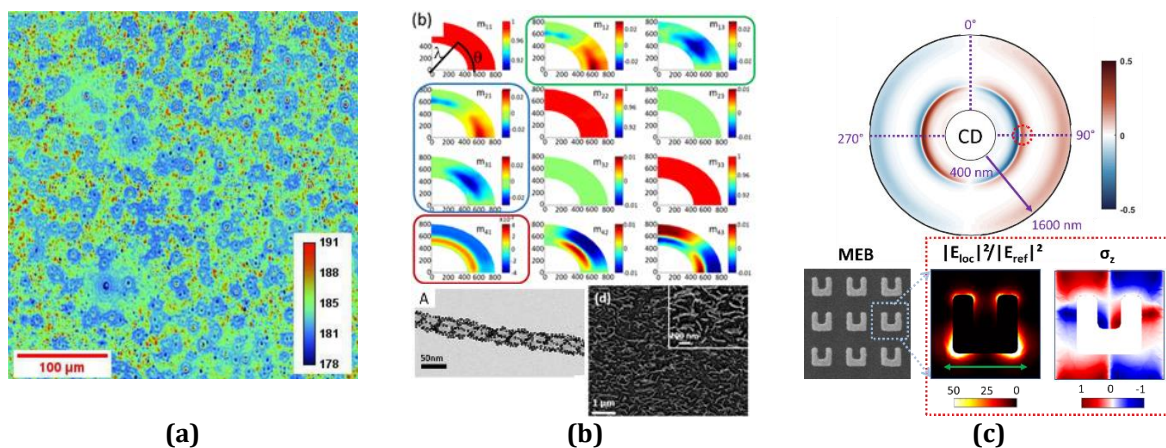


Optical Spectroscopies and Plasmonics

« Optical Spectroscopy applied to Plasmonic Nanostructures: Experiments and Modeling »

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This mini-colloquium is dedicated to the exploration of optical spectroscopies applied to plasmonic nanostructures. These nanostructures are known to exacerbate the interaction of light with matter at the nanometric scale, with numerous applications in nanophotonics, biology, catalysis, etc. The effects are relatively well known, opening up new perspectives in the fields of energy, light detection and emission. However, new possibilities are emerging, linked to the possibility of controlling other aspects of light: vector (angular or spin orbital momentum), polarization, magnetic field, coupled states, quantum effects... Optical spectroscopies are the natural means of probing these effects, but they require advances in terms of characterization, instrumentation and modeling.



(a) Local ellipsometric response (Δ) of an Au/PVA nanocomposite film (b) Azimuthal variations of the Mueller Matrix measured on a film of aligned silica nano-helices functionalized with gold nanoparticles (c) Circular dichroism of an achiral optically active metasurface and calculated local fields (intensity and ellipticity)

The topics covered will include

- Instrumentation: which instruments for which information, new instrumental techniques, limitations and solutions.
- Concepts: what optical, physical and chemical properties can be controlled using plasmonic nanostructures?
- Modeling: discussion of numerical methods, theoretical models, data analysis methods. Modeling to support measurements or initiate concepts?

The aim of this symposium is to discuss recent advances in experimentation and modeling, as well as potential applications in fields ranging from photonics to biology.