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Time resolved blue and ultraviolet photoluminescence in porous GaP

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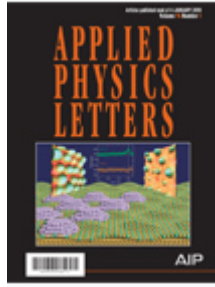
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Abstract

Porous GaP layers prepared by electrochemical anodization of (100)-oriented bulk material was found to exhibit blue and ultraviolet photoluminescence when excited by a KrF excimer laser. The energy position of the UV luminescence band (3.3 eV at 300 K) is explained on the basis of charge carrier confinement in crystalline quantum wires of about 25 Å in diameter. Additional evidence for quantum size effect in porous GaP was obtained by Raman scattering measurements.

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