Post-doc position available in Marseille

The characterization of (i) the adsorption and desorption of reactant and product molecules (oxygen, hydrogen, CO, etc.) on metal nanoparticles (NPs), (ii) the dissolution of atomic species (carbon, hydrogen or oxygen) inside NPs and (iii) chemical reactions at NPs are of general importance in **heterogeneous model catalysis**. REACTIVITY is a project formed by our SPM/XPS group and the one of Prof. Michael Reichling (Universität Osnabrück, Germany), together with the theory group of Prof. Henrik Grönbeck at the Chalmers University (Sweden). It is supported by the French *Agence Nationale de la Recherche* (ANR) and the *Deutsche Forschungsgemeinschaft* (DFG). **The project's objective is** to study the three reactivity related phenomena from above (i-iii) directly at a single NP in dependence on the NP composition, size and shape as well as in dependence on the reactant and oxide support by **noncontact AFM** (nc-AFM) and in particular by **Kelvin probe force microscopy** (KPFM) under **ultra-high vacuum** (UHV) conditions. While nc-AFM will be used to reveal the surface structure and morphology determined by the size, shape, distribution and sintering of NPs, the task of KPFM will be to monitor the local electronic structure determined by changes in the NP's work function (WF) providing a quantitative measure for adsorbed/desorbed molecular species or dissolved atomic species in NPs.

We search a post-doc for 1½ years who is going to help us with our work at the CINaM institut in Marseille. Alongside nc-AFM and KPFM experiments, the candidate is partially charged with photoemission XPS experiments. The project foresees a collaboration with the group in Osnabrück and Göteborg. The position is funded by the ANR, with a salary being comparable to standard European post-doc salaries. The work shall start in September/October 2019.

The postdoc must have a Ph.D. degree and experiences in scanning probe microscopy like in STM, nc-AFM and KPFM. Mandatory are also experiences with UHV techniques. Knowledge of the English language is mandatory as well.

We offer an interesting work in the important field of heterogeneous catalysis and surface science with surface science techniques like STM, nc-AFM, KPFM and XPS/UPS. Our institute is located in a beautiful region of the Provence, offering many possibilities to enjoy nature and the Mediterranean Sea. Alongside French, we speak also English and German.- Requests with information about the candidate (CV, final grades, Ph.D. thesis, publications, etc.) should be addressed to:

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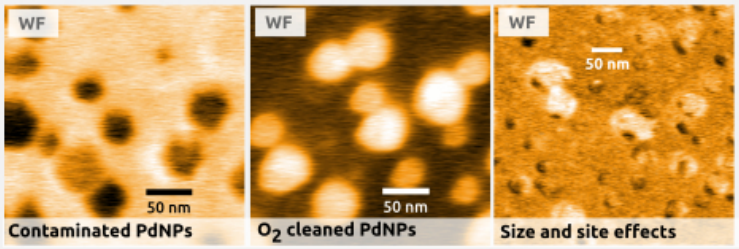

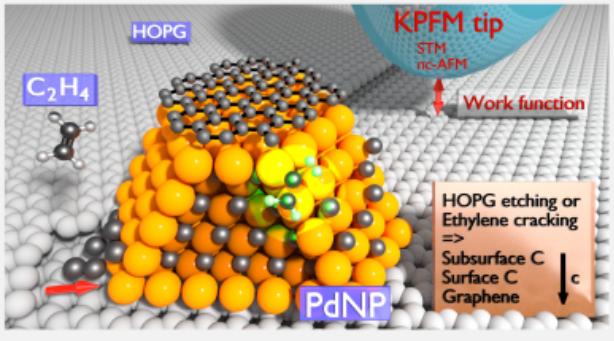

Literatur for further reading

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[3] G. Gasperi, P. Luches, C. Barth, *J. Phys. Chem. C* **122** (2018) 25954
[2] H. Grönbeck and C. Barth, *J. Phys. Chem. C* **123** (2019) 4360