SEMINAIRE

Modulation of physical-chemical properties of metal semiconductors through the control of the parameters of microwave-assisted synthesis

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Lundi 18 septembre 2023 – 14h00
Amphithéâtre SOLEIL

The use of nanostructured metal semiconductors in (photo)(electro)catalytic processes has attracted attention in recent decades. Currently, the researchers are focused on the seek to enhance the catalytic efficiency of these materials. One of the outstanding strategies consists of preparing heterojunctions with other semiconductors (metal and/or organic) or plasmonic nanostructures. The success of this approach depends on the effectivity of the charge transference between the structures that form the heterojunction, an effect that is closely related to the nature and the thickness of the chemical species present at the interface. Thus, microwave-assisted synthesis methods are very attractive since the technique is based on the dielectric selective heating of the species present in the reactional media. This effect is observed in the surface of the materials due to its unique interaction with the microwaves. Consequently, using microwaves opens the possibility of obtaining heterojunctions whose interface composition can be modulated by the irradiation parameters used in the synthesis. In this talk, systems based on nanostructures of $BiVO_4$, $BiNbO_4$, $NaNbO_3$, Fe_2O_3, WO_3, ZnO, TiO_2, Au, Ag, Pt, graphene and carbon nitride, prepared through microwaveassisted techniques will be discussed. These materials are among the most investigated for application in energy conversion devices and organic catalysis nowadays. The correlation between the irradiation conditions and the physical-chemical properties of the resultant systems will be discussed, as its efficiency in specific applications.

Ce séminaire sera suivi d'une pause café

Formalités d'entrée : accès libre dans l'amphi du pavillon d'Accueil.
Si la manifestation a lieu dans le Grand Amphi SOLEIL du Bâtiment Central merci de vous munir d'une piece d'identité (à échanger à l'accueil contre un badge d'accès).

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