O 77: Overview Talk Guillaume Schull

Time: Friday 9:30–10:15 Location: S054

Invited Talk O 77.1 Fri 9:30 S054

Sub-molecular fluorescence microscopy with STM — •Guillaume Schull — IPCMS - CNRS/Unistra - Strasbourg

The electric current traversing the junction of a scanning tunneling microscope (STM) may lead to a local emission of light that can be used to generate sub-molecularly resolved fluorescence maps of individual molecules [1]. Combined with spectral selection and time-correlated measurements, this hyper-resolved fluorescence microscopy approach allowed us to scrutinise the vibronic structure of individual molecules [2] to characterise the emission properties of charged species [3], to track the motion of hydrogen atoms within free-base phthalocyanine molecules [4] and to follow energy transfers between multi-molecular architectures [5].

[1] A. Roslawska et al., PRX 12, 011012 (2022)
[2] B. Doppagne et al., PRL 118, 127401 (2017)
[3] B. Doppagne et al. Science, 361, 251 (2018)
[4] B. Doppagne et al. Nature Nanotechnol. 15, 207 (2020) .
[5] S. Cao et al. Nature Chem. 13, 766 (2021)