

Single crystalline 2D porous arrays obtained by self organization in n-InP

**Langa S., Christophersen M., Carstensen J.,
Tiginyanu I. M., Föll H.**

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Abstract

Self organization is a rather common phenomenon during pore formation in III–V semiconductors. The so called tetrahedron-like pores, the domains of crystallographically oriented pores in n-GaAs, or the macroscopic voltage oscillations in n-InP at high constant current densities are examples of a self organization process. In this paper we will discuss two-dimensional arrays of pores in n-InP with the unique property that they may form a single crystal as a result of a self organization process. The reasons for this long range order and its dependence on the etching conditions will be discussed.