

***Overview of Near Field Infrared Nanospectroscopy for biochemical applications:  
first results and future opportunities for SISSI users***

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In this contribution, we will present results of near-field infrared nanospectroscopy from samples that belong our users and collaborators, which had already been measured using conventional far-field approach. Nonetheless, even if the Synchrotron radiation (SR) microscopy experiments were successful, there were questions that remained unanswered, and, several times, we heard the phrase “it could be wonderful if we can also see this ...”. Requests often beyond what far-field measures can do.

Near-field infrared nanospectroscopy gives the opportunity to scientist to have the tools to start answering those questions, or fulfill those requests. Since the last year, we had the opportunity to perform experiments with nanospectroscopic systems, either in scattering or in thermal modes, coupled with SRs as well.

The experiments presented will deal more on life science, field to which most of our users of the Chemical and Life Sciences branchline of SISSI belong. We will present data on algae and bacteria, bio-mineralization products, human cells, thin films and monolayers of biomolecules and results of some plasmonic structures' measures.

Mind that, the aim of the talk is not to discuss which approach is better, whether, what the increase of the lateral resolution, achieved by laser or SR sources, to the nanometer scale can do for the better advance of science and better respond to the requests of scientific user community.