

# 4<sup>th</sup> International Conference on Final Sinks

-How can the need for sinks be reduced by  
cleaner production and waste prevention?-

<http://icfs2017.org/>

Organized by



October 24-27, 2017  
Kyoto, Japan

## 1. Conference Venue

Kyoto Research Park Building #4, West Area

Address: 93 Chudoji Awata-cho, Shimogyo-ku, Kyoto 600-8815, Japan



## 2. Programs

	24th Tuesday		25th Wednesday		26th Thursday		27th Friday
	Oral Session Room (Buzz Hall)	Poster & Exhibition Area (Banquet Hall)	Oral Session Room (Buzz Hall)	Poster & Exhibition Area (Banquet Hall)	Oral Session Room (Buzz Hall)	Poster & Exhibition Area (Banquet Hall)	
8:00							
9:00			09:00-09:30 Opening ceremony & Keynote 1 Prof. Shin-ichi Sakai		09:00-09:30 Keynote 6 Prof. Ulrich Kral		09:00-18:15
10:00			09:30-10:00 Keynote 2 Prof. Hwong-Wen Ma		09:30-10:00 Keynote 7 Prof. Shinichiro Nakamura		Technical tour
11:00			10:00-10:30 Keynote 3 Prof. Mario Grosso		10:00-10:30 Keynote 8 Dr. Leo Simon Morf		
12:00			10:30-11:00 Keynote 4 Mr. Takashi Shimamura		10:30-10:45 Coffee break		
13:00			11:00-11:15 Coffee break		10:45-12:30 Session D Clean cycle for hazardous material prevention Chair: Leo Simon Morf Shin Takahashi		
14:00			11:15-12:30 Session A Material flow analysis and life cycle assessment Chair: Jinhui Li Julian Cleary		12:30-14:00 Lunch		
15:00			12:30-14:00 Lunch	13:15-14:45 Poster Session & Sponsor Exhibition	12:30-14:00 Lunch	13:15-14:45 Poster Session & Sponsor Exhibition	
16:00			14:45-15:15 Keynote 5 Prof. Vera Susanne Rotter		14:45-16:15 Session E 3R challenges for a sustainable society in Asia and Pacific I: Technological development Chair: Giljong Oh Ulrich Kral		
17:00	17:00-18:00 Registration		15:15-16:00 Session B Indicators development for resource efficiency Chair: Vera Susanne Rotter		16:15-16:30 Coffee break		
18:00			16:30-16:45 Coffee break		16:30-17:45 Session F 3R challenges for a sustainable society in Asia and Pacific II: Case studies Chair: Shinichiro Nakamura		
19:00	18:00-20:00 Welcome Party at Banquet Hall		16:45-18:00 Session C Clean cycle to reduce final sinks Chair: Mario Grosso Yong-Chul Jang		17:45-18:15 Closing ceremony		
20:00			18:00-19:00 Move from KRP to SODOH by shuttle bus		18:15-20:00 Farewell Party at Atrium		
21:00			19:00-21:00 Conference Dinner at the SODOH				

## Scientific Program

## Tuesday, October 24, 2017

18:00-20:00	Welcome Party at Banquet Hall, Building #4
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## Wednesday, October 25, 2017

Keynote speech 1		Oral Session Room (Buzz Hall)	
9:00-9:30	Material Flows, Stocks and Clean Cycles	Shin-ichi Sakai	Japan
Keynote speech 2		Oral Session Room (Buzz Hall)	
9:30-10:00	Final Sink and Clean Cycle	Hwong-Wen Ma	Taiwan
Keynote speech 3		Oral Session Room (Buzz Hall)	
10:00-10:30	Waste prevention and re-use: experiences, environmental assessment and challenges	Mario Grosso	Italy
Keynote speech 4		Oral Session Room (Buzz Hall)	
10:30-11:00	Toyota Environmental Challenge 2050 ~ Challenge for Resource Recycling Management ~	Takashi Shimamura	Japan
11:00-11:15		Exhibition / Poster Display / Coffee Break	
Session A: Material flow analysis and life cycle assessment			
11:15-12:30		Oral Session Room (Buzz Hall)	
Chair		Jinhui Li, China; Julian Cleary, Canada	
11:15-11:30	Global resource flows in trade by future socio-economic scenarios	Ryoko Morioka	Japan
11:30-11:45	Material Flow Analysis of Concrete and Concrete Waste in Australia	Soo Huey Teh	Australia

A-3 11:45-12:00	Diachronic Comparison of Material flow in Japan from Perspective of both Direct Material Input and Total Material Requirement	Eiji Yamasue	Japan
A-4 12:00-12:15	Implementing LCA on Land Use in an Economic and Environmental Integrated Assessment Model for Deep Decarbonization	Li-Heng Chen	Taiwan
A-5 12:15-12:30	The Effect of Water Scarcity on the Water Use in Life Cycle Impact Assessment in Taiwan	Lance HongWei Huang	Taiwan
12:30-14:00		Lunch	
Keynote speech 5		Oral Session Room (Buzz Hall)	
14:45-15:15	ProSUM – prospective material flow management in a circular economy	Vera Susanne Rotter	Germany

## Session B: Indicators development for resource efficiency

15:15-16:30		Oral Session Room (Buzz Hall)	
Chair		Vera Susanne Rotter, Germany	
B-1 15:15-15:30	Building indicators for improving factory resource efficiency	Chia-Yun Chiang	Taiwan
B-2 15:30-15:45	Assessing carbon efficiency of materials in Japan	Sebastien Michael Rene Dente	Japan
B-3 15:45-16:00	Comparative life cycle assessment of sludge disposal methods for optimal management: a case study of Xiamen, China	Lishan Xiao	China
B-4 16:00-16:15	Analysis of Total Materials Requirement for Technological Change in Automobile	Kenyu Matsui	Japan
B-5 16:15-16:30	Comparison and Analysis on Calculation Methods of the Waste Recycling Rate	Gil-Jong Oh	Korea
16:30-16:45		Exhibition / Poster Display / Coffee Break	

Session C: Clean cycle to reduce final sinks		Oral Session Room (Buzz Hall)	
16:45-18:00		Oral Session Room (Buzz Hall)	
Chair	Mario Grosso, Italy; Yong-Chul Jang, South Korea		
<b>C-1</b> 16:45-17:00	Analysis of the Dissipation of Steel Alloys Used for Vehicle Engines in the Recycling Process	Zhengyang Zhang	Japan
<b>C-2</b> 17:00-17:15	Evaluating the spatial and temporal pattern of building stocks as the potential of urban mining in Taipei City	Pei-Chiun Li	Taiwan
<b>C-3</b> 17:15-17:30	Material stock and disaster waste management	Misuzu Asari	Japan
<b>C-4</b> 17:30-17:45	Phosphorus Recovery to Reduce Depletion for a Long-term Resource Management	Demet Seyhan	Turkey
<b>C-5</b> 17:45-18:00	Automobile Power-batteries Recycling in China	Lili Liu	China
<b>19:00-21:00</b>	<b>Conference Dinner at the SODOH</b>		
Thursday, October 26, 2017		Oral Session Room (Buzz Hall)	
<b>Keynote speech 6</b>		Oral Session Room (Buzz Hall)	
<b>9:00-9:30</b>	Sinks and its relevance for modern waste management systems	Ulrich Kral	Austria
<b>Keynote speech 7</b>		Oral Session Room (Buzz Hall)	
<b>9:30-10:00</b>	Tracking the fate of Cr and Ni in steel over life cycles of multiple products: measuring circularity under consideration of quality of recycling	Shinichiro Nakamura	Japan
<b>Keynote speech 8</b>		Oral Session Room (Buzz Hall)	
<b>10:00-10:30</b>	Thermorecycling in Waste to Energy plants as a key process to effectively clean cycles and reduce final sink capacity	Leo Simon Morf	Switzerland
<b>10:30-10:45</b>		<b>Exhibition / Poster Display / Coffee Break</b>	

Session D: Clean cycle for hazardous material prevention		Oral Session Room (Buzz Hall)	
10:45-12:30		Oral Session Room (Buzz Hall)	
Chair	Leo Simon Morf, Switzerland; Shin Takahashi, Japan		
<b>D-1</b> 10:45-11:00	Time-series excess mercury analysis in China	Habuer	Japan
<b>D-2</b> 11:00-11:15	Evaluation of an emerging technology by material flow analysis- case study on a potential CI circulation system with PVC wastes recycling	Jiaqi Lu	Japan
<b>D-3</b> 11:15-11:30	Material Flow Analysis of Automobile Containing Brominated Flame Retardants in Korea	Yong-Chul Jang	Korea
<b>D-4</b> 11:30-11:45	Reducing In-Use Deca-Brominated Diphenyl Ether (deca-BDE) Stocks in Japan	Nguyen Thanh Dien	Japan
<b>D-5</b> 11:45-12:00	Considering Groundwater Exposure in Assessing Landfill Mining Alternatives	Siang-Yu Huang	Taiwan
<b>D-6</b> 12:00-12:15	The Procedural Impact of the Temporary Import Procedure to Reduce the Electronic Waste Generator from the Imported Photocopy Machine: Evidence from Indonesia	Dedi Abdul Hadi	Japan
<b>D-7</b> 12:15-12:30	Issues Related to 3R with the Disposal of Electronic Waste in India	Padmini V	India
<b>12:30-14:00</b>		<b>Lunch</b>	
Session E: 3R challenges for a sustainable society in Asia and Pacific I: Technological development		Oral Session Room (Buzz Hall)	
14:45-16:15		Oral Session Room (Buzz Hall)	
Chair	Gil-Jong Oh, South Korea; Ulrich Kral, Austria		
<b>E-1</b> 14:45-15:00	Innovation in Resources-from-Waste based on Subcritical Water Reactor toward the Final Sink Realization in Asia	Jun Matsushita	Japan
<b>E-2</b> 15:00-15:15	Fly Ash Management and Dioxins in Japan	Mengmei Zhang	China
<b>E-3</b> 15:15-15:30	Treatment of MSWI Bottom Ash by Wet-CO <sub>2</sub> Gas for its Use as Ordinary Portland Cement	Sonia Muradia Sharma	Japan
<b>E-4</b> 15:30-15:45	Development of a Technology for Recovering Resources from Livestock Waste	Hiroo Kawaguchi	Japan
<b>E-5</b> 15:45-16:00	Waste utilization and gas emission from MBT process in tropical climate	Noppahit Sutthasil	Thailand

<b>E-6</b> 16:00-16:15	Supercritical ethanol liquefaction of lemon peel bio-waste to produce bio-aviation fuel	Je-Lueng Shie	Taiwan
<b>16:15-16:30</b>	<b>Exhibition / Poster Display / Coffee Break</b>		
<b>Session F: 3R challenges for a sustainable society in Asia and Pacific II: Case studies</b>			
<b>16:30-17:45</b>	Oral Session Room (Buzz Hall)		
<b>Chair</b>	Shinichiro Nakamura, Japan		
<b>F-1</b> 16:30-16:45	3Rs solutions for a resource efficient society ~ Experience from the Regional 3R Forum in Asia and the Pacific	Anupam Khajuria	Japan
<b>F-2</b> 16:45-17:00	Waste Separation at Source Practice and Recycling Potential of The Hotel Industry in Hoi An Ancient City, Vietnam	Toan Song Pham-Phu	Japan
<b>F-3</b> 17:00-17:15	Behavior and attitudes on household solid waste recycling in Da Nang city, Vietnam	Vu Chi Mai Tran	Japan
<b>F-4</b> 17:15-17:30	Building a circular economy for improving material resource efficiency in end-of-life vehicles in India	Nitish Arora	India
<b>F-5</b> 17:30-17:45	Challenges for food loss prevention from a life cycle perspective: Case study of Kyoto City	Junya Yano	Japan
<b>17:45-18:15</b>	<b>Closing ceremony</b> Oral Session Room (Buzz Hall)		
<b>18:15-20:00</b>	<b>Farewell Party at Atrium, Building #1</b>		

**Wednesday, October 25, 2017 & Thursday, October 26, 2017**

**Poster Session & Sponsor Exhibition**

13:15-14:45 Exhibition & Poster Area (Banquet Hall)

*System analytical approach: Material flow and life cycle assessment*

<b>P-1</b>	Evaluating the evolution of the Heihe River basin using the ecological network analysis: Efficiency, resilience, and implications for water resource management policy	Ali Kharrazi	Japan
<b>P-2</b>	Carbon Footprint Assessment of Multimedia Online Services – Case Study of Taiwan Mobile Company	Chien-Hung Kuo	Taiwan
<b>P-3</b>	Dynamic Material Flow Analysis of Polybrominated Diphenyl Ethers and waste management in Korea	Hyunhee Kim	Korea
<b>P-4</b>	Stock, Emission, and Substitution Assessment of Decabromodiphenyl ether (DecaBDE) in Electrical and Electronic Equipment in Japan	Mianqiang Xue	Japan
<b>P-5</b>	Food Loss Composition and Its Greenhouse Gas Reduction Effect in the Food Service Sector	Ritsuki Yanagawa	Japan
<b>P-6</b>	Life Cycle Assessment for On-site Anaerobic Digestion Systems for Small-scale Food Businesses	Junya Yano	Japan
<b>P-7</b>	Improvement of island material cycle and cost effectiveness by introducing RDF plant to waste management system in Kinmen, Taiwan	Hsin-Tien Lin	Japan

*Control of POPs and other hazardous materials for clean cycle*

<b>P-8</b>	Fly Ash Management: a Review on Dioxins and other POPs	Mengmei Zhang	China
<b>P-9</b>	Dioxin-like Compounds in Brominated and Phosphorus Flame Retardants	Go Suzuki	Japan
<b>P-10</b>	Soil Contamination by Organohalogen Compounds in the Agbogbloshie E-waste Recycling Site in Accra, Ghana	Tatsuya Kunisue	Japan
<b>P-11</b>	Assessment of Micropollutants Released from Recycling Activities of End-of-Life Vehicles (ELV) in Northern Vietnam	Shin Takahashi	Japan
<b>P-12</b>	Bioavailability of Polycyclic Aromatic Hydrocarbons (PAHs) in Sea-based Waste Disposal Site Sediment Assessed by Equilibrium Passive Sampling	Satoshi Endo	Japan

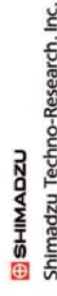
P-13	Metal Contamination of Soils Due to the End-of-Life Ship Dismantling in the Open-Beaches	Iftakharul Alam	Japan
<i>Material cycles and waste management: Technology and practice</i>			
P-14	Rate of CO <sub>2</sub> absorption to neutral to weak base water	Kohei Saito	Japan
P-15	Preliminary Analysis of Dissolved Sulfur-Containing Molecules in Landfill Leachates by Orbitrap Mass Spectrometry	Taketoshi Kusakabe	Japan
P-16	Wide-pore zeolites promote thermochemical destruction of organic Cl compounds	Shunji Kawamoto	Japan
P-17	Collection of Fine Particles of Hygroscopic Salts in Flue Gas by Ice-cooled Copper Tube in a Coiled Form (ICTC)	Nobuhisa Watanabe	Japan
P-18	Change in MSW generation and population in Bangkok, Thailand	Kosuke Kawai	Japan
P-19	Management of E-Waste in India	PADMINI V	India
P-20	Comparative Study on End-of-life Vehicles and Resource Substances through Dismantling Survey	Ryo Hasegawa	Japan
P-21	Preliminary Estimation of Potential Electricity Generation from Landfill Site in Jakarta City	Baskoro Lokahita	Japan
P-22	Analysis of MBT operating cost and the moisture content of waste in Tropical regions	Satoru Ochiai	Japan
P-23	Unit Generation Rates for Disaster Waste and Estimation of Organic Waste-Case in 35 Wards of Kathmandu City	Raju Poudel	Japan

## Sponsors

### Platinum



### Silver



### 3. Social Programs

#### <Welcome party>

We would like to welcome you with special foods and drinks on October 24th at KRP, the conference venue. Please attend and enjoy this wonderful party.

Date	18:00—20:00 on 24 (Tue.) October 2017
Venue	Banquet Hall, Bldg. #4 in KRP

#### <Conference dinner>



Conference dinner will be held in The SODOH on 25th October. The SODOH is located in Higashiyama area where various historical shrines are centralized. After fruitful discussions at the sessions, you can enjoy excellent dinners and special ceremony.

Date	19:00—21:00 on 25 (Wed.) October 2017
Venue	The SODOH Higashiyama Kyoto
Transportation	Round-trip shuttle bus service is provided

#### <Farewell party>

After the closing ceremony, we plan to invite you to the Farewell party on October 26th, hoping to meet you again in the next 5th Final Sinks!

Date	18:30—20:30 on 26 (Thu.) October 2017
Venue	Atrium, Bldg. #1 in KRP

### 4. Technical Visit Program

#### <Pre-registration>

For pre-registration, please send e-mail to the Secretariat ( info@icfs2017.org ) by 20th October.

1. Name, 2. Affiliation, 3. Country, 4. Phone number, and 5. E-mail address should be included in the pre-registration e-mail.

Participants must pre-register for the technical tour. On-site registration is also available, until registration reaches maximum capacity (40 attendances).

Date	9:00—18:15 on 27 (Fri.) October 2017
Expense	Free
Visiting sites	<ul style="list-style-type: none"> <li>• South District Resource Recycling Center</li> <li>• Eco Land Otowa No Mori (Landfill site)</li> <li>• Okura Sake Museum</li> </ul>
Meeting Point	In front of Bldg #4 in KRP at 8:50-9:00 (Bus will leave at 9:00)

## 5. Access to KRP

### <From Kansai Airport to Kyoto Station>

- Kansai Airport Limited Express HARUKA, by Japan Railway (JR)**
  - 2,850 JPY for non-reservation seat
  - Traveling time to Kyoto Station is 75 minutes.
  - For more information: <http://www.westjr.co.jp/global/en/travel-information/routemap/kansai-airport/>
- Limousine Bus, by KATE (Kansai Airport Transportation Enterprise)**
  - 2,550 JPY
  - This bus leaves every 30-40 minutes. Traveling time to JR Kyoto Station is about 85 minutes. The tickets can be purchased from vending machines located near the bus stops.
  - For more information: [http://www.kate.co.jp/pc/index\\_e.html](http://www.kate.co.jp/pc/index_e.html)
- MK Skygateshuttle**
  - 3,600 JPY
  - This service takes you directly to your destination. A Shuttle reservation is required 2 days before your arrival date. The Meeting point (MK counter) is located next to Gate H of the airport South Exit. Traveling time is about 120 minutes.
  - For more information: <http://www.mktaxi-japan.com/>

### <From JR Kyoto Station to KRP>

- Taxi**
  - Approx. 1,000 JPY, 10 minutes
- JR San-in (Sagano) line (Local)**
  - 140 JPY
  - Please get off at the first stop, Tambaguchi Station (4 minutes). 4 minutes to walk from the station to Kyoto Research Park.

## 6. Registration

Registration process can be completed through <https://icfs.confite.atlas.jp/login>

	Early	On-site
Speaker or Poster presenter	48,000 JPY	60,000 JPY
Non-presenter	57,600 JPY	72,000 JPY
Student (both presenter and non-presenter)	36,000 JPY	36,000 JPY
Student excluding conference dinner	27,600 JPY	27,600 JPY
Less-developed countries (LDC)	36,000 JPY	36,000 JPY

## 7. Contact to ICFS2017 Secretariat

Final Sinks 2017 Secretariat: Junya Yano Tel : +81-75-753-7711      Fax: +81-75-753-7710 E-mail: <a href="mailto:info@icfs2017.org">info@icfs2017.org</a>
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