Title (en)

PHOTONIC BANDGAP MATERIALS BASED ON SILICON

Title (de)

PHOTONIC BANDGAP MATERIAL AUF SILIZIUM BASIS

Title (fr)

MATI RES DE BANDE INTERDITE PHOTONIQUE BASE DE SILICIUM

Publication

EP 1279053 A2 20030129 (EN)

Application

EP 01946910 A 20010124

Priority

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- US 17877300 P 20000128

Abstract (en)

[origin: WO0155484A2] Method of synthesis of photonic band gap (PBG) materials. The synthesis and characterization of high quality, very large scale, face centered cubic photonic band gap (PBG) materials consisting of pure silicon, exhibiting a complete three-dimensional PBG centered on a wavelength of 1.5 mu m. This is obtained by chemical vapor deposition and anchoring of disilane into a self-assembling silica opal template, wetting of a thick silicon layer on the interior surfaces of the template, and subsequent removal of the template. This achievement realizes a long standing goal in photonic materials and opens a new door for complete control of radiative emission from atoms and molecules, light localization and the integration of micron scale photonic devices into a three-dimensional all-optical micro-chip.

IPC 1-7

G02B 6/12; C30B 29/60; C04B 38/04; C08J 9/26; C01B 33/12

IPC 8 full level

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Citation (search report)

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Designated contracting state (EPC)

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