



**3rd SPring-8 - DIAMOND JOINT WORKSHOP  
INDUSTRIAL APPLICATIONS OF  
SYNCHROTRON RADIATION**

21-23 May 2012

SPring-8 Campus, Sayo, Japan  
Nichii Gakkan Port Island Center, Kobe, Japan

***Agenda***

## Day 1 At SPring-8 Campus

08:00 Depart from hotel to SPring-8

**SESSION: Opening**  
**Chair: Hideo Ohno (JASRI/SPring-8)**

09:30 **Opening Ceremony**

- Opening address by Tetsuhisa Shirakawa (JASRI/SPring-8)
- Welcome address by Tetsuya Ishikawa (RIKEN/SPring-8)
- Welcome address by Gerd Materlik (DLS)
- Welcome address by Katsuhiko Hara (MEXT)
- Welcome address by Kevin Knappett (British Embassy)

**SESSION: Overview**  
**Chair: Gerd Materlik (Diamond)**

09:55 **SPring-8 and SACLA**  
*Tetsuya Ishikawa, RIKEN/SPring-8*

10:15 **Diamond Light Source Overview**  
*Trevor Rayment, Diamond Light Source*

10:35 **UK Capital Investment Roadmap**  
*Neil Pratt, Science & Technology Facilities Council*

10:45 **Overview of Industrial Research Program at NSLS/NSLS-II**  
*Jun Wang, NSLS*

11:05 **Minerals, Metals and Materials: Understanding the World around Us**  
*Jeffrey Cutler, Canadian Light Source*

11:25 **Group Photo**

11:30 **Tour –SACLA**

12:10 **Lunch**

**SESSION: Industrial Applications at SPring-8**  
**Chair: Tetsuya Ishikawa (RIKEN/SPring-8)**

13:20 **Keynote Lecture I:**  
**Industrial Applications at SPring-8/SACLA Today**  
*Akira Yamakawa, JASRI/SPring-8*

13:40 **Keynote Lecture II:**  
**Shaping the Future of the SR Applications by the Industry-Academia Alliance**  
*Masaki Takata, RIKEN/JASRI/SPring-8*

14:00 **Keynote Lecture III:**  
**RISING Beamline Lights up Reactions Inside Batteries**  
*Zempachi Ogumi, Kyoto University*

- 14:30**      **Keynote Lecture IV:**  
**Time- and Space-Resolved XAFS Techniques for *in situ* Characterization**  
**of Polymer Electrolyte Fuel Cells**  
*Yasuhiro Iwasawa, The University of Electro-Communications*
- 15:00**      **Tea**
- 15:20**      **Tour – SPring-8**  
Beamlines to visit (visit three out of four beamlines)
- BL03XU: Advanced Softmaterial Beamline
  - BL24XU: Hyogo ID Beamline
  - BL28XU: RISING Beamline
  - BL33XU: TOYOTA Beamline
- 16:20**      Transport to Kobe
- 19:30**      **Reception at Nichii Gakkan Port Island Center, Kobe**

## Day 2 – At Kobe

**SESSION: Management Approaches for Industry Beamlines at SPring-8**

**Chair: Ichiro Hirosawa, JASRI/SPring-8**

**09:00 Hyogo Prefecture Beamlines**

*Jyunji Matsui, Hyogo Science and Technology Association*

**09:20 Management of SUNBEAM consortium and the Recent Activity on the Research**

*Naoki Awaji, Fujitsu Laboratories Ltd.*

**09:40 Advanced Soft-material Beamline Consortium at SPring-8 (FSBL)**

*Atsushi Takahara, Kyushu University*

**10:00 Design and Features of the TOYOTA Beamline (BL33XU) at the SPring-8**

*Kazuhiko Dohmae, Toyota Central R&D Labs., Inc.*

**10:20 Discussion session**

**10:30 Tea**

**SESSION: Energy I: Fuel cells and Catalysis**

**Chair: Trevor Rayment (Diamond)**

**10:50 Structure and Electrocatalytic Properties of Non-Platinum-Group-Metal Catalysts used for Polymer-Electrolyte Fuel Cells**

*Hideto Imai, NISSAN ARC, Ltd.*

**11:20 The use of Synchrotron Radiation in Vehicle Emissions Control Catalyst Characterisation**

*Timothy Hyde, Johnson Matthey Technology Centre*

**11:50 XAFS Analysis of Functional Ceramic Materials for SOFC**

*Tatsuyoshi Kono and Kouji Inukai, Noritake Co., Ltd.*

**12:20 Lunch**

**13:30 Operando XAFS Analysis of Fuel Cell Electrocatalysts at the TOYOTA Beamline**

*Yusaku F. Nishimura, Toyota Central R&D Labs., Inc.*

**14:00 Fischer-Tropsch Performance Correlated to Catalyst Structure: Trends in Activity and Stability for a Silica-Supported Co Catalyst**

*Laura Richard, Oxford Catalysts*

**14:30 Discussion session**

**14:45 Coffee**

**SESSION: Energy II: Saving**  
**Chair: Norimichi Sano (JASRI/SPring-8)**

**15:05**      **Understanding the Mechanism of Antiwear Performance using  
Synchrotron Radiation-based Techniques**  
*Jeffrey Cutler, Canadian Light Source*

**15:35**      **SAXS-USAXS Study of Modified Solution SBR for Fuel Efficient Tires**  
*Tetsuo Tominaga, JSR Corporation*

**16:05**      **XANES Study on Corrosion of Copper in Insulating Oil**  
*Yasushi Uehara, Mitsubishi Electric Co.*

**16:35**      **Discussion session**

**16:50**      **Move to K Computer**

**SESSION: Super-Computer**

**17:05**      **Tour - K Computer**

**17:50**      **Close**

**18:00**      **Dinner at FOCUS**

## Day 3 – At Kobe

**SESSION:** Energy III Chemical Reaction  
**Chair:** Elizabeth Shotton (Diamond)

**09:00**      **Developing Corrosion Prediction Models from In Situ Synchrotron X-ray Measurements**

*Alison Davenport, University of Birmingham*

**09:30**      **SR Research Topics on Corrosion and Its Related Reaction of Metals**

*Takenori Nakayama, Kobe Steel, Ltd.*

**10:00**      **Discussion session**

**10:15**      **Coffee**

**SESSION:** Energy III New Energy  
**Chair:** Claire Pizzey (Diamond)

**10:35**      **Applied Catalysis Research at Diamond**

*Anna Kroner, Diamond Light Source*

**11:05**      **Utilising Synchrotron Radiation in the Study of Fuel Systems**

*Peter Hutchins, Infineum*

**11:35**      **Energy Research Using High Resolution Powder Diffraction at Diamond**

*Chiu Tang, Diamond Light Source*

**12:05**      **Discussion session**

**12:20**      **Lunch**

**SESSION:** Wider Applications of Synchrotrons in Industry  
**Chair:** Ichiro Hatta (JASRI/SPring-8)

**13:30**      **SPring-8 Improves the Lives of the World's Consumers**

*Norimichi Sano, JASRI/SPring-8*

**14:00**      **Research of the Functional Chewing Gum "POs-Ca" for Oral Health Care by SPring-8**

*Tomoko Tanaka, Institute of Health Sciences, Ezaki Glico Co., Ltd.*

**14:30**      **X-ray Imaging of Polymer Foam Used in Sports Shoes**

*Junichiro Tateishi, ASICS Corporation*

**15:00**      **Industrial requirements for large scale facilities in the aerospace and nuclear sectors**

*David Koyama, Rolls-Royce*

**15:30**      **Discussion session**

**15:45**      **Tea**

**SESSION: Feedback from sessions and Discussion**

**Chair: Gerd Materlik**

- 16:05      Session Energy I presented by the chair of the session**
- 16:15      Session Energy II presented by the chair of the session**
- 16:25      Session Energy III presented by the chair of the session**
- 16:35      Session Energy IV presented by the chair of the session**
- 16:45      Session To be determined presented by the chair of the session**
- 16:55      Discussion session**
- 17:10      Concluding remarks**  
*Akira Yamakawa (JASRI/SPring-8) and Gerd Materlik (Diamond)*
- 17:25      Meeting Close – Departures for airport**