

Postdoctoral position in surface analysis and spectroscopic modelling of metal-organic frameworks and mesoporous metal phosphonate catalysts

The Electrochemical and Surface Engineering (SURF) and General Chemistry (AMGC) research groups of the Vrije Universiteit Brussel (VUB) and the Center for Membrane Separations, Adsorption, Catalysis, and Spectroscopy (cMACS, Ameloot group) of the Katholieke Universiteit Leuven (KUL) are looking for a highly motivated postdoctoral researcher in the field of theoretical modelling and spectroscopic analysis of catalyst materials, under the supervision of Prof. Tom Hauffman, prof. Rob Ameloot and Prof. Frederik Tielens for the Excellence of Science project **PHOSPHORE**.

Description

The central hypothesis of the **PHOSPHORE** project is that controlled (meso)porous metal phosphonates (PMP) synthesis conditions allow tuning the phosphonate-metal(IV) interactions for structural and property refinement, enabling their catalytic potential in biorefinery processes.

Therefore, it is of crucial importance that the synthesized materials are characterized with advanced surface analytical tools. Within PHOSPHORE, the focus will be on ToF-SIMS, XPS, UPS, infrared spectroscopy,... Furthermore, the spectroscopic data obtained should be verified and complemented by spectroscopic modelling.

You will work in three multidisciplinary and multicultural research groups, with people from all over the world, oriented to study surface science and electrochemical processes by combining both modelling and experimental approaches, with as main institution VUB. A close collaboration is present with KUL, representing the synthesis know-how of these metal-organic materials.

You will guide the PhD students present at both universities, combining the synthesis insights with spectroscopic and modelling data, representing the PHOSPHORE program the surface analytical expertise.

Requirements

- You hold PhD degree in chemistry, physics, materials science, or engineering.
- You are independent and highly motivated, quality-oriented, creative and cooperative
- You have experience in advanced surface characterization (XPS, SIMS, FESEM, ...) and spectroscopic modelling
- Language skills: excellent English (oral and written) is mandatory.
- Scientific communication skills: good at communicating orally and writing scientific results.

Benefits

- A postdoctoral position (100%) for a period of 3 years. Starting with a 1-year trial period.
- Challenging, dynamic and stimulating work in three internationally renowned research groups.
- State-of-the-art facilities and equipment.
- A multicultural and international work environment.

- An international network dealing with state-of-the-art research.

- Working and living in Brussels, the Capital of Europe, one of the most cosmopolitan cities of the world. A vibrant and charming city, which combines history, modernity, arts and gastronomy.

Contacts

Applications should be sent by email to tom.hauffman@vub.be, rob.ameloot@kuleuven.be and Frederik.tielens@vub.be and should include **a single pdf file** containing:

- a cover letter motivating the application and describing how the applicant meets the selection criteria
- a CV, including a list of academic grades and contact details of two persons who can provide a reference
- A sample of your previous scientific activities that most represent your skills (i.e., full text of first author peer-reviewed manuscript, copy of PhD thesis, etc.).

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