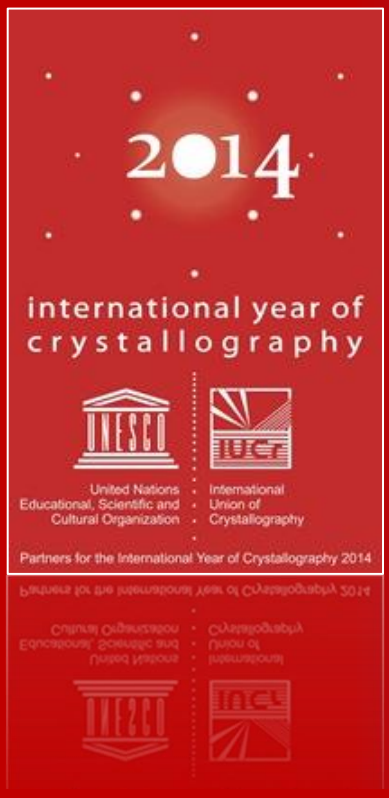

Pyrite fascinates by its plethora of forms. Join us to find out why they exist!

الجمعية الجيولوجية العمانية
Geological Society of Oman

The Departments of Applied Geosciences and Mathematics & Science of the German University of Technology in Oman (GUtech), supported by the Geological Society of Oman proudly present

Crystals, Forbidden Symmetries & Quasi-Crystals

Michaela Bernecker & Florian Rupp
together with
Students of Applied Geosciences at GUtech

Wednesday, 28th of May
Oil and Gas Exhibition Center

5:00 pm	Reception
5:15 pm	Introductory talk by Florian Rupp
5:45 pm	Special student talks
7:00 pm	Official opening of the exhibition

Abstract: The talks "Crystals, Symmetries and Quasi-Crystals" form the opening ceremony of an exhibition along with activities of the 2014 UNESCO year of crystallography at which we celebrate the 100th birthday of the awarding the Nobel Price in Physics to the deciphering of the inner structure of crystals due to X-ray diffraction.

In our talks, we highlight the main steps leading to today's understanding of crystalline structures and their symmetries by discussing the ground-breaking discoveries of the last centuries: Stenos Law, classifications of planar and spatial packings, and X-ray diffraction. In particular the role of symmetries is outlined and why only certain rotations are allowed in crystals and others are strictly forbidden, like 5-fold rotations. To the great surprise of the scientific community exactly such a forbidden 5-fold rotation symmetry was realized in an alloy crystal in the 1980s. We illustrate why this is possible and what further types of forbidden symmetries occur in crystalline structures now known as quasi-crystals. For solving the riddle of the quasi-crystals the 2011 Nobel Price in Chemistry was awarded.

Special talks by students of Applied Geosciences at GUtech dedicated to the deeper understanding of certain topics round up the evening, before the exhibition is officially opened.