

We are seeking a candidate with a PhD degree in Earth or Physical Sciences for a joint application to the Marie Curie Individual Fellowships Programme of the European Union (Marie Curie Programme website: [http://cordis.europa.eu/fp7/people/home\\_en.html](http://cordis.europa.eu/fp7/people/home_en.html)).

This programme provides fellowships for European (Intra-European Fellowships) and international (Incoming International Fellowships) researchers in a European country different from where they developed their recent work. Applications are submitted jointly between the candidate and the host institution.

The fellowship would provide a gross salary of approx. €84,000 to 56,000/year, depending on experience, plus mobility (relocation, family, etc.), travel and career exploratory allowances, as well as research funds. The research project would have a duration of 2 years. Fellows can apply for a Reintegration Grant to return to their own country at the end of their fellowship.

The next call will probably open in March 2010 and the deadline will be in August 2010.

I have hosted 3 fellows of the Intra-European Programme:

1) 2004-2005. Mechanism of smectite kaolinization via kaolinite-smectite (Dudek et al., 2006, *American Mineralogist* 91, 159; Cuadros & Dudek, 2006, *Clays and Clay Minerals* 54, 1; Dudek et al., 2007, *American Mineralogist* 92, 179-192; Cuadros & Wing-Dudek, 2007, *Clay Minerals* 42, 181-186; Cuadros et al., 2009, *Clays and Clay Minerals* 57, 742-750).

2) 2005-2007. Smectite dehydration (structure and kinetics) and the onset of smectite illitization (Ferrage et al., 2007, *American Mineralogist* 92, 994-1006; Ferrage et al., 2007, *American Mineralogist* 92, 1007-1017).

3) 2009-2011. Water chemistry and microbial activity influence on clay formation. In progress.

## THE PROJECT

Mg- and Fe-rich clays have been found to be very abundant on Mars. We are faced with the challenge of understanding the processes that generate them. The project is a study of clay minerals in the series talc to nontronite (i.e., end-members talc and nontronite, their mixed-layer minerals, and talc and nontronite with Mg-Fe substitutions) from submarine hydrothermal fields. The aim of the study is to identify the genetic relationship between the two minerals and their intermediates (environmental physico-chemical conditions and mineral crystal-chemistry), and to relate the findings to possible clay-formation scenarios on Mars.

The study involves collaboration with Dr. Vesselin Dekov (University of Sofia, Bulgaria, and IFREMER, France) who will contribute knowledge on submarine hydrothermal processes and Dr. Janice Bishop (SETI Institute and NASA-ARC, USA), contributing knowledge on clay on Mars. Thus, the project is interdisciplinary and will involve international collaboration.

## THE MINERALOGY DEPARTMENT AT THE NATURAL HISTORY MUSEUM

Our Department is a very dynamic environment, committed to high-quality research and recognized as such worldwide. The Department is equipped with complete up-to-date mineral and chemical analysis facilities (<http://www.nhm.ac.uk/research-curation/science-facilities/analytical-imaging/>).

The Natural History Museum is one of the European Union Large Scale Research Facilities.

## CONTACT

Anyone interested in this joint application please contact Javier Cuadros at the address below.

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