



One-year postdoc: Oxy-chalcogenides for photocatalytic applications

In the frame of the Z-project funded by the LABEX-IMUST at Lyon, a postdoc position is opened at IRCELYON and ILM in collaboration with MATEIS and LCH ENS Lyon. The present project intends to develop new chalcogenide-based compounds predicted by theory (DFT) for photocatalytic water splitting applications. Hence the Z-scheme principle will be explored by developing different heterostructures made by associations of promising compounds. The obtained materials will be fully characterized by different techniques available at the greater Lyon area: first from a structural point of view, then about their photogenerated charge dissociation ability and finally up to their photocatalytic activity. The recruited postdoc will have to develop new metal chalcogenides and oxochalcogenides heterostructures through a combination of solid-state reactions and colloidal synthesis. The new prepared materials then will undergo multi scale structural characterizations. In a second part, the successfully synthesized heterostructures will be explored further, by measuring their ability to separate photogenerated charge carriers using time-transient photoconductivity. Finally, the most promising heterostructures will be tested for photocatalytic water splitting.

Required skills

- Good skills in solid state synthesis and colloidal synthesis
- XRD diffraction analysis by single crystal and powder X-ray diffraction
- Optical measurements from absorbance to photoconductivity.
- Photocatalytic testing

Working context. This postdoc is a joint position between IRCELYON and iLM, with partners for DFT calculations (at LCH) and electron microscopy (at MATEIS). We expect good organization and management skills from the candidate.

Experiences

0 to 2 years experiences after PhD defense.

Starting date and salary

March 2023, around 2185 € net Income before taxes, health insurance included

IRCELYON is a restricted research area (ZRR) and the selected candidate needs to obtain a security clearance during the hiring process.

Contact:

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