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Mots-clés : Nanoélectrochemisty, Molecular electronics, Molecular plasmonics, surface functionalisation, smart surfaces

Paragraphe de présentation des thématiques (10 lignes maximum) :

Our current research activities are focused on molecular electronics and nanoelectrochemistry especially using redox and photoactive molecules. We fabricate atomic and molecular nanowires, functionalized and nanostructured surfaces. We study charge transport and charge transfer at the nanoscale, we develop and study molecular electronic devices of various types and various scales, from single molecule junction to large-area molecular junctions. We also develop molecular and nanoparticle actuators using electrochemical switching as the source of actuation and we use molecular plasmonics and active plasmonic devices in molecular electronics. Finally, we are also involved in scanning tunneling microscopy and on surface reactions.

5 publications récentes :

1: Unprecedented ON/OFF ratios in photoactive diarylethene-bisthienylbenzene molecular junctions, I. Hnid, D. Frath, S. Bellynck, F. Lafolet, X. Sun, J.-C. Lacroix, **Nano letters 2021**, 21, 18, 7555–7560

2: Plasmon-Induced Grafting in the Gap of Gold Nanoparticle Dimers for Plasmonic Molecular Junctions. Pierre Bleteau, Mathieu Bastide, Sarra Gam-Derouich, Pascal Martin, Romeo Bonnet, Jean-Christophe Lacroix.: **ACS Appl. Nano Mater. 2020,** 3, 7789−7794

3: Long-range charge transport in diazonium-based single-molecule junctions. Yao, X., Sun, X., Lafolet, F., & Lacroix, J. C. **Nano Letters.** 2020, 20 (9), 6899-6907

4: Highly Efficient Photoswitch in Diarylethene-Based Molecular Junctions Hnid, I., Frath, D., Lafolet, F., Sun, X., & Lacroix, J. C. **J. Am. Chem. Soc., 2020**, 142(17), 7732-7736.

5: Plasmon-Induced Nanolocalized Reduction of Diazonium Salts VQ Nguyen, Y Ai, P Martin, JC Lacroix **ACS Omega, 2017**, 2 (5), 1947-1955.