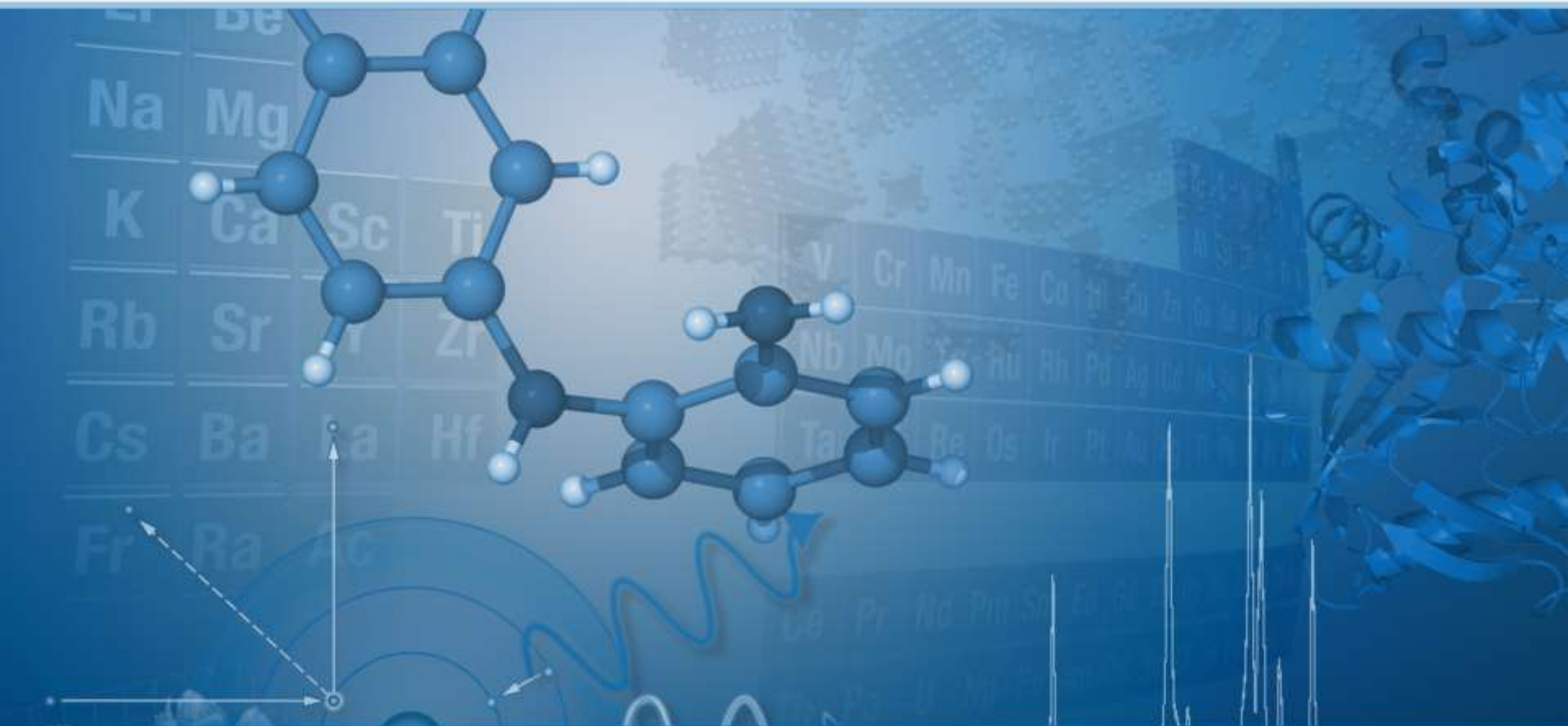


Crystallography for the next generation

Travelling labs initiative and other activities in Africa



G rard Fauvet



Crystallography for the next generation



Bruker proudly joined IYCr activities

Bruker enthusiastically supports the IYCr activities to increase public awareness of the science of crystallography through supporting meetings and conferences:

- **Young Crystallographers' activities**
In a number of countries very active groups of young crystallographers have formed or are forming because of IYCr activities. Bruker supported and will continue to support these activities by providing sponsorship and contributing with lectures or training at the events organized by IYCr.
- **Promoting interdisciplinarity**
We are convinced that the combined efforts of the global crystallographic community will demonstrate the importance of crystallography in most technological developments and increase interest in our interdisciplinary methods

Crystallography for the next generation



Bruker proudly joins IYCr activities

Bruker enthusiastically supports the IYCr activities to further increase knowledge about crystallography through supporting Open Labs and Travelling Labs:

- **OpenLab Initiative**

This initiative has been strongly influenced by the IUCr activities to propagate crystallography in the developing regions. Bruker customers opened and will open their laboratory, equipped with our state-of-art instruments. At these sites workshops and hands-on experiments for students and young professors will be on the agenda. Bruker facilitated contacts between the customers and the IUCr and will provide application support wherever required

- **TravellingLab Initiative : an instrument travelling all year**

As an additional, strong support of the IUCr's idea of bringing crystallography to countries with no or a very small installed base, Bruker is providing free-of-charge instrumentation temporarily to a number of sites through-out the entire year and more if necessary.

Crystallography for the next generation



OpenLab (system is on-site)

During the IYCr Bruker customers with state-of-the-art instrumentation will promote crystallography

Site	Type	Date
Karachi, Pakistan	Open Lab	Apr 30 - May 8
Montevideo, Uruguay	Open Lab, newly installed	July 23-31
Ho Chi Minh City, Vietnam	Open Lab	Dec 10 - 12
Constantine, Algeria	Open Lab	May 9 – 14, 2015
Abidjan, Ivory Coast	Open Lab	tbd
Delhi, India	Open Lab	tbd

Open Lab:

these events take place in research centers where crystallographic instrumentation is already operational.

Open Lab, newly installed:

new installations of crystallographic instrumentation, allowing creation of new crystallographic centers.

Crystallography for the next generation



OpenLab (travelling systems)

During the IYCr Bruker promotes crystallography with state-of-the-art instrumentation

Site	Type	Date
Rabat, Morocco	Travelling OpenLab	May 26 - 30
El Jadida, Morocco	Travelling OpenLab	June 9 - 11
Agadir, Morocco	Travelling OpenLab	June 16 - 20
Bandung, Indonesia	Travelling OpenLab	Aug 18-22
Grahamstown, South Africa	Travelling OpenLab	Apr/June 2015
Monastir, Tunisia	Travelling OpenLab	May 14 – 17 2015
Nabeul, Tunisia	Travelling OpenLab	May 20 – 23 2015

Travelling OpenLab: portable instruments will move through different locations and at each stop it will serve as the basis for a crystallographic school, including tutorials about the use of the instrument and related software.

Crystallography for the next generation



Smart X2S Single Crystal diffractometer

- Auto Crystal loading and centering
- Air-cooled APEX CCD detector
- Air-cooled Mo microsource
- Expert software for data collection
- Touch screen
- 'Autostructure' software



Crystallography for the next generation



D2 Phaser Powder diffractometer



- Fast desktop diffractometer
- Compact and mobile all-in-one instrument
- Theta-theta geometry w. spinner
- Standard X-tube w. integrated cooling device
- New DIFFRAC.SUITE software
- Optional Sample changer

Plug'n
Analyze™

Crystallography for the next generation



Travelling OpenLab Bandung



Bruker Open Lab - Indonesia (18 - 22 August 2014)



Bruker AXS, Chemistry Dept. of Institut Teknologi Bandung (ITB) and Chemistry Dept. of Universitas Negeri Malang collaborate to organize a workshop named Bruker Open Lab Indonesia in conjunction with the celebration of International Year of Crystallography 2014. It is officially endorsed by International Union of Crystallography (IUCr) and UNESCO with the purpose of promoting crystallography in Indonesia, covering crystallographic research and teaching.

Lectures:

 **Dr. Thanh-Ha Nguyen**
Product Support Manager SC-XRD
Bruker AXS Inc.

 **Prof. Effendy Ph.D**
Chemistry Department
Universitas Negeri Malang

 **Dr. Bambang Prijamboedi**
Chemistry Department
Institut Teknologi Bandung

Registration:
<http://goo.gl/ssYHzX>



**BRUKER
SMART X2S**

Venue: Institut Teknologi Bandung (Basic Science Center A)
Jl. Ganeca 10, Bandung.

Supported by:



Crystallography for the next generation



Travelling OpenLabs Rabat, Agadir and El Jadida

- the Moroccan Ass. of Cryst. was positively surprised by the 120 participants from Morocco, Algeria, Tunisia and other francophone regions of Africa
- they received 5 days of intense training on the concepts of crystallography
- prepare their samples and run them on the two Bruker diffractometers



Participants of the OpenLab in Rabat, Morocco
(picture courtesy of the IUCr)

Prof Abdelmalek Thalal,
President of the Association
Marocaine de Cristallographie:

- "This experience was a great success in Morocco and had a lot of echoes in Moroccan universities"
- "We would be very happy, if we could organize yet another OpenLab with Bruker later this year"

Crystallography for the next generation



OpenLab Montevideo



Crystallography for the next generation



Travelling OpenLabs Monastir & Nabeul



OpenLabs Tunisie Nabeul du 20 au 23 Mai 2015 « Diffraction X sur poudre et sur monocristal »

Animateurs

(A.D): Pr. Ahmed Driss; (H.B): Pr. Habib Boughzala; (T.R): Tarek Rhaiem; (K.B): Khalil Bouzazi

Horaire	Mercredi 20 mai	Jedi 21 mai	Vendredi 22 mai	Samedi 23 mai
8.30-9.00	Ouverture	Maille ; Groupe d'espace ;	Analyse Quantitative	Traitement des
9.00-9.30	Présentation	Résolution ; Affinement (A.D)	Rietveld (H.B)	diffractions des
9.30-10.00	Symétrie Cristalline &	Analyse Qualitative	Quantification de la phase	participants
10.00-10.30	Groupe d'Espace (H.B)	Bases de Données (H.B)	amorphe (H.B)	(H.B), (A.D), (T.R), (K.B)
10.30-11.00	Pause-Café	Pause-Café	Pause-Café	Pause-Café
11.00-11.30	La production des	Préparation du CIF	Exemple_1 (H.B) (K.B)	Même
11.30-12.00	rayons X (A.D)	Publif; CHECKCIF (H.B)	Pattern matching	programme
12.00-1400	Déjeuner	Déjeuner	Déjeuner	Déjeuner
14.00-14.30	La diffraction sur poudre	Résolution ; Affinement	Exemple_2 (H.B) (K.B)	Traitement des
14.30-15.00	(H.B)	Exemple 1 Org. (A.D) (T.R)	Quantification des phases	diffractions des
15.00-15.30	La diffraction sur	Résolution ; Affinement	Exemple_3 (H.B) (K.B)	participants
15.30-16.00	monocristal (A.D)	Exemple 2 Inorg. (A.D) (T.R)	Taux de substitution TS	(H.B), (A.D), (T.R), (K.B)
16.00-16.30	Pause-Café	Pause-Café	Pause-Café	Pause-Café
16.30-17.00	Bruker poudre	Résolution ; Affinement	Exemple_4 (H.B) (K.B)	Même
17.00-17.30	Bruker monocristal	Exemple 3 Hybride (A.D) (T.R)	TS & QPA	programme
17.30-18.00	Préparations	Préparations	Préparations	
18.00-19.00	Mesures	Mesures	Mesures	Clôture

Initiative in Africa



Cameroon newly installed equipment

- Bruker has supported IUCr's activities in Africa
- We were able to supply for free refurbished instrumentation to Dschang
- within the IYCr, Bruker will continue supporting and strengthening these activities; for example, we are ready to install 2 instruments in Abidjan



D5005 powder diffractometer installed in Dschang



Introductory training provided by Bruker

Initiative in Africa



Installed equipment in Tunisia

- Bruker supplied 3x SIEMENS D5000 Diffractometers free of charge



to:

- Faculty of Sciences SFAX (2009)
 - Prof. Abdelhamid Ben Salah
- University of Tunis El Manar - ISSBAT(2012)
 - prof. Rached Ben Hassen
- Faculty of Sciences GABES (2014)
 - prof. Kamel Khirouni & prof Sahbi Alaya

Initiative in Africa



Refurbished instruments

- SIEMENS D5000/D5005 Powder Diffractometers



Initiative in Africa



Refurbished instruments

- NONIUS KappaCCD Single Crystal Diffractometers

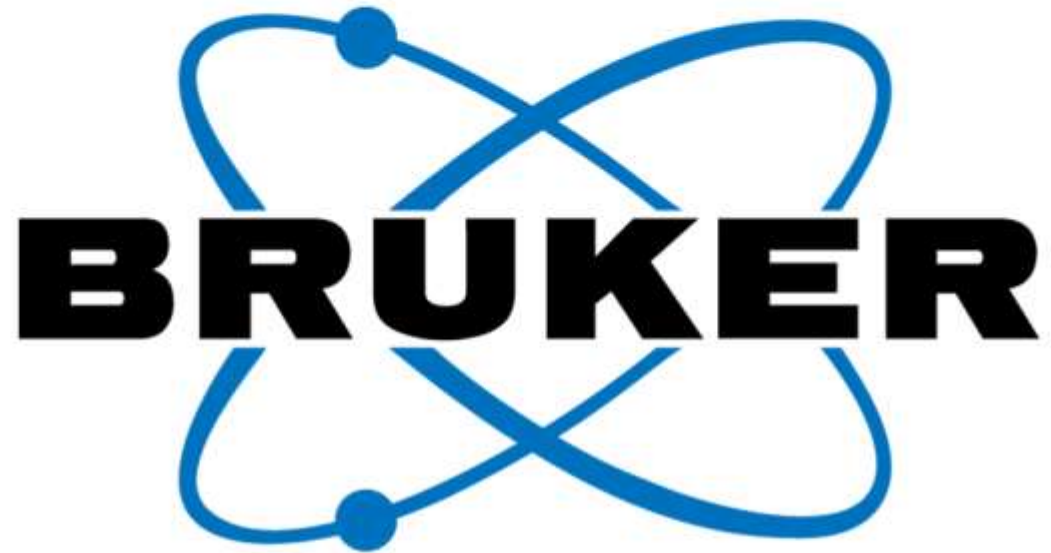


Initiative in Africa



Refurbished instruments

- Bruker will supply above instruments for free !
- IUCr could support transport & installation costs
- Fittings are to be arranged locally (ex power supply - UPS)
- Beneficiaries' participation is necessary for
 - New computers
 - New X-tube
 - Cryostat
 - Chiller
 - Eventual extra software licenses



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