

Research Infrastructure

**QualityNano**

# Abstract Book

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#### 4.6. On the redox properties of Ag nanoparticles under simulated body conditions

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Metallic nanoobjects often demonstrate unique physical-chemical properties due to their dimension and large surface/volume ratio. Such changes are mostly linked with enhanced reactivity, which could explain their potential health effects [1]. It is thus inadequate to simply translate results obtained with bulk material for NPs. The redox chemistry of NPs and their modulation by different constituents of the exposed environment may be a very important point to know. Indeed, it is known for example that the redox chemistry of different elements present on ambient particle may alter the bioavailability and toxicity of these elements etc. The study of redox properties, corrosion behaviour, stability and life-time of nanometer metallic particles in aqueous solution is complicated due to the fact that their surface may be modified drastically depending on the conditions [2]. We have realized electrochemical/corrosion measurements on Ag NPs in saline solution and those doped with vitamine C. The effect of antioxidative effect in addition of vitamine C will be of interest. Our approach is attempt to assessment of dissolution rate of any metallic nanoparticles in aqueus system.

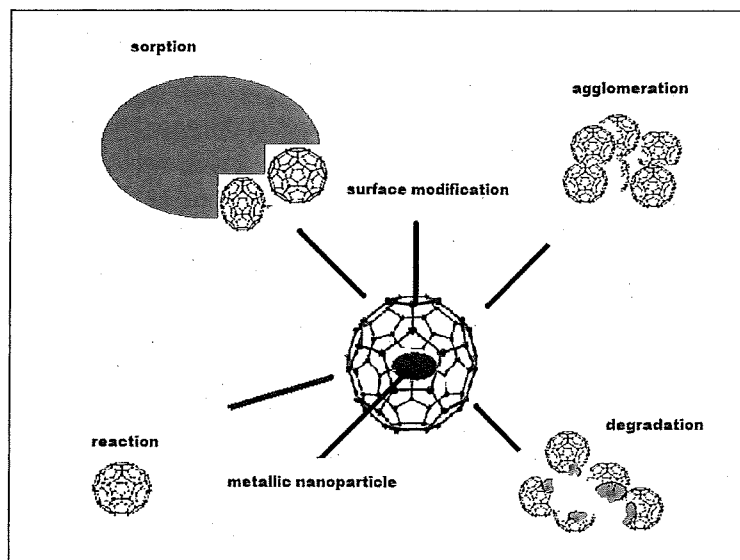


Figure 1: Possible interaction of metallic nanoparticles in bio-environment lead to change of their redox properties.

[1] Sauvain, J.J., Deslarzes S., Riediker M., 2008. *Nanotoxicology*, 2(3):121-129

[2] Halama M., Kladeková D., Gálová M., 2007. *Particulate Science and Technology*, 25(3):261-274