Séminaire LIONS

Mercredi 9 juillet 2014 *à 11h00, bât. 127, salle 26*

! Salle inhabituelle ! Jour inhabituel !

Heterogeneous chemistry at liquid/solid and liquid /vapor interfaces under environmental conditions investigated by Near-Ambient Pressure XPS.

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The interaction of liquid water with gases or surfaces plays a major role in many processes of heterogeneous catalysis, electrochemistry, and environmental chemistry. Near Ambient Pressure X-ray Photoelectron Spectroscopy (NAP-XPS) is an excellent method for the investigation of the interfacial chemistry. In newly developed NAP-XPS setups, the work pressure in the analysis chamber is raised up to 20 mbar. In those conditions, not only solid/gas interfaces are investigable by NAP-XPS, but also liquid water/solid and vapor/ liquid interfaces.

I will present two illustrative examples relevant to environmental molecular chemistry. First, I will demonstrate that core-level XPS can monitor the hydration process of the interlayer counterions of swelling clays. Second, I will show how XPS reveals the ion segregation at the vapor/ liquid water interface of sodium halide solutions.