

# EXPERIMENTAL STUDY OF 3D SELF-ASSEMBLED PHOTONIC CRYSTALS AND COLLOIDAL CORE-SHELL SEMICONDUCTOR QUANTUM DOTS

Pham Thu Nga, Vu Duc Chinh, Nguyen Xuan Nghia, Nguyen Viet Huy, Dao Nguyen Thuan, Pham Thai Cuong, Chu Viet Ha, Do Thuy Chi, Nguyen Nhu Dat, Le Lan Anh, C. Bathou, P. Benalloul, A. Maitre, M. Romanelli

## TÓM TẮT:

In this contribution, we present an experimental study of 3D opal photonic crystals. The samples are opals constituted by colloidal silica spheres, realized with self-assembly technique. The spheres diameter is selected in order to obtain coupling of the photonic band gap with the emission from CdSe/ZnS colloidal quantum dots. Study of self-activated luminescence of the pure opals is also presented. It is shown that the luminescence of the sample with quantum dots have original QD emission and not due to the photonic crystal structure.