

Photonic Crystals for Reflection-Mode Microdisplays

양승만*

한국과학기술원 생명화학공학과

(smyang@kaist.ac.kr*)

In this talk, we will present the synthetic routes for photonic crystals with regular shapes and photonic molecules from self-organized colloidal clusters in confined geometries. The structure of a photonic crystal or a photonic molecule is affected by the interactions between the building blocks, which in turn determine the optical properties such as photonic band gaps, coherent coupling and normal mode splitting. We will briefly review the bandgap engineering for the structure-property relationship and introduce a few novel structures with complete, full photonic bandgaps. Then, various fabrication methods such as microfluidic devices, electrospray and DNA-assisted clustering will be discussed in detail. Finally, we will consider the fabrication of patterned photonic crystals for reflection-mode microdisplays or waveguides.