



Università degli Studi di Pavia
DIPARTIMENTO DI FISICA



Avviso di Seminario

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**(UN)CONVENTIONAL CHIRO-OPTICS:
EXPERIMENTS AND SIMULATIONS OF
NANOSTRUCTURES WITH ASYMMETRIC
PLASMONIC LAYERS**

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Abstract: Nanostructured plasmonic materials can be designed to tailor and enhance electromagnetic fields at the nanoscale, thus opening new perspectives in flat optics, nanoscale emitters, highly precise nanosensors etc. Moreover, asymmetric plasmonic layers break the symmetry of light-matter interaction, thus offering chiro-optical properties. We first show numerical approaches where the chirality at the nanoscale can be designed; we specially focus on designs that can be fabricated at low cost. For the characterization of chiro-optical behaviour, we use both conventional and unconventional characterization techniques. The first ones involve transmission/reflection measurements of the circularly polarized input or output, with oblique incidence and sample rotation degrees of freedom. However, for direct measurements of chirality-controlled absorption in nanostructures, we rely on unconventional characterization by means of photothermal effects.

Work done in collaboration with A. Belardini, G. Leahu, R. Li Voti, and C. Sibilia