

MODIFICATION OF OPTICAL PROPERTIES  
OF POROUS A<sup>III</sup>B<sup>V</sup> LAYERS PRODUCED  
BY ANODIC ETCHING

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S u m m a r y

Morphology investigations (atomic force microscopy (AFM) and scanning electron microscopy (SEM)), study of Raman scattering (RS) and photoluminescence (PL) have been performed to characterize a series of A<sup>III</sup>B<sup>V</sup> materials (GaAs, GaP, InP) with an electrochemically prepared porous surface layer. It has been shown that the surface morphology of porous A<sup>III</sup>B<sup>V</sup> compounds strongly depends on various parameters of the anodization process such as the etching time, current density, composition of etching solution, and illumination during the etching procedure. The enhancement of a Raman signal from porous surfaces, which has been observed for almost all samples, is caused mainly by the breaking of selection rules for corresponding phonon modes and a decrease of the reflection at the porous surface. The peculiarities of the PL spectra of porous A<sup>III</sup>B<sup>V</sup> compounds are studied in a wide temperature range. The small quantum confinement effect has been observed for GaAs and InP porous surfaces.