



Post-doctoral position in Paris

***Ab initio* study of surface oxides formed upon steel oxidation**

Employer: Institut des NanoSciences de Paris (INSP), CNRS & Sorbonne Université

Duration: 12 months

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Within an ongoing collaboration between INSP and ArcelorMittal Maizières Research, the present project, supported by the ANR SURFOX, aims at exploring oxides formed on surfaces of modern advanced steel grades upon selective oxidation of strengthening elements, such as Si, Al, or Mn.

Particularly focused on the case of Al alloyed steels, and in close link with the UHV oxidation experiments performed at INSP, the principal goal is to decipher the microscopic mechanisms responsible for the complex structure of the alumina films which form at different low index surfaces of $\text{Fe}_{0.85}\text{Al}_{0.15}$, analyze their substrate-driven aspects, and predict their reactivity characteristics.

Applicants should hold a recent PhD degree, with a strong background in computational physics and/or chemistry, preferably oriented towards oxide surfaces and metal/oxide interfaces. The candidate is expected to have a good experience in (ab initio) atomistic calculations, in construction and structural optimization of superstructures. Expected to interact with both ArcelorMittal engineers and University researchers, the ability to efficiently prepare scientific documents (reports, publications) and presentations in English is essential.

The « Oxides in Low Dimensions » group at INSP brings together experimentalists and theoreticians with an internationally recognized expertise on the structure of oxide surfaces, thin films, and metal/oxide interfaces, and on the understanding their electronic, magnetic, adhesion, and reactivity properties.

More information: <http://www.insp.upmc.fr/-Oxydes-en-basses-dimensions-.html>