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Formation of Tetrahedron-Like Pores during Anodic Etching of (100) Oriented n-GaAs

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Abstract

The morphology of porous layers obtained by electrochemical etching of (100) oriented n-GaAs substrates in an aqueous solution of HCl was studied. At low anodic current densities, up to 5 mA/cm², pores in the form of triangular prisms grew along 111 crystallographic directions. For larger current densities the shape of the pores did not suffer any changes at the beginning of the process, while after a definite period of time the morphology of pores changed drastically to chains of tetrahedral voids with {111} facets.