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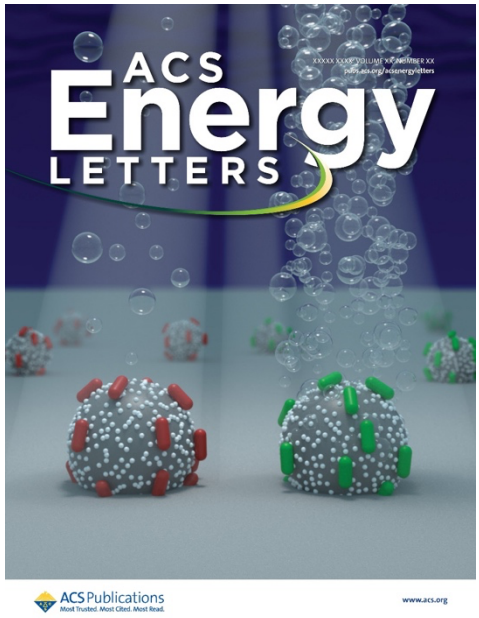

Institut : Chimie

Mot-clés (5 maximum) : (nano)materials synthesis, soft chemistry, catalysis, energy, plasmonics.

Paragraphe de présentation des thématiques (10 lignes maximum) :
Our research is mainly dedicated to the synthesis of inorganic functional materials with controlled compositions, crystal structures, textural properties, sizes and shapes using soft chemistry techniques. This includes the development of new synthetic methodologies, surface modification by ligands, studies of the reaction mechanisms and detailed (surface) characterization of the prepared materials. The goal is to design materials with improved performances for applications in various important technological fields such as (electro-, photo-)catalysis, magnetism, energetics and environmental remediation, to name a few. In the particular case of catalysis, which takes a prominent role in our group, the tight control over the morphological properties and surface functionalization of the nanocrystals obtained makes them ideal platforms for the evaluation of facet-dependent catalytic activity and selectivity.

5 publications récentes :
1. The origin of the high electrochemical activity of pseudo-amorphous iridium oxides, M. Elmaalouf et al., *Nat. Commun.* 2021, 12, 3935.
2. Introducing cobalt as a potential plasmonic candidate combining optical and magnetic functionalities within the same nanostructure, M. Braik et al., *Nanoscale*, 2021, 13, 2639.
3. One-Pot Seed-Mediated Growth of Co Nanoparticles by the Polyol Process: Unraveling the Heterogeneous Nucleation. R. Kumar Ramamoorthy et al., *Nano Lett*. 2019, 19, 12, 9160.
4. The polyol process: a unique method for easy access to metal nanoparticles with tailored sizes, shapes and compositions, F. Fiévet et al., *Chem. Soc. Rev.*, 2018, 47, 5187-5233.
5. Photophysical Effects behind the Efficiency of Hot Electron Injection in Plasmon-Assisted Catalysis: The Joint Role of Morphology and Composition, Y. Negrín-Montecelo et al., ACS Energy Letters, 2020, 5, 395.