



2003, Volume 15, Nr. 3, pag. 183-198

Pores in III–V Semiconductors

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

<https://doi.org/10.1002/adma.200390043>

Abstract

Abstract The paper reviews electrochemically etched pores in III–V compound semiconductors (GaP, InP, GaAs) with emphasis on nucleation and formation mechanisms, pore geometries and morphologies, and to several instances of self-organization. Self-organization issues include the formation of single-crystalline two-dimensional hexagonal arrays of pores with lattice constants as small as 100 nm found in InP, synchronized and unsynchronized diameter oscillations coupled to current and voltage oscillations, and pore domain formation. The findings are discussed in relation to pores observed in silicon. Some novel properties of the porous layers obtained in III–V compounds are briefly described.