

Environmentally friendly approach for nonlithographic nanostructuring of materials

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Abstract

Self-organized quasi-ordered two-dimensional hexagonal arrays of pores with diameters as low as 70 nm in n-InP substrates subjected to anodic etching in aqueous solution of NaCl are reported. We show that proper periodic modulation of the applied potential with time allows one to reach 3D nanostructuring of the material. Anodization in salty water proves to be a cost-effective and environmentally-friendly tool for spatial nanostructuring of materials and nonlithographic manufacturing of semiconductor nanotemplates for nanofabrication.