Contribution ID : **28** Type : **Oral Presentation**

Dye Giant Absorption and Light Confinement Effects in Porous Bragg Microcavities

Tuesday, 14 August 2018 15:30 (15)

This work presents a simple experimental procedure to probe light confinement effects in photonic structures. Two types of porous 1D Bragg microcavities with two resonant peaks in the reflection gap were prepared by physical vapor deposition at oblique angle configurations and then infiltrated with dye solutions of increasing concentrations. The unusual position shift and intensity
drop of the transmitted resonant peak observed when it was scanned through the dye absorption band have been accounted for by the effect of the light trapped at their optical defect layer. An experimentally observed giant absorption of the dye molecules and a strong anomalous dispersion in the refractive index of the solution are claimed as the reasons for the observed variations in the microcavity resonant feature. Determining the giant absorption of infiltrated dye solutions is proposed as a general and simple methodology to experimentally assess light trapping effects in porous photonic structures

Primary author(s) : Dr YUBERO, Francisco (ICMS, CSIC)

Co-author(s) : Dr OLIVA-RAMIREZ, Manuel (ICMS, CSIC); Prof. GONZALEZ-ELIPE, Agustin R. (ICMS, CSIC)

Presenter(s) : Dr YUBERO, Francisco (ICMS, CSIC)

Session Classification : Speaker Sessions and Seminars

Track Classification : Surface Engineering