



MIRAI Seminar  
Including Large-Scale Research Facilities, and their Potential for Research and Society  
Lund, 17-19 October 2017

## SCIENTIFIC SESSION – SUSTAINABILITY

Venue: Ideon Science Park – Beta  
Scheelevägen 17, Lund

### Main topic:

Sustainability: Linked to the UN Sustainable Development Goals (SDGs),  
<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

### Sub-topics:

1. New energy techniques
2. Water resources

### 17 October 2017

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| 13.15 | <i>Bus departs from AF building</i>   |
| 13.30 | Opening remark by Prof Anna Rutgersson (Chair of SSC Sustainability)  |
| 13.40 | Oral presentations by SSC members on the aims and research initiatives of each institution in the area of sustainability (4 presentations x 20 minutes) <ul style="list-style-type: none"><li>- Prof Hidetoshi Sekiguchi, Tokyo Institute of Technology</li><li>- Prof Björn-Ola Linnér, Linköping University</li><li>- Prof Toshinori Tsuru, Hiroshima University</li><li>- Prof Georgia Destouni, Stockholm University</li></ul>  |
| 15.00 | Sub-topic I: New energy techniques<br>Oral presentations by the young researchers in New energy techniques (10 minutes/presentation). To generally clarify how the presented institution / department / research contributes to the overarching goal of increased sustainability <ul style="list-style-type: none"><li>- Dr Kiyofumi Katagiri, Hiroshima University</li><li>- Dr Yvonne Nygård, Chalmers University of Technology</li><li>- Dr Hiroki Nara, Waseda University</li></ul>   |
| 15.30 | Coffee break <i>15.30 SSC member meeting</i>  |
| 16.00 | Oral presentations by the young researchers in New energy techniques (10 minutes/presentation). To generally clarify how the presented institution / department / research contributes to the overarching goal of increased sustainability <ul style="list-style-type: none"><li>- Prof Miho Yamauchi, Kyushu University (20 minutes)</li><li>- Dr Sepehr Shakeri Yekta, Linköping University</li><li>- Dr Masaaki Sadakiyo, Kyushu University</li><li>- PhD candidate Mitsuru Toyoda, Sophia University</li></ul> Questions and comments on the presentations (20 min) |
| 17.15 | End of session. <i>Bus departs from Ideon Science Park to central Lund</i>  |
| 18.30 | Mingle for all MIRAI participants (Venue: Tegnér's Matsalar)  |
| 19.00 | Dinner for all MIRAI participants (Venue: Tegnér's Matsalar)  |

## 18 October 2017

- 08.45 *Bus departs from Lund Cathedral to Ideon Science Park*
- 09.00 Oral presentations by the young researchers in New energy techniques (10 minutes/presentation). To generally clarify how the presented institution / department / research contributes to the overarching goal of increased sustainability
- Prof Takeo Yamaguchi, Tokyo Institute of Technology (20 min)
  - Prof Frank Lipnizki, Lund University (20 minutes)
  - Dr Shinkichi Inagaki, Nagoya University
  - Dr Takanori Tamaki, Tokyo Institute of Technology
  - PhD candidate Johan Thuvander, Lund University
- Questions and comments on the presentations (20 min)
- 10.30 Coffee break
- 10.50 Oral presentations by SSC members on the aims and research initiatives of each institution in the area of sustainability (3 presentations x 20 minutes)
- Prof Anna Rutgersson, Uppsala University
  - Prof Tielong Shen, Sophia University
  - Dr Shigenori Fujikawa, Kyushu University
- 11.50 Sub-topic II: Water resources  
Oral presentations by the young researchers in Water resources (10 minutes/presentation). To generally clarify how the presented institution / department / research contributes to the overarching goal of increased sustainability
- Dr Åsa Davidsson, Lund University
  - Dr Tomonori Kindaichi, Hiroshima University
  - Dr Fernando Jaramillo, Stockholm University
  - Dr Pierre De Wit, University of Gothenburg
- 12.30 Lunch
- 13.30 Oral presentations by the young researchers in Water resources (10 minutes/presentation). To generally clarify how the presented institution / department / research contributes to the overarching goal of increased sustainability
- Dr Danny Chun Pong Lau, Umeå University
  - Dr Eduardo Infantes, University of Gothenburg
  - Dr Masaru Kato, Hokkaido University
  - Dr Zahra Kalantari, Stockholm University
  - Dr Fritjof Fagerlund, Uppsala University
- Questions and comments on the presentations (30 min)
- 14.50 Break-out sessions including coffee/tea break (*Please see separate document*)
- 17.15 End of session. *Bus departs from Ideon Science Park to central Lund*
- 17.30 Dinner with the participants of Scientific Session – Sustainability, at Restaurant “Stäket” in central Lund. *We will pre-order and pay food for everyone. Drinks are paid by yourself.*  
**Please let [ulrica.ouline@uadm.uu.se](mailto:ulrica.ouline@uadm.uu.se) know if you can't attend the dinner**

## 19 October 2017

08.45	<i>Bus departs from Lund Cathedral to Ideon Science Park</i>
09.00	Break-out sessions including coffee/tea
12.15	Closing remark (all together)
12.45	Lunch
13.45	<i>Bus departs from Ideon Science Park to MAX IV and ESS</i>
14.00	Site visits to research infrastructures MAX IV and ESS
17.00	Day ends. <i>Bus departs back to central Lund</i>

## SSC members

Anna Rutgersson	Uppsala University
Georgia (Gia) Destouni	Stockholm University
Hidetoshi Sekiguchi	Tokyo Institute of Technology
Shigenori Fujikawa	Kyushu University
Tielong Shen	Sophia University
Toshinori Tsuru	Hiroshima University
Björn-Ola Linnér	Linköping University
Henrik Pavia	University of Gothenburg

## Sub-topic I: New energy techniques

Name	University	Title of presentation
Kiyofumi Katagiri	Hiroshima University	<i>Novel Preparation Procedure of Oxynitride Photocatalysts for Solar Hydrogen Production via Water Splitting</i>
Hiroki Nara	Waseda University	<i>Electrochemical Impedance Spectroscopy for Structured Electrodes of Lithium-Ion Batteries</i>
Masaaki Sadakiyo	Kyushu University	<i>Metal-Organic Frameworks as a New Class of Energy-Related Materials</i>
Yvonne Nygård	Chalmers University of Technology	<i>Production of fuels from lignocellulosic biomass or syngas</i>
Miho Yamauchi	Kyushu University	<i>Inorganic nanomaterials for efficient energy storage</i>
Takeo Yamaguchi	Tokyo Institute of Technology	<i>Systematic material design for fuel cells and water splitting technologies</i>
Johan Thuvander	Lund University	<i>Membrane processes for a sustainable future in the subtopic new energy techniques</i>
Mitsuru Toyoda	Sophia University	<i>System Control Technology for Sustainable Transportation Systems</i>
Shinkichi Inagaki	Nagoya University	<i>Energy Management System with Vehicles</i>
Sepehr Shakeri Yekta	Linköping University	<i>Biogas solutions for sustainable energy production and nutrient recovery</i>
Frank Lipnizki	Lund University	<i>Membranes for a sustainable future – The Lund approach</i>
Takanori Tamaki	Tokyo Institute of Technology	<i>Systematic Material Design of Enzymatic Biofuel Cells</i>

## Sub-topic II: Water resources

Name	University	Title of presentation
Danny Chun Pong Lau	Umeå University	<i>Trophic ecology and food webs of freshwater ecosystems in the changing environment</i>
Fernando Jaramillo	Stockholm University	<i>Human Impacts on the Terrestrial Freshwater System</i>
Pierre De Wit	University of Gothenburg	<i>Collaboration between the Marine Infrastructure at the University of Gothenburg and the National Genomics Infrastructure: Creating new models for Marine Biological Research</i>
Tomonori Kindaichi	Hiroshima University	<i>Research Topics on Water Resources in Department of Civil and Environmental Engineering, Hiroshima University</i>
Zahra Kalantari	Stockholm University	<i>Sustainable development and water resource management: tools for urban planners to handle high water levels</i>
Fritjof Fagerlund	Uppsala University	<i>Topics in groundwater contamination and remediation</i>
Masaru Kato	Hokkaido University	<i>Bioinspired electrocatalysts for oxygen reduction to water</i>
Åsa Davidsson	Lund University	<i>Urban wastewater handling – treatment and resource recovery</i>
Eduardo Infantes	University of Gothenburg	<i>Coastal restoration using aquatic plants: New techniques using wave flume facilities</i>