

Light Absorption and Emission of Nanomaterials in Porous Photonic Structures

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In recent times, several synthetic pathways have been developed to create photonic structures materials of diverse composition that combine accessible porosity and optical properties of structural origin, i.e., not related to absorption. The technological potential of such porous optical materials has recently been demonstrated in various fields such as biological and chemical sensing, photovoltaics, or radiation shielding. In all cases, improved performance is achieved as a result of the added functionality porosity brings on. Also, they offer the possibility to study fundamental light absorption and emission phenomena in materials that could not be integrated in photonic structures before, as well as to develop environmentally responsive coatings with them. In this seminar, a unified picture of this emerging field is provided, special emphasis being put in the opportunities it offers in the fields of energy, sensing and radiation protection.

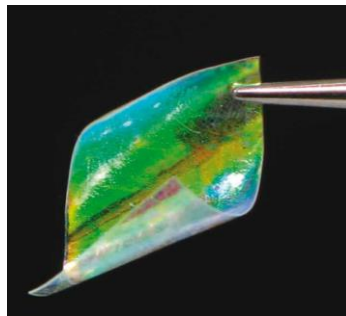


Image of a flexible Bragg mirror made by infiltrating a porous periodic multilayer with a biocompatible polymer.

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