Molecular Plasmonics or how to control plasmons with molecules (and vice versa)

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Localized Surface Plasmons are collective electronic resonances sustained by metallic nanoparticles (MNP). These resonances are coupled to an intense electromagnetic field localized in the close vicinity of the nanoparticle. This phenomenon is highly sensitive to the MNP environment in a way that a very small change in the MNP surrounding refractive index can drastically change the spectral position of the resonance. That is why MNP are already used in commercial bio-sensors.
But there is other way to couple surface plasmons to molecules.
Indeed, molecules can also be used to map the plasmonic electromagnetic fields or to control the plasmonic resonance. That is the main subject of this seminar which will present the main activities in "Molecular Plasmonics" of the LNIO from the Technical University of Troyes.