, Satoshi Nakano<sup>2</sup>, Chien-fei Chen<sup>3</sup>, Hideo Ishii<sup>1</sup>, Yasuhiro Hayashi<sup>1</sup></b> <sup>1</sup> Waseda University, Japan; <sup>2</sup> The Japan Institute for Labour Policy and Training; <sup>3</sup> The University of Tennessee, Knoxville	
<b>3-2B-3</b> 1:40pm - 2:00pm	
<b>Assessing impact on climate change using dynamic LCA method on French buildings</b>	
<b>Koji Negishi<sup>1,2</sup>, Ligia Barna<sup>2</sup>, Yoann Pigné<sup>3</sup>, Nicoleta Schiopu<sup>1</sup>, Alexandra Lebert<sup>1</sup>, Thomas Gibon<sup>4</sup>, Emil Popovici<sup>4</sup>, Enrico Benetto<sup>4</sup></b> <sup>1</sup> Centre Scientifique et Technique du Bâtiment, Grenoble, France; <sup>2</sup> LISBP, Université de Toulouse, CNRS, INRA, INSA, Toulouse, France; <sup>3</sup> LITIS, Normandy University, Le Havre, France; <sup>4</sup> Luxembourg Institute of Science and Technology, Department of Environmental Research & Innovation, Belvaux, Luxembourg	
<b>3-2B-4</b> 2:00pm - 2:20pm	
<b>Down scaling of Climate Change scenario to river catchment level: a transdisciplinary methodology and application in ecosystem services and land-use change at European catchments</b>	

**Philippe Ange Ker Rault<sup>1</sup>, Phoebe Koundouri<sup>2</sup>, Ralf Ludwig<sup>3</sup>, Vicenc Acuna<sup>4</sup>, Ebun Akinsete<sup>2</sup>, Verena Huber-Garcia<sup>3</sup>, Stella Tsani<sup>2</sup>**

<sup>1</sup>Wageningen Environmental Research, Netherlands,; <sup>2</sup>Athens University of Economic and Business, Athens, Greece;  
<sup>3</sup>Ludwig-Maximilians-Universitaet Muenchen, Luisenstr. 37, 80333 Munich, Germany; <sup>4</sup>Catalan Institute for Water Research, Carrer Emili Grahit 101, 17003 Girona, Spain

**1:00pm - 2:20pm**

**Room 103**

**3-2C: Organic waste & Life cycle thinking**

Session Chair: **Francisco Contreras**, University of Brasilia, Brazil  
Session Chair: **Makoto Notomi**, Waseda University, Japan

**3-2C-1 1:00pm - 1:20pm**

**Analysis of the environmental impact of industrial food waste management by Life-Cycle Assessment: A case study**

**Guillermo Garcia-Garcia, Shahin Rahimifard**

Loughborough University, United Kingdom

**3-2C-2 1:20pm - 1:40pm**

**Life cycle environmental Impact Assessment of biomass materials in Japan: A 1990 – 2010 perspective**

**Sebastien Michael Rene Dente<sup>1</sup>, Chika Aoki-suzuki<sup>2</sup>, Chihiro Kayo<sup>3</sup>, Daisuke Tanaka<sup>5</sup>, Shinsuke Murakami<sup>4</sup>, Seiji Hashimoto<sup>1</sup>**

<sup>1</sup>Ritsumeikan University, Japan; <sup>2</sup>Institute of Global Environmental Strategies; <sup>3</sup>Tokyo University of Agriculture and Technology; <sup>4</sup>Tokyo university; <sup>5</sup>Daiwa institute of research

**3-2C-3 1:40pm - 2:00pm**

**Environmental Evaluation of Two Biogas Technologies Applying Life Cycle Assessment – A Brazilian Case Study**

**Evelin Ribeiro Rodrigues<sup>1</sup>, Ana Paula Bortoleto<sup>1</sup>, Francisco Javier Contreras<sup>2</sup>**

<sup>1</sup>University of Campinas, Brazil; <sup>2</sup>University of Brasilia, Brazil

**3-2C-4 2:00pm - 2:20pm**

**Comparison of Environmental Consequences of Different Methane Feedstock in Bacterial Protein Meal Production**

**Wanigasuriyage Lakshmarine Christine Dasanayake**

University of Southern Denmark, Denmark

**1:00pm - 2:20pm**

**Room 107**

**3-2D: Electrical/electronic equipment & Resources**

Session Chair: **Bertrand Laratte**, École Nationale Supérieure d'Arts et Métiers, France  
Session Chair: **Osamu Namikawa**, Hitachi, Ltd., Japan

**3-2D-1 1:00pm - 1:20pm**

**Environmental impacts of material use: Feasibility study for zero emission target in ICT sector**

**Tomoko Konishi-Nagano<sup>1</sup>, Katsuji Ebisu<sup>1</sup>, Yoshiko Shinomura<sup>2</sup>, Takuya Nagamiya<sup>2</sup>**

<sup>1</sup>Fujitsu Laboratories Ltd., Japan; <sup>2</sup>Fujitsu Limited, Japan

**3-2D-2 1:20pm - 1:40pm**

**A combined index of safety and energy efficiency on the mixed refrigerant of C3H8 and C4H10 (GF-08).**

**Ryu Yamamoto, Seo Yuna, Kiyoshi Dowaki**

Tokyo University of Science, Japan

**3-2D-3 1:40pm - 2:00pm**

**Life cycle assessment of emerging material for organic light emitting diode: 100 % luminous efficacy with Indium-free molecules**

**Eri Amasawa<sup>1</sup>, Kotaro Kawajiri<sup>2</sup>**

<sup>1</sup>The University of Tokyo, Japan; <sup>2</sup>National Institute of Advanced Industrial Science and Technology

<b>3-2D-4</b> 2:00pm - 2:20pm	
<b>Organic photovoltaic solar charger – environment-friendly product or just another gadget for a European consumer?</b>	
Edis Glogic <sup>1,2</sup> , Steffi Weyand <sup>3</sup> , Michael Tsang <sup>2</sup> , Steven B. Young <sup>1</sup> , <u>Guido Sonnemann</u> <sup>2</sup> , Liselotte Schebek <sup>3</sup> <sup>1</sup> University of Waterloo, France; <sup>2</sup> University of Bordeaux, France; <sup>3</sup> University of Darmstadt, Germany	
1:00pm - 2:20pm <b>Room 108</b>	<b>3-2E: Advanced vehicles &amp; Sustainability assessment</b> Session Chair: <b>Komal Habib</b> , University of Waterloo, Canada Session Chair: <b>Eiji Yamasue</b> , Ritsumeikan University, Japan
<b>3-2E-1</b> 1:00pm - 1:20pm	
<b>Life Cycle Energy Benefits of Autonomous Vehicles (AVs) Estimated from a Physics-based Model</b>	
<u>Hyung Chul Kim</u> , Timothy J. Wallington Ford Motor Company, United States	
<b>3-2E-2</b> 1:20pm - 1:40pm	
<b>Lifecycle climate change tradeoffs with range in battery electric vehicle and fuel cell electric vehicles</b>	
<u>Christine Roxanne Hung</u> , Linda Ager-Wick Ellingsen, Anders Hammer Strømman Norwegian University of Science and Technology (NTNU), Norway	
<b>3-2E-3</b> 1:40pm - 2:00pm	
<b>Greenhouse gas emissions of battery electric and conventional passenger vehicles</b>	
<u>Linda Ager-Wick Ellingsen</u> , Christine Roxanne Hung, Anders Hammer Strømman Norwegian University of Science and Technology (NTNU), Norway	
<b>3-2E-4</b> 2:00pm - 2:20pm	
<b>Analysis of Total Material Requirement for advanced automotive technology</b>	
Kenyu Matsui <sup>1</sup> , <u>Kazuyo Matsubae</u> <sup>1</sup> , Shoki Kosai <sup>2</sup> , Eiji Yamasue <sup>2</sup> , Tetsuya Nagasaka <sup>1</sup> <sup>1</sup> Tohoku University, Japan; <sup>2</sup> Ritsumeikan University, Japan	
2:20pm - 2:40pm	Break
2:40pm - 4:00pm <b>Room 101/102</b>	<b>3-3B: Sustainable society by integration of adaptation &amp; mitigation (2)</b> Session Chair: <b>Philippe Ange Ker Rault</b> , Deltares, Netherlands Session Chair: <b>Tomohiko Ihara</b> , The University of Tokyo, Japan
<b>3-3B-1</b> 2:40pm - 3:00pm	
<b>Integrated Assessment of the health damage reduction effect and the environmental impact of air conditioner usage</b>	
<u>Tadahiro Kuwayama</u> <sup>1</sup> , Shun Omune <sup>2</sup> , Norihiro Itsubo <sup>2</sup> , Kazuki Yamaguchi <sup>3</sup> , Kazuki Okada <sup>4</sup> , Yukihiro Kikegawa <sup>4</sup> , Manabu Kanda <sup>5</sup> , Alvin Christopher Galangc Varquez <sup>5</sup> , Nisrina Setyo Darmanto <sup>5</sup> , Prihadi Setyo Darmanto <sup>6</sup> , Tomohiko Ihara <sup>1</sup> <sup>1</sup> The University of Tokyo, Japan; <sup>2</sup> Tokyo City University; <sup>3</sup> Tokyo Electric Power Company; <sup>4</sup> Meisei University; <sup>5</sup> Tokyo Institute of Technology; <sup>6</sup> Institut Teknologi Bandung	
<b>3-3B-2</b> 3:00pm - 3:20pm	
<b>Evaluation for Heat Island Mitigating Potential of Improving Energy Efficiency in Jakarta</b>	
<u>Kazuki Yamaguchi</u> <sup>1</sup> , Tadahiro Kuwayama <sup>2</sup> , Tomohiko Ihara <sup>2</sup> , Yukihiro Kikegawa <sup>3</sup> , Kazuki Okada <sup>3</sup> , Kanda Manabu <sup>4</sup> , Alvin Christopher Galangc Varquez <sup>4</sup> , Nisrina Setyo Darmanto <sup>4</sup> , Prihadi Setyo Darmanto <sup>5</sup> <sup>1</sup> Tokyo Electric Power Company Holdings, Inc., Japan; <sup>2</sup> Graduate School of Frontier Sciences, the University of Tokyo, Japan; <sup>3</sup> School of Science and Engineering, Meisei University, Japan; <sup>4</sup> School of Environment and Society, Tokyo Institute of Technology, Japan; <sup>5</sup> Faculty of Mechanical and Aerospace Engineering, Institut Teknologi Bandung, Indonesia	
<b>3-3B-3</b> 3:20pm - 3:40pm	

<p><b>Applying LCA to Social Ecological Systems Framework for Stormwater Management</b>  <u>Lisa Ann Peterson</u>, Sabrina Spatari, Patricia M. Awerbuch  Drexel University, United States</p>	
<p>3:40pm - 4:00pm  <b>Summary of the adaptation &amp; mitigation sessions</b></p>	
<p>2:40pm - 4:00pm  <b>Room 103</b></p>	<p><b>3-3C: Emerging issues for plastics</b>  Session Chair: <b>Guilhem Grimaud</b>, MTB Recycling, France  Session Chair: <b>Masahiko Hirao</b>, The University of Tokyo, Japan</p>
<p><b>3-3C-1</b> 2:40pm - 3:00pm  <b>Addressing Marine Litter within Life Cycle Assessment</b>  <u>Guido Sonnemann</u><sup>1</sup>, <u>Philip Strothmann</u><sup>1</sup>, <u>Sonia Valdivia</u><sup>2</sup>  <sup>1</sup>FSLCI e.V., Germany; <sup>2</sup>World Resources Forum, Switzerland</p>	
<p><b>3-3C-2</b> 3:00pm - 3:20pm  <b>Life cycle assessment of bio-based adipic acid from seaweed</b>  <u>Dong-hyeon Kim</u><sup>1</sup>, <u>Hyoung-seok Kim</u><sup>2</sup>, <u>Tak Hur</u><sup>1</sup>  <sup>1</sup>Konkuk University, South Korea; <sup>2</sup>Ecoplus enc Corp., South Korea</p>	
<p><b>3-3C-3</b> 3:20pm - 3:40pm  <b>Material flow modeling of plastics for tracking containers and packaging flows and accumulation in intermediate sectors</b>  <u>Tamon Maruyama</u>, Jun Nakatani, Yuichi Moriguchi  University of Tokyo, Japan</p>	
<p>3:40pm - 4:00pm  <b>Overall discussion</b></p>	
<p>2:40pm - 4:00pm  <b>Room 107</b></p>	<p><b>3-3D: Innovation of power supply for sustainability</b>  Session Chair: <b>Benjamin Craig McLellan</b>, Kyoto University, Japan  Session Chair: <b>Katsuyuki Nakano</b>, Ritsumeikan University, Japan</p>
<p><b>3-3D-1</b> 2:40pm - 3:00pm  <b>Considering upscaling of LCA studies on emerging photovoltaics: The case of perovskite solar cells</b>  <u>Steffi Weyand</u><sup>1</sup>, <u>Kotaro Kawajiri</u><sup>2</sup>, <u>Liselotte Schebek</u><sup>1</sup>  <sup>1</sup>Technische Universität Darmstadt, Germany; <sup>2</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan</p>	
<p><b>3-3D-2</b> 3:00pm - 3:20pm  <b>Associating regionalised Life Cycle Assessment (LCA) and economic values of ecosystem goods and services: Impacts of upstream land transformations on ecosystem quality</b>  <u>Atta Ajayebi</u>  University of Exeter, United Kingdom</p>	
<p><b>3-3D-3</b> 3:20pm - 3:40pm  <b>Effects of Demand-Side Management in a Renewable Energy based Grid System</b>  <u>Heng Yi Teah</u>  Waseda University, Japan</p>	
<p><b>3-3D-4</b> 3:40pm - 4:00pm  <b>Consumers' Attitude to Eco-Innovation: Investigating the Behavior of Consumers towards Adoption of Solar PV-Systems in Saudi Arabia</b></p>	

<p><b>Khalid Abdulrahman Alrashoud</b> Tokyo Institute of Technology, Japan</p>	
<p><b>2:40pm - 4:00pm</b> <b>Room 108</b></p>	<p><b>3-3E: Energy systems &amp; Scenario analysis</b> Session Chair: <b>Harald Ernst Otto</b>, Polytechnic University of Marche, Italy Session Chair: <b>Yasunori Kikuchi</b>, the University of Tokyo, Japan</p>
<p><b>3-3E-1 2:40pm - 3:00pm</b> <b>Scenarios for resource use: future global demand of critical materials based on the TIMER/IMAGE Integrated Assessment model</b> <b>Ester van der Voet<sup>1</sup>, Sebastiaan Deetman<sup>1</sup>, Sylvia Marinova<sup>1</sup>, Detlef van Vuuren<sup>2</sup></b> <sup>1</sup>Leiden University, CML; <sup>2</sup>PBL Netherlands Environmental Assessment Agency</p>	
<p><b>3-3E-2 3:00pm - 3:20pm</b> <b>Maturity model of holistic assessment and improvement for smart communities- ISO 37153 and its application</b> <b>Isamu Yamada, Wei Wen, Michinori Kutami, Taro Fujimoto, Yicheng Zhou, Tomiyasu Ichimura</b> Fujitsu Ltd, Japan</p>	
<p><b>3-3E-3 3:20pm - 3:40pm</b> <b>Combining environmental lifecycle assessment and energy system models: first insights for the European future decarbonized energy system</b> <b>Lei Xu<sup>1</sup>, Marveqli Fuss<sup>1</sup>, Witold-Roger Poganietz<sup>1</sup>, Nils Brown<sup>2</sup>, Elisabeth Ekener<sup>2</sup></b> <sup>1</sup>Karlsruhe Institute of Technology, Germany; <sup>2</sup>KTH Royal Institute of Technology, Stockholm, Sweden</p>	
<p><b>3-3E-4 3:40pm - 4:00pm</b> <b>Knowledge Fit within the Asian Bid for Energy Efficiency: Technological and Economic Perspectives</b> <b>Harald Ernst Otto</b> Polytechnic University of Marche, Italy</p>	
<p><b>4:00pm - 4:30pm</b></p>	<p>Break</p>
<p><b>4:30pm - 6:00pm</b></p>	<p><b>Closing &amp; Networking drinks</b>  <b>KFC Hall 2nd</b></p>

## Presentation list: Poster session

October 11, Thursday	
4:30pm - 6:30pm KFC Hall Annex	Poster session 4:30pm - Core time 1: odd-numbered presentations 5:30pm - Core time 2: even-numbered presentations
<b>P-1</b>	Core time 1 <b>Small things can “pack a punch”: geopolitical supply risk and environmental life cycle assessment of dental X-ray equipment</b> Alexander Cimprich <sup>1</sup> , Steven B. Young <sup>1</sup> , Christoph Helbig <sup>2</sup> , Eskinder D. Gemechu <sup>3</sup> , Andrea Thorenz <sup>2</sup> , Axel Tuma <sup>2</sup> , Karim S. Karim <sup>1</sup> , Guido Sonnemann <sup>4</sup> <sup>1</sup> University of Waterloo, Canada; <sup>2</sup> Universität Augsburg; <sup>3</sup> University of Alberta; <sup>4</sup> Universite de Bordeaux
<b>P-2</b>	Core time 2 <b>Development of Evaluation Method for Social Aspect of ICT</b> Asuka Takeda <sup>1</sup> , Osamu Namikawa <sup>2</sup> , Atsushi Inaba <sup>1</sup> <sup>1</sup> Kogakuin University, Japan; <sup>2</sup> Hitachi, Ltd.
<b>P-3</b>	Core time 1 <b>Harmonizing LCIA of mineral resource use – guidance from the UN Environment Life Cycle Initiative task force</b> Markus Berger <sup>1</sup> , Thomas Sonderegger <sup>2</sup> , Rodrigo Alvarenga <sup>3</sup> , Vanessa Bach <sup>1</sup> , Alex Cimprich <sup>4</sup> , Rolf Frischknecht <sup>5</sup> , Jeroen Guinee <sup>6</sup> , Christoph Helbig <sup>7</sup> , Tom Huppertz <sup>8</sup> , Olivier Jolliet <sup>9</sup> , Masaharu Motoshita <sup>10</sup> , Stephen Northey <sup>11</sup> , Benedetto Rugani <sup>12</sup> , Dieuwertje Schrijvers <sup>13</sup> , Rita Schulze <sup>6</sup> , Alicia Valero <sup>14</sup> <sup>1</sup> TU Berlin; <sup>2</sup> ETH Zurich; <sup>3</sup> Ghent University; <sup>4</sup> University of Waterloo; <sup>5</sup> treeze Ltd.; <sup>6</sup> Leiden University; <sup>7</sup> University of Augsburg; <sup>8</sup> RDC Environment; <sup>9</sup> University of Michigan; <sup>10</sup> AIST; <sup>11</sup> Monash University; <sup>12</sup> LIST; <sup>13</sup> University of Bordeaux; <sup>14</sup> Fundación CIRCE
<b>P-4</b>	Core time 2 <b>Comparison analysis of service-oriented business models based on user’s choice considering utility value, life cycle environmental impacts, and costs</b> Yoon-Young Chun, Kiyotaka Tahara AIST, Japan
<b>P-5</b>	Core time 1 <b>The poisoning effect of K+ ions doped on MnOX/TiO2 catalysts for low-temperature selective catalytic reduction</b> Xiaoyu Ma Beijing University of Technology, China
<b>P-6</b>	Core time 2 <b>Heusler Alloys Replacement for Iridium</b> Atsufumi Hirohata <sup>1</sup> , Teodor Huminiuc <sup>1</sup> , Haokaifeng Wu <sup>1</sup> , John Sinclair <sup>1</sup> , Marjan Samiepour <sup>1</sup> , Jun-Young Kim <sup>1</sup> , Gonzalo Vallejo-Fernandez <sup>1</sup> , Kevin O’Grady <sup>1</sup> , Kenta Yoshida <sup>2</sup> <sup>1</sup> University of York, United Kingdom; <sup>2</sup> Tohoku University, Japan
<b>P-7</b>	Core time 1 <b>Life Cycle Assessment of Solar Thermal Adsorption Refrigerator</b> Jun-Ki Choi University of Dayton, United States
<b>P-8</b>	Core time 2 <b>Analyzing international supply chain risk in copper mining: focus on water resources</b> Aoi Oashi <sup>1</sup> , Yuki Yamazaki <sup>1</sup> , Kazuyo Matsubae <sup>1</sup> , Kenichi Nakajima <sup>2</sup> , Tetsuya Nagasaka <sup>1</sup> <sup>1</sup> Tohoku University, Japan; <sup>2</sup> National Institute for Environmental Studies
<b>P-9</b>	Core time 1

<p><b>Estimation of inflow and outflow of domestic accumulation using dynamic MFA model</b>  <u>Kentaro Takeyama</u><sup>1</sup>, Hajime Ohno<sup>1</sup>, Kazuyo Matsubae<sup>1</sup>, Kenichi Nakajima<sup>2</sup>, Yasushi Kondo<sup>3</sup>, Tetsuya Nagasaka<sup>1</sup>  <sup>1</sup>Tohoku University, Japan; <sup>2</sup>National Institute for Environmental Studies, Japan; <sup>3</sup>Waseda University, Japan</p>
<p><b>P-10</b> Core time 2  <b>Creating database of waste electrical and electronic equipment recycling technologies for designing better recycling systems</b>  <u>Mei Nagase</u>, Shinsuke Murakami  The university of Tokyo, Japan</p>
<p><b>P-11</b> Core time 1  <b>Critical resources for electricity based transportation</b>  <u>Komal Habib</u><sup>1</sup>, Snjólaug Tinna Hansdóttir<sup>2</sup>  <sup>1</sup>University of Waterloo, Canada; <sup>2</sup>University of Southern Denmark</p>
<p><b>P-12</b> Core time 2  <b>Green ICT solution of NTT West</b>  <u>Minako Hara</u>  Nippon Telegraph and Telephone West Corporation, Japan</p>
<p><b>P-13</b> Core time 1  <b>Influence of synthesis temperature on MnOx/TiO2 SCR DENOx catalyst prepared with acidolysis residue</b>  <u>Suping Cui</u>, Yeqiang Wan  Beijing University of Technology, China</p>
<p><b>P-14</b> Core time 2  <b>Influence of characteristics of calcium carbide slag on the clinker formation and equipments in the cement production</b>  <u>Yali Wang</u>, Suping Cui  College of Materials Science and Engineering, Beijing University of Technology</p>
<p><b>P-15</b> Core time 1  <b>Optimization of plastic containers and packaging recycling in terms of facility location</b>  <u>Tomofumi Yasuda</u>, Jun Nakatani, Kiyo Kurisu, Yuichi Moriguchi  The University of Tokyo, Japan</p>
<p><b>P-16</b> Core time 2  <b>Effect of Fluosilicate Sodium from Industrial Pollutants on Cement</b>  <u>Qianjin Mao</u>, Hai Wang, Ziming Wang, Suping Cui  Beijing University of Technology, China</p>
<p><b>P-17</b> Core time 1  <b>How tramp elements in carbon steel are increased by repeated recycling.</b>  <u>Shota Koketsu</u><sup>1</sup>, Ichiro Daigo<sup>1</sup>, Hideo Hayashi<sup>2</sup>, Manabu Enoki<sup>1</sup>  <sup>1</sup>The University of Tokyo, Japan; <sup>2</sup>Tokyo Metropolitan Industrial Technology Research Institute</p>
<p><b>P-18</b> Core time 2  <b>Estimation of left vacant detached house generation in Japan based on life cycle modeling of households</b>  <u>Yusuke Umeda</u>, Jun Nakatani, Kiyo Kurisu, Yuichi Moriguchi  The University of Tokyo, Japan</p>
<p><b>P-19</b> Core time 1  <b>External and Internal Influential Factors on Waste Disposal Behavior in Public Open Space in Phnom Penh, Cambodia</b>  <u>Pagnarith Srun</u>, Kiyo Kurisu</p>

the University of Tokyo, Japan

**P-20** Core time 2

### Investigation of obsolete and hibernated personal computers in Japan

Jun Miura, Jun Nakatani, Kiyo Kurisu, Yuichi Moriguchi

Graduate School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan

**P-21** Core time 1

### Life Cycle Assessment of Food Consumption in Asia towards Sustainable Consumption and Production

Biraj Adhikari<sup>1,2</sup>, Trakarn Prapaspongsa<sup>1</sup>

<sup>1</sup>Department of Civil and Environmental Engineering, Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand; <sup>2</sup>The Erasmus Mundus Joint European Master in Environmental Studies - Cities & Sustainability (JEMES CiSu), Aalborg University, Technische Universität Hamburg, Universitat Autònoma de Barcelona, and Universidade de Aveiro

**P-22** Core time 2

### The effect of on-site practice on generic skill improvement in PBL - Case-study in Shibaura Institute of Technology -

Takahiro Nakaguchi

Shibaura Institute of Technology, Japan

**P-23** Core time 1

### A study on differences in the intellectual activity of nurses by ward plan type in large hospitals

Yusuke Neo<sup>1</sup>, Mine Sudo<sup>1</sup>, Kahori Kamegai<sup>1</sup>, Junichi Yokoyama<sup>1</sup>, Sari Hoshina<sup>2</sup>

<sup>1</sup>Nagoya Institute of Technology, Japan; <sup>2</sup>Tokyo Women's Medical University, Japan

**P-24** Core time 2

### Knowledge Fit within the Asian Bid for Energy Efficiency: Social and Cultural Perspectives

Harald Ernst Otto

Polytechnic University of Marche, Italy

**P-25** Core time 1

**Withdrawn**

### Driving the circular economy through ecodesign: a successful application in the toy industry

Maria Margallo<sup>1</sup>, Alba Bala<sup>2</sup>, Cristina Gazulla<sup>2</sup>, Pedro Cerdán<sup>2</sup>, Pere Fullana<sup>2</sup>, Ruben Aldaco<sup>1</sup>

<sup>1</sup>Departamento de Ingeniería Química y Biomolecular, Universidad de Cantabria, Spain; <sup>2</sup>Catedra UNESCO de Ciclo de Vida y Cambio Climático, Universidad Pompeu Fabra, Spain

**P-26** Core time 2

### Needs-based workshops in Vietnam and Japan for Sustainable Consumption and Production

Yoshinori Sumimura<sup>1</sup>, Shota Arai<sup>1</sup>, Hung Do Phan<sup>2</sup>, Hideki Kobayashi<sup>1</sup>, Hidenori Murata<sup>1</sup>, Shinichi Fukushima<sup>1</sup>

<sup>1</sup>Osaka University, Japan; <sup>2</sup>Institute of Environmental Technology / Vietnam Academy of Science and Technology, Vietnam

**P-27** Core time 1

### Cradle-to-Gate LCA of Plastic Underground Stormwater Infiltration Basins

Lisa Ann Peterson, Sabrina Spatari

Drexel University, United States

**P-28** Core time 2

### Value of Materials within the Sustainable Development Goals

Hiroki Hatayama<sup>1</sup>, Kiyotaka Tahara<sup>1</sup>, Ichiro Daigo<sup>2</sup>, Shigesada Takagi<sup>3</sup>, Shotaro Nakanishi<sup>3</sup>

<sup>1</sup>National Institute of Advanced Industrial Science and Technology, Japan; <sup>2</sup>The University of Tokyo; <sup>3</sup>Mizuho Information & Research Institute, Inc.

**P-29** Core time 1

### How is the Acceptability Related to Knowledge or Experience in the Case of Hydrogen Fueling Stations?

Shunichi Hienuki<sup>1</sup>, Yoshie Hirayama<sup>2</sup>



<sup>1</sup>Yokohama National University; <sup>2</sup>YLCA.Lab (Yokohama LCA Environmental Education Laboratory)

**P-30** Core time 2

**Policy design based on consumer behavior analysis and life cycle assessment: case of washer sharing**

Yurie Suzuki, Eri Amasawa, Dami Moon, Jun Nakatani, Hirokazu Sugiyama, Masahiko Hirao  
The University of Tokyo, Japan

**P-31** Core time 1

**Empirical Study of the Application of Photovoltaic Power Generation in paddy rice of Japan**

Ruth Anne Tanlioco Gonocruz  
University of Tokyo, Japan

**P-32** Core time 2

**The Influence of Environmental Education Based on Life-cycle Thinking on Pro-Environmental Awareness and Behavior of Young Adult Segment**

Hatsuna TADAKA<sup>1</sup>, Tateki MIZUNO<sup>2</sup>, Yasuo MATSUMOTO<sup>3</sup>, Shinya MATSUMOTO<sup>1</sup>

<sup>1</sup>Yokohama National University, Japan; <sup>2</sup>Yokohama LCA Laboratory, Japan; <sup>3</sup>Kanagawa University, Japan

**P-33** Core time 1

**Greenhouse gas emissions from decommissioning nuclear power plants**

Shu-Mei Chien, Yuh-Ming Lee  
National Taipei University, Taiwan

**P-34** Core time 2

**Product lifespan and purchase decision: A literature review**

Haruhisa Yamamoto, Shinsuke Murakami  
The University of Tokyo, Japan

**P-35** Core time 1

**A new triff price for small- and mid- scale biomass power in Japan - the Cost of Electricity model with learning effect and variable capacity**

Hiroto Takaki, Koji Tokimatsu  
Tokyo Institute of Technology, Japan

**P-36** Core time 2

**Exergy evaluation and Life Cycle Inventory analysis of Ground Source Heat Pump in Bangkok, Thailand**

Yutaro Shimada<sup>1</sup>, Hideaki Kurishima<sup>1</sup>, Youhei Uchida<sup>2</sup>

<sup>1</sup>Shibaura Institute of Technology, Japan; <sup>2</sup>Geological Survey of Japan, AIST, Japan

**P-37** Core time 1

**Introduction of renewable energy as emergency power in preparation for disaster: Verification and evaluation of the nation-wide project in Japan**

Naoki Shibahara<sup>1</sup>, Eiko Nanbu<sup>2</sup>, Motoaki Yasui<sup>2</sup>, Takehisa Kabeya<sup>2</sup>, Kazuhiko Ogimoto<sup>3</sup>, Jun Nakatani<sup>3</sup>, Eiji Ohno<sup>4</sup>, Eiko Saito<sup>5</sup>, Junichi Fujino<sup>6</sup>

<sup>1</sup>Chubu University, Japan; <sup>2</sup>Japan Environmental Management Association for Industry, Japan; <sup>3</sup>The University of Tokyo, Japan; <sup>4</sup>Meijo University, Japan; <sup>5</sup>Mitsubishi UFJ Research and Consulting Co., Ltd., Japan; <sup>6</sup>Institute for Global Environmental Strategies, Japan / National Institute for Environmental Studies, Japan

**P-38** Core time 2

**Sustainability Assessment of a Green Campus Initiative: based on Solar PV System Introduction**

Qinyu Yang, Heng Yi Teah, Ruth Anne Gonocruz, Pawara Muhammad Uswah, Nikolaos Iliopoulos, Motoharu Onuki  
The University of Tokyo, Japan

**P-39** Core time 1

**Economically and Environmentally Feasible Treatment for Giant Squid (*Dosidicus gigas*) Waste in**

**Chile: Energy and Material Recovery Potential**

Ailyn Edith Rojas Cabrera, Helmut Yabar, Takashi Mizunoya  
University of Tsukuba, Japan

**P-40** Core time 2

**Simulating the zero emission tomato greenhouse in Japan**

Ai Leon, Hooman Farzaneh, Keiichi Ishihara  
Kyoto University, Japan

**P-41** Core time 1

**Using system dynamics model to support policy makers in integrated management of greenhouse gas emissions from the waste sector: case study in Hanoi**

Khue Minh Dao, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano  
Graduate School of Life and Environmental Sciences, University of Tsukuba

**P-42** Core time 2

**Material consumption and material stocks in small island communities**

Hsin-Tien Lin, Keiichi N. Ishihara  
Kyoto University, Japan

**P-43** Core time 1

**Assessment of climate change impact on surface water quality and quantity and its mitigation management: Orkhon Valley, Mongolia**

Magsar Amgalan<sup>1,2</sup>, Toru Matsumoto<sup>1</sup>, Tarzad Ulaanbaatar<sup>2</sup>  
<sup>1</sup>The University of Kitakyushu, Japan; <sup>2</sup>The Mongolian University of Science and Technology

**P-44** Core time 2

**Product service system design considering the negative effects on a society: an example of dockless bike sharing**

Li-hsing Shih, Tsung-kai Chou  
National Cheng Kung University, Taiwan

**P-45** Core time 1

**Estimation of greenhouse gas emissions from a chicken meat production system in Japan through a life cycle assessment**

Tatsuo Hishinuma<sup>1</sup>, Yuji Sakai<sup>2</sup>, Thoru Sakuraoka<sup>2</sup>, Atsushi Inaba<sup>2</sup>  
<sup>1</sup>Utsunomiya University, Japan; <sup>2</sup>Kogakuin University, Japan

**P-46** Core time 2

**Structural similarity analysis using the world input-output tables**

Kayoko Shironitta<sup>1</sup>, Shigemi Kagawa<sup>1</sup>, Yasushi Kondo<sup>2</sup>  
<sup>1</sup>Kyushu University, Japan; <sup>2</sup>Waseda University

**P-47** Core time 1

**Environmental impact assessment of rice caused by light pollution**

Yoko Kurahara, Norihiro Itsubo  
Tokyo City University, Japan

**P-48** Core time 2

**Measuring paddy soil quality using long-term fertilizer application experiments**

Longlong Tang, Kiyotada Hayashi, Kazunori Kohyama, Motoko Shimura  
National Agriculture and Food Research Organization, Japan

**P-49** Core time 1

**Carbon Footprint Projections for Japan Using Computable General Equilibrium**

Yuki Ichisugi<sup>1</sup>, Toshihiko Masui<sup>2</sup>, Norihito Itsubo<sup>1</sup>  
<sup>1</sup>Tokyo City University, Japan; <sup>2</sup>National Institute for Environmental Studies

<b>P-50</b>	Core time 2	<b>Withdrawn</b>
<b>Environmental evaluation of strategies that can reduce production impact of lithium-ion traction batteries</b>		
<b>Linda Ager-Wick Ellingsen, Christine Roxanne Hung</b> Norwegian University of Science and Technology (NTNU), Norway		
<b>P-51</b>	Core time 1	
<b>Sustainability analysis of roof covering materials after banning the asbestos in Sri Lanka 2018</b>		
<b>Siripatul Devavalage Nuwan Ariyawansa, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-52</b>	Core time 2	
<b>Life-cycle CO2 reduction potentials of the Japanese auto firms under the CAFE standard</b>		
<b>Mitsuki Kaneko<sup>1</sup>, Shogo Eguchi<sup>2</sup>, Shigemi Kagawa<sup>1</sup></b> <sup>1</sup> Kyushu University, Japan; <sup>2</sup> Fukuoka University, Japan		
<b>P-53</b>	Core time 1	
<b>Status of life cycle assessment (LCA) in Africa</b>		
<b>Selim Karkour, Norihiro Itsubo</b> Tokyo City University, Japan		
<b>P-54</b>	Core time 2	
<b>Development and Application of Basis Database for Materials Life Cycle Assessment in China</b>		
<b>Xiaoqing Li, Xianzheng Gong, Yu Liu, Zhihong Wang, Zuoren Nie</b> Beijing university of Technology, China		
<b>P-55</b>	Core time 1	
<b>Attributional and Consequential Life Cycle Assessment for Biomass Energy Production from Maize cob in Chiang Dao district</b>		
<b>Titaporn Supasri<sup>1,2</sup>, Trakarn Prapasongsa<sup>3</sup>, Sate Sampattagul<sup>1,2</sup></b> <sup>1</sup> Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand; <sup>2</sup> Center of Excellence on Energy, Economic, and Ecological Management, Science and Technology Research Institute, Chiang Mai University, Chiang Mai 50200, Thailand; <sup>3</sup> Department of Civil and Environmental Engineering, Faculty of Engineering, Mahidol University, Salaya, Putthamonthon, Nakhonpathom, 73170, Thailand		
<b>P-56</b>	Core time 2	
<b>Decomposition of the CO2 emissions associated with international flights of the Japanese airline industry</b>		
<b>Minami Kito<sup>1</sup>, Daisuke Nishijima<sup>2</sup>, Shigemi Kagawa<sup>1</sup></b> <sup>1</sup> Kyushu University, Japan; <sup>2</sup> National Institute for Environmental Studies of Japan, Japan		
<b>P-57</b>	Core time 1	
<b>Material Flow Analysis of Phosphorus in Shiga Prefecture</b>		
<b>Yuko Mano, Kazuyo Matsubae</b> Tohoku University, Japan		
<b>P-58</b>	Core time 2	
<b>Life cycle assessment of waste plastic containers and packaging management with consideration of the independent recycling of single resin food tray material</b>		
<b>Trang Thi Doan Nguyen, Toyohiko Nakakubo</b> Ochanomizu University, Japan		
<b>P-59</b>	Core time 1	
<b>Eco-efficiency in Street Lighting Services</b>		
<b>Oswaldo Sanchez Junior</b> IPT – Institute for Technological Research, Brazil		
<b>P-60</b>	Core time 2	

<b>PlasticBudget – Project on the environmental assessment of microplastic emissions</b>		
<b><u>Nils Thonemann</u>, Daniel Maga</b> Fraunhofer UMSICHT, Germany		
<b>P-61</b>	<b>Core time 1</b>	
<b>Evaluation of Municipal Solid Waste Management in Ha Long Bay Area: Scenario Analysis based on Life Cycle Assessment Approach</b>		
<b><u>Duong Hoang</u>, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-62</b>	<b>Core time 2</b>	<b>Withdrawn</b>
<b>Building smart cities under a life cycle thinking approach: an opportunity for pneumatic waste collection static systems</b>		
<b><u>Maria Margallo</u><sup>1</sup>, Alba Bala<sup>2</sup>, Susana Leao<sup>2</sup>, Carlos Cerdán<sup>2</sup>, Marco Raugei<sup>2</sup>, Pere Fullana<sup>2</sup>, Ruben Aldaco<sup>1</sup></b> <sup>1</sup> Departamento de Ingeniería Química y Biomolecular, Universidad de Cantabria, Spain; <sup>2</sup> Catedra UNESCO de Ciclo de Vida y Cambio Climático, Universidad Pompeu Fabra, Spain		
<b>P-63</b>	<b>Core time 1</b>	
<b>Exploring the Potential of Bioremediation Techniques to Treat Contaminated Soil from Waste Oil in Developing Countries: Case of Kinshasa, DR. Congo</b>		
<b><u>Yllah Kang Okin</u>, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-64</b>	<b>Core time 2</b>	
<b>A Stormwater Management Case Study using LCA and LCC</b>		
<b><u>Lisa Ann Peterson</u>, Sabrina Spatari</b> Drexel University, United States		
<b>P-65</b>	<b>Core time 1</b>	
<b>Reverse Innovation and Sustainable Product Development: A Knowledge-Oriented Viewpoint</b>		
<b><u>Harald Ernst Otto</u></b> Polytechnic University of Marche, Italy		
<b>P-66</b>	<b>Core time 2</b>	
<b>Strategies to Improve Sanitation Services in Sudan: Environmental and Socio-economic Implications</b>		
<b><u>Ola M. A. Mohamed</u>, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-67</b>	<b>Core time 1</b>	
<b>Applying the Principle of Quintuple Bottom Lines to the Assessment of City Sustainability</b>		
<b><u>Yu-Ting Huang</u>, Yuh-Ming Lee</b> Institute of Natural Resource Management, National Taipei University, Taiwan		
<b>P-68</b>	<b>Core time 2</b>	
<b>Risk Mapping of Road Network for Climate Change effects along with Response Mechanism analysis for Resilient Disaster Management</b>		
<b><u>Shamima Yasmin</u>, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-69</b>	<b>Core time 1</b>	
<b>Development of Integrated Approach for Poultry Waste Management in Bangladesh</b>		
<b><u>Zinat Mahal</u>, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano</b> University of Tsukuba, Japan		
<b>P-70</b>	<b>Core time 2</b>	
<b>A Global Analysis of CO2 Reduction Potentials in the Metal Industry</b>		

<p><b><u>Hiroataka Takayabu</u>, Shigemi Kagawa</b> Kyushu University, Japan</p>
<p><b>P-71</b> Core time 1 <b>Analyzing the input-output network of the Free Trade Agreement</b> <b><u>Shohei Tokito</u></b> Kyushu University, Japan</p>
<p><b>P-72</b> Core time 2 <b>Estimation of Exported Mixed Metal Scrap for Evaluation of End-of-Life Recycling Rates</b> <b>Masato Nakada, Ichiro Daigo, Manabu Enoki</b> The University of Tokyo, Japan</p>
<p><b>P-73</b> Core time 1 <b>Analyzing consumption-based health impacts associated with ambient air pollution in Asia</b> <b>Fumiya Nagashima<sup>1</sup>, Keisuke Nansai<sup>2</sup>, Satoru Chatani<sup>2</sup>, Shigemi Kagawa<sup>1</sup></b> <sup>1</sup>Kyushu University, Japan; <sup>2</sup>National Institute for Environmental Studies, Japan</p>
<p><b>P-74</b> Core time 2 <b>Global Distribution of Hidden Flows Induced by Consumption of Metals: Iron, Copper, and Nickel</b> <b>Kenichi Nakajima<sup>1,2</sup>, Shoichiro Noda<sup>2</sup>, Keisuke Nansai<sup>1</sup>, Kazuyo Matsubae<sup>3</sup>, Makoto Tomita<sup>4</sup>, Wataru Takayanagi<sup>1</sup></b> <sup>1</sup>National Institute for Environmental Studies, Japan; <sup>2</sup>The University of Tokyo; <sup>3</sup>Tohoku University; <sup>4</sup>Tokai University</p>
<p><b>P-75</b> Core time 1 <b>Withdrawn</b> <b>Uncertainty Assessment in Hybrid LCA: Precision vs. Accuracy</b> <b>Jessica Lee Perkins, Sangwon Suh</b> University of California, Santa Barbara, United States</p>
<p><b>P-76</b> Core time 2 <b>Determinants of Population Flows between Southeast and East Asian Countries and Their Environmental and Economic Impacts</b> <b>Tomoaki Yoshizawa, Shigemi Kagawa, Fumiya Nagashima</b> Kyushu University, Japan</p>
<p><b>P-77</b> Core time 1 <b>Carbon Footprint from Household Consumption and Exploration of Reduction Potentials for the Paris Agreement Target: A Preliminary Study on Japan and Finland</b> <b>Ryu Koide<sup>1,2</sup>, Michael Lettenmeier<sup>3,4,5</sup>, Viivi Toivio<sup>5</sup>, Aryanie Amellina<sup>1</sup>, Miho Kamei<sup>1</sup>, Lewis Akenji<sup>1,6</sup></b> <sup>1</sup>Institute for Global Environmental Strategies, Japan; <sup>2</sup>Johns Hopkins University, United States; <sup>3</sup>Aalto University, Finland; <sup>4</sup>Wuppertal Institute, Germany; <sup>5</sup>D-mat, Finland; <sup>6</sup>University of Helsinki, Finland</p>
<p><b>P-78</b> Core time 2 <b>Calculation Experiences of Mining Risk Footprint and Mining Risk Index for Indium Metal of Two Taiwan TFT-LCD Companies</b> <b>Jahau Lewis Chen, Jong-Han Lu</b> National Cheng Kung University, Taiwan</p>
<p><b>P-79</b> Core time 1 <b>Mining Waste induced in China by its trading partners: a multi-regional input-output approach</b> <b>Makiko Tsukui</b> Tokyo International University, Japan</p>
<p><b>P-80</b> Core time 2 <b>Environmental Performance and Energy Efficiency of Fuel Cell based Energy Storage System from a Life Cycle Perspective</b> <b>Hyoungseok Kim<sup>1</sup>, Donghyeon Kim<sup>2</sup>, Woo-jin Choi<sup>3</sup>, Tak Hur<sup>2</sup></b> <sup>1</sup>Ecoplus enc Corp., South Korea; <sup>2</sup>Konkuk University, South Korea; <sup>3</sup>University of Suwon, South Korea</p>

<b>P-81</b>	<b>Core time 1</b>
<b>Comparative study for Product Category Rule(PCR) of livestock products</b>	
<b>Yoosung Park</b> , Geun-Young Lee, Sung-Mo Yeon HIP, South Korea	
<b>P-82</b>	<b>Core time 2</b>
<b>Introduction of Korean Water Footprint</b>	
<b>Minji Park</b> , Joonjea Lee, Joohee La, Hyewon Bang KEITI(Korea Environmental Industry & Technology Institute), South Korea	
<b>P-83</b>	<b>Core time 1</b>
<b>How many fuel poverty households exist in Japan? – An empirical analysis using household income and expenditure survey microdata</b>	
<b>Tomohiro Tabata</b> <sup>1</sup> , Peii Tsai <sup>2</sup> <sup>1</sup> Kobe University, Japan; <sup>2</sup> Yokohama City University	
<b>P-84</b>	<b>Core time 2</b>
<b>Household consumption in Japan and planetary boundaries: a case study of climate change, ocean acidification, nitrogen circulation, land-system change, and fresh water use</b>	
<b>Takahiro Sasaki</b> <sup>1</sup> , Ryosuke Bamba <sup>1</sup> , Masaharu Motoshita <sup>2</sup> , Keisuke Nansai <sup>3</sup> , Sebastien Dente <sup>1</sup> , Seiji Hashimoto <sup>1</sup> <sup>1</sup> Ritsumeikan University, Japan; <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan; <sup>3</sup> National Institute for Environmental Studies, Japan	
<b>P-85</b>	<b>Core time 1</b>
<b>The effect of railway abolishment on the traffic of the surrounding roads and the CO2 emissions</b>	
<b>Akihiro Yoshimura</b> , Yasunari Matsuno Chiba University, Japan	
<b>P-86</b>	<b>Core time 2</b>
<b>Quantitative Evaluation of Environmental Burden Reduction for Blanching Pretreatment during Dried Cabbage Production Process.</b>	
<b>Yuma Sasaki</b> <sup>1</sup> , Takahiro Orikasa <sup>1</sup> , Takashi Watanabe <sup>2</sup> , Shoji Koide <sup>1</sup> <sup>1</sup> Iwate University, Japan; <sup>2</sup> National Agriculture and Food Research Organization, Japan	
<b>P-87</b>	<b>Core time 1</b>
<b>How to model biological control practices in life cycle assessment of agricultural production systems</b>	
<b>Motoko Shimura</b> , Kiyotada Hayashi, Jonglong Tang Japan, Western Region Agricultural Research Center, NARO	
<b>P-88</b>	<b>Core time 2</b>
<b>A Method for Estimating Inventory Data of Foreign Products: Utilizing IDEA for Seven Asian Countries</b>	
<b>Kensuke Kobayashi</b> <sup>1,2</sup> , Kenshiro Nakai <sup>1</sup> , Yuya Kimura <sup>1</sup> , Chiharu Fujii <sup>2</sup> , Maki Yokota <sup>2</sup> , Kiyotaka Tahara <sup>2</sup> <sup>1</sup> Prefectural University of Hiroshima, Japan; <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan	
<b>P-89</b>	<b>Core time 1</b>
<b>Estimation of Carbon Footprint Associated with Bonito Consumption</b>	
<b>Kazuhito Watanabe</b> Miyagi Prefectural Government, Japan	
<b>P-90</b>	<b>Core time 2</b>
<b>Stock and waste flow analysis of household appliances in developing countries: A case study of Vietnam</b>	
<b>Thao Quoc Tran</b> , Jun Nakatani, Yuichi Moriguchi The University of Tokyo, Japan	

**P-91** Core time 1

**Genuine recycling rates of municipal solid waste: comparing Japan and Taiwan**

Azusa Watanabe<sup>1</sup>, I-Chun Chen<sup>2</sup>, Hwong-wen Ma<sup>2</sup>, Seiji Hashimoto<sup>1</sup>

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**P-92** Core time 2

**Describing Diffusion Scenarios of Thermoelectric Generators: An Exploratory Study**

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**P-93** Core time 1

**Urban planning and air quality improvement in Ulaanbaatar city, Mongolia**

Davaanyam Enkhbaatar, Helmut Yabar, Takeshi Mizunoya, Yoshiro Higano

University of Tsukuba, Japan

**P-94** Core time 2

**Withdrawn**

**A Study on Utilization of International Market Mechanisms to Mitigate Green House Gas Emissions from Energy Sector of Mongolia**

Undarmaa Khurelbaatar, Takeshi Mizunoya, Helmut Yabar, Yoshiro Higano

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