

# OpenLabs in Ghana and Turkey

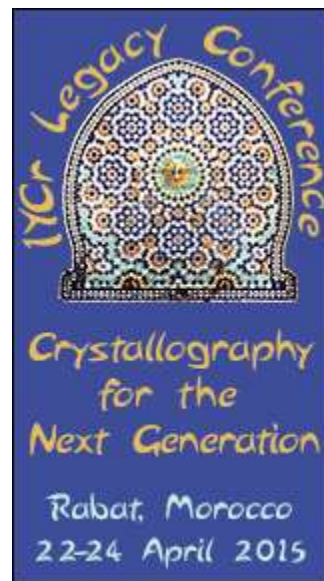
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Università di Padova



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Académie  
Hassan II  
des Sciences  
& Techniques





June 9-12, 2014

University of Ghana - Department of Physics

**UNIVERSITY OF GHANA - LEGON**



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**PANalytical**







❖ **IUCr *Initiative in Africa*** - 1999

- 2013 Bruker diffractometer at University of Dschang, Cameroon

❖ **Dakar School on Materials** (UCAD-UNITN) - 2005, 2009, 2012

- 2005 PANalytical installed a diffractometer at UCAD@Dakar

❖ **OpenLab Ghana** – 2014

- Working diffraction lab Dept. Physics@Accra

**"Building Science Capacity in Africa via Crystallography"**

ICSU Grant Programme 2015







<b>time</b>	<b>Mon 9 June</b>	<b>Tue 10 June</b>	<b>Wed 11 June</b>	<b>Thu 12 June</b>	<b>Fri 13 June</b>
<b>9.00-9.15</b>	<b>Welcome and introduction to IYCr2014</b>	<b>Questions and answers</b>	<b>Questions and answers</b>	<b>Questions and answers</b>	<b>Welcome to Ghana User day</b>
<b>9.15-11.00</b>	<b>X-ray physics – diffraction theory (Artioli)</b>	<b>Phase identification (Artioli)</b>	<b>Full profile refinement (Artioli)</b>	<b>Advanced applications (Artioli)</b>	<b>Ghana User day</b>
11.00-11.30	tea	tea	tea	tea	
<b>11.30-13.00</b>	<b>Powder diffraction (Artioli)</b>	<b>Experimental configurations – optics (Sommariva)</b>	<b>Quantitative analysis (Sommariva)</b>	<b>Mining – Mineral applications (Artioli)</b>	<b>Ghana User day</b>
13.00-14.00	lunch	lunch	lunch	lunch	lunch
<b>14.00-16.00</b>	<b>Sample preparation (Sommariva)</b>	<b>Powder data collection - practicals (Sommariva)</b>	<b>Hands on experience</b>	<b>Group exercises/ refinements</b>	<b>Ghana User day</b>
16.00-16.30	tea	tea	tea	tea	
<b>16.30-18.00</b>	<b>Introduction to software (Artioli)</b>	<b>Databases (Artioli)</b>	<b>Hands on experience</b>	<b>Group exercises/ refinements</b>	<b>Ghana User day and Conclusion</b>





- Aims:
  - Dissemination of crystallographic knowledge
  - Appropriate use of software
  - Creation of a centre for service activity
    - ❖ Data collection
    - ❖ Research developments

- **Extensive hands on laboratories**
  - data collection on the available instrumentation
  - demonstrations on data treatment and analysis
  
- All the attendees showed to be really eager to learn and the **participation was very interactive**. Highly positive feedback was expressed during the whole event about both the lectures and the practical sessions
  
- Issues:
  - **Free-software/databases availability** (A special effort was devoted during the OpenLab to present and operate freely available software, such as GSAS, and open access databases, such as COD)
  - **Maintenance of the instrumentation**



**January 19-22, 2015**

**Bilkent University - UNAM**



# unam

National Nanotechnology Research Center  
Institute of Materials Science and Nanotechnology



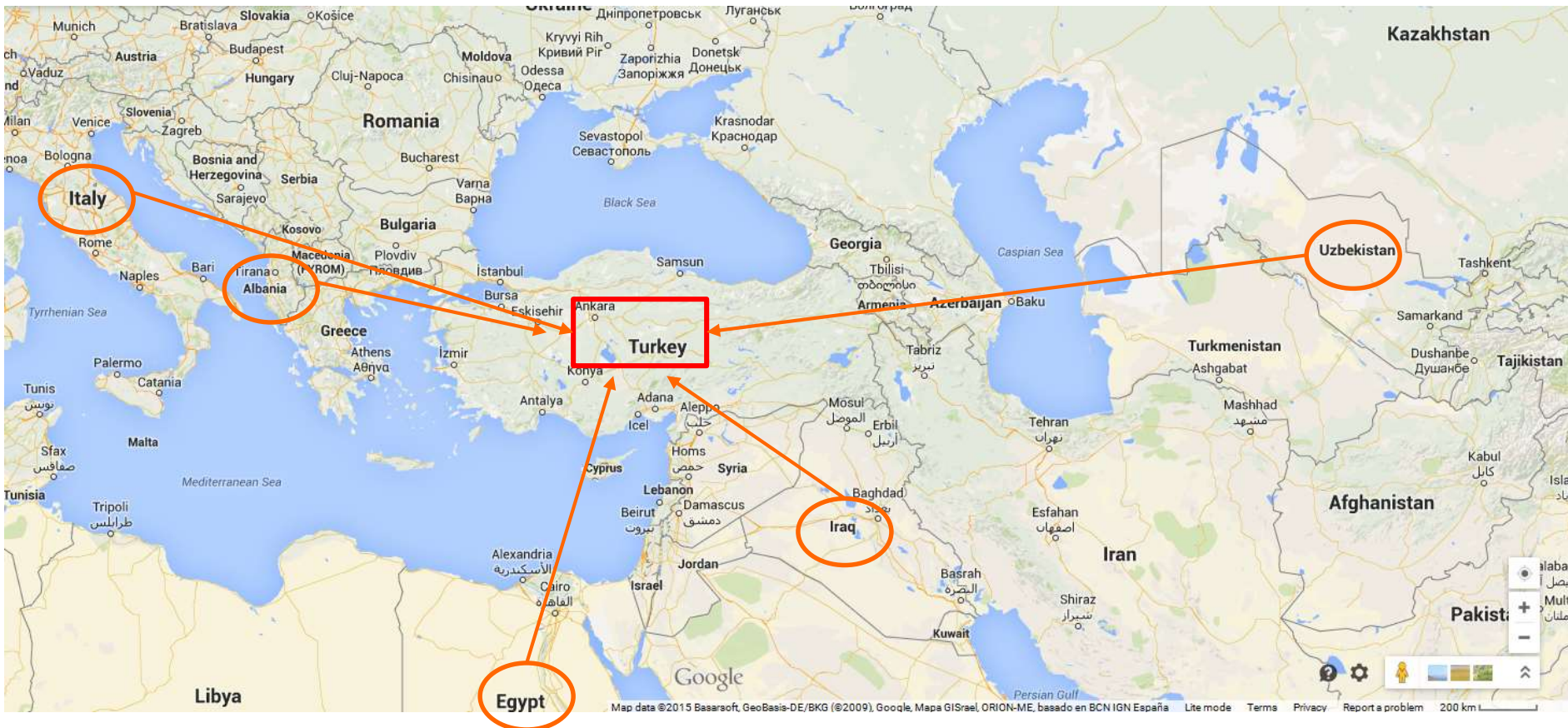
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150 applications → 30 participants







Time	Event
9:00-9:15	Questions and answers
9:15-11:00	Crystallography, diffraction and the cultural heritage (Prof. Artioli)
11:00-11:30	Coffee Break
11:30-12:00	Applications of XRD and XRF as Archaeometrical Methods on Historical Materials (Dr. Ali Akın Akyol)
12:00-12:30	Synthesis and Characterizations of Calcium Hydroxide Nanoparticles and Their Application as Deacidification Agents for Paper-Based Cultural Heritage (Dr. Ayşen Yılmaz)
12:30-13:00	Structure determination of disordered materials at ambient and extreme conditions: Pair distribution function analyses using x-ray scattering technique and Monte-Carlo simulation (Dr. Bora Kalkan)
13:00-14:00	Lunch
14:00-17:00	Excursion to Anotolian Civilization Museum







- There is a strong desire to consider the OpenLab as the **triggering event** for a regular and sustainable school for the Turkish (or even an enlarged) community
- The proposal from the local committee was to organize a **follow-up** hopefully lead by the Turkish Crystallographic Association, maybe transforming it in a periodic crystallographic **training event** with the auspices and support of IUCr
- The idea is to combine training in basic powder diffraction and selected advanced applications, possibly transforming the event in a periodic school to be held in different Turkish universities



2014



IYCr2014 Openlab Turkey

X-Ray Crystallography School

1st - 5th Sep 2014 / Izmir - TURKEY







# CRYSTR2015

Second Balkan School on Fundamental Crystallography and Workshop on Magnetic Symmetry  
13-19 July 2015, Istanbul Technical University Campus, Istanbul / Turkey

[Information on Registration & Practical Issues](#)

[Registration Form](#)

## ABOUT

The event is intended to teach the fundamentals of crystallography, starting from theoretical group theory and its applications in solid state, and magnetic symmetry.

# CRYSTR 2015

A workshop where the participants can apply the methods taught directly on their cases at hand as well as having the opportunity to present their work\* will go in parallel, as part of the school.

The school will be held in the Ayazaga campus of the Istanbul Technical University (ITU), Istanbul, Turkey.

*\* The works that will be presented are subject to referees' jurisdiction. Please use the template from the "Materials" section below to submit your abstract (both for oral and poster presentations).*



[bilbao crystallographic server](#)

TURERS

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**The purpose of the OpenLab project is manifold:**

- in threshold countries, the idea is to *encourage* the purchase of advanced instrumentation;
- in hub countries, the idea is to *increase* the technological base and spark interest in youngsters;
- in less privileged countries, the idea is to *start* some crystallographic activity.