



# THE BRIDGE

MATERIALS ANALYSIS eNEWSLETTER  
JULY 2013, ISSUE 1

## Rigaku Workshop SmartLab Applications

*At the Rutherford Appleton Laboratories, Oxford, UK  
on September 17th and 18th 2013*

[www.rigaku.com/conferences/rese/smartlab](http://www.rigaku.com/conferences/rese/smartlab)

Rigaku is holding a two-day workshop on the SmartLab X-ray diffractometer at the Rutherford Appleton Laboratories, Oxford, UK on September 17th and 18th 2013. The workshop focuses on application and operation on the SmartLab and will be dedicated to actual and potential users of the instrument to create a "SmartLab family" in Europe. State-of-the-art research findings and methods will also be discussed by invited speakers elected from our users. We very much look forward to welcoming you to two days of wonderful discussions and fun.

### Venue

[\*ISIS Neutron and Muon Source\*](#)  
[\*Science and Technology Facilities Council\*](#)  
[\*Rutherford Appleton Laboratory\*](#)



### Tentative Agenda

#### 17th September, 13:00 - 17:30

- 13:00 Opening remark
- 13:10 Introduction to ISIS
- 13:30 Introduction to Rigaku
- 13:50 Product presentation  
"SmartLab for powder diffraction application"
- 14:30 Break
- 14:50 Product presentation by Agilent Technologies
- 15:10 Product presentation  
"SmartLab for thin film application"
- 16:00 Invited speech (1)
- 16:30 Tour around "ISIS" beam line
- 19:00 Workshop dinner (The Cosener's House)

#### 18th September, 09:00 - 12:00

- 09:00 Product presentation  
"New products from Rigaku"
- 09:30 Invited speech (2)
- 10:00 Break
- 10:15 Invited speech (3)
- 10:45 Multilayer and other optics  
for synchrotron radiation, solutions from Rigaku  
from EUV to hard x-rays
- 11:15 Tour around "Diamond" beam line
- 12:00 Closing remark

## Invited Speeches

### (1) Dr. Christy Kinane

Rutherford Appleton Laboratory, ISIS, UK

Title: "Reflectivity and Diffraction studies on magnetic thin films"

### (2) Dr. Mark Light

X-ray Diffraction Manager, Chemistry, Southampton University, UK

Title: "SmartLab: Some initial results and experiences"

### (3) Dr. Pascal Manuel

Crystallography Group, ISIS, UK

Title: "Comparative Synchrotron and SmartLab studies of ZnCr<sub>2</sub>O<sub>4</sub>"

## Product Presentation

### SmartLab for Powder Diffraction Application

Dr. Takayuki Konya

Application Laboratory, Rigaku Corporation, Tokyo, JAPAN

Abstract: Unique features of the SmartLab X-ray diffractometer including software for X-ray powder diffraction (XRPD) will be discussed. The SmartLab is the first commercial X-ray diffractometer, which implemented the Johansson type primary beam monochromator for both reflection and transmission XRPD on a vertical theta-theta goniometer. Combined with the PDXL software, featuring the direct space method for structure determination, the SmartLab provides a cutting-edge, easy to use diffractometer for today's demanding research. Unique to the SmartLab is the Guidance software, which instructs the operator to configure the instrument properly depending on the type of application and then aligns the optics automatically. Other unique features, like the world's fastest 1-D semiconductor detector (D/teX Ultra 250) and in-situ XRD-DSC measurement will also be discussed.

### SmartLab for Thin Film Applications

Dr. Artem Shalimov

Application Laboratory, Rigaku Europe SE, Ettlingen, GERMANY

Abstract: A wide range of SmartLab applications for thin film analysis will be presented and discussed. The

modular concept of the SmartLab diffractometer provides the opportunity to perform x-ray diffraction experiments with the highest resolution and outstanding intensity rate for polycrystalline films, epitaxial layers and structurally perfect materials. The in-plane detector arm, unique to Rigaku diffractometers, opens a new dimension in the structural study of thin and ultra-thin layers. The combination of hardware solutions and achievements in software development allow easy configuration of optics, high experimental performance and data analysis. A new software package that combines measurement and analysis automation (SmartStudio), along with a new data processing tool (DataMapper) will be introduced.

## New Products from Rigaku

Dr. Keisuke Saito

Marketing Manager / Global Product Marketing Manager, Rigaku Europe SE, Ettlingen, GERMANY

Abstract: Newly released products will be discussed, including bench top XRD and XRF instruments, dedicated instruments for specific applications, e.g. a new residual stress analyzer, standalone X-ray generators and new semiconductor based X-ray detectors.

---

## Registration and Accommodation

To register please contact Rigaku Europe, [rese@rigaku.com](mailto:rese@rigaku.com). The workshop is free of charge and includes workshop dinner and refreshments.

We have reserved 15 rooms at the nearby hotel, [The Cosener's House](#). If you require accommodation for the 17th September please contact them directly quoting "Rigaku Workshop Rooms". The room rate is 60 - 80 GBP depending on type for single occupancy room including breakfast. We will provide optional transportation to/from the hotel on the evening of the 17<sup>th</sup> and the morning of the 18<sup>th</sup>.