

Preparation and characterization of photonic crystals with three-dimensionally periodic structures. Xu, Lianbin; Li, Feng; Tung, Le Duc; Spinu, Leonard; Zhou, Weilie L.; Chen, Feng; Baughman, Ray H.; Zakhidov, Anvar A.; Wiley, John B. Department of Chemistry and Advanced Materials Research Institute, University of New Orleans, New Orleans, LA, USA. Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003), INOR-263. Publisher: American Chemical Society, Washington, D. C CODEN: 69DSA4 Conference; Meeting Abstract written in English. AN 2003:183307 CAPLUS (Copyright 2003 ACS)

Abstract

Template-directed methods have been used to prep. photonic crystals with three-dimensionally periodic structures. First, a variety of materials (such as metals and polymers) were infiltrated into the void space of colloid crystals (opals) by chem. or electrochem. approaches; subsequent dissoln. of the opal produced open three-dimensional mesh structures with nanoscale. The meshes can in turn act as a mold for the fabrication of three-dimensionally ordered nanosphere arrays. Details on the prepn. and characterization of these materials will be presented.