



IUCr-UNESCO-RIGAKU OpenLab Cambodia 2

Date: January 11 to 15, 2016
Venue: Institute of Technology of Cambodia (ITC)
Number of participants: 30

Even though X-ray crystallography plays a significant role in our daily lives, and forms the backbone of industries in many applications through increasing knowledge to developing new products around the world, it hasn't yet become popular in Cambodia.

Information about X-ray crystallography was previously disseminated via the first IUCr-UNESCO Rigaku Cambodia, supported by the IUCr, UNESCO, and Rigaku Corporation. This initiative took place in July 2014 at the Institute of Technology of Cambodia in the conjunction with the International Year of Crystallography 2014. However, only a limited number of participants were involved, including undergraduate and post graduate students from the Department of Geo-resources and Geotechnical Engineering, one government institution (The Ministry of Industry, Mining and Energy), and two private sector companies (one mining company and another from the cement industry). The practical training focused only on the powder diffraction technique using the X-ray diffractometer (MiniFlex II, Rigaku) installed at ITC in mid-2013.

The IUCr-UNESCO RigakuOpenLab Cambodia 2, was held on January 11-15, 2016, organized by the Department of Geo-resources and Geotechnical Engineering and supported by the IUCr, UNESCO and Rigaku in collaboration with the Institute of Technology of Cambodia. The initiative aimed to further disseminate and raise awareness of the importance of crystallographic education, which could benefit Cambodian society, to the public—especially to the top management of both academic and government institutions who could take part in policy-making decision.

More than 250 participants from various institutions participated as its representatives in the Opening Section (January 11, 2016), including UNESCO, Institute of Technology of Cambodia, International Union of Crystallography, Rigaku Corporation; from governmental institution such as Ministry of Education, Youth and Sport, Ministry of Industry and Handicraft, and Ministry of Environment; lecturers and students from public universities such as Department of Chemical Engineering and Food Technology/ITC, Department of Mechanical Engineering/ITC, Department of Chemistry/Royal University of Phnom Penh (RUPP), Department of Biology/RUPP, Department of Bioengineering/RUPP, and National Institute of Education; from private sectors such as Renaissance Minerals Limited (ministry industry), Kampot Cement (cement industry), and Cambodia Cement Chakrey Ting Factory (cement industry).



Opening Section of IUCr-UNESCO Rigaku OpenLab Cambodia 2

The Opening Section of IUCr-UNESCO RigakuOpenLab Cambodia 2 began on Monday, 11 January 2016. The ceremony was chaired by Dr. BUN Kim Ngun, deputy head of department of Geo-resources and Geotechnical Engineering and Coordinator of OpenLab Cambodia. Welcoming remarks and opening speeches were by Dr. Om Romny, General Director of ITC and Ms. Anne Lemaistre, UNESCO Representative in Cambodia, respectively. The Opening Section was followed a talk by Prof. Gautam R. Desiraju, Immediate Past President of the IUCr and Chair of 24th IUCr Congress and General Assembly (Hyderabad, 2017), Prof. Pinak Chakrabarti, President of the Asian Crystallographic Association, Mr. Taisuke Yoshiki, Representative of Rigaku Corporation, Dr. Michele Zema, Outreach officer at the International Union of Crystallography, Prof. Ian D. Williams, Hong Kong University of Science and Technology, and Dr. Serena C. Tarantino, University of Pavia, Italy. At the end of the morning section, there was an Open Discussion on “how can crystallography education contribute to Cambodian society through science and technology development,” which involved by all participants.

The Practical Section of IUCr-UNESCO RigakuOpenLab Cambodia 2 took place on 12-15 January 2016, with 30 participants. On January 12, lectures on the fundamentals of crystallography were provided by Prof. Pinak Chakrabarti, Prof. Ian D. Williams, Dr. Michele Zema, and Dr. Serena C. Tarantino. On January 13, lectures on fundamentals of X-ray diffraction and sample preparation and data acquisition of PXRD were provided by Mr. Yue Bing (Rigaku Corporation). On January 14, lectures on the fundamentals of X-ray fluorescence spectrometry, sample preparation (powder and bulk metal), and data acquisition and quantitative analysis were provided by Dr. Hisashi Homma (Rigaku Corporation). The final day of the OpenLab (January 15) featured hands-on training on

sample preparation of geological powder materials and metallurgical materials, data acquisition and evaluation of pressed pellet samples and bulk metal samples by Dr. Hisashi Homma.

At the end of the day, certificates were awarded to all participants at the closing ceremony of the OpenLab Cambodia 2 by Dr. BUN Kim Ngun. The participants were very enthusiastic about the OpenLab activity and this could promote the knowledge of crystallography in Cambodia.

Dr. BUN KimNgun

