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Title:Spectrally resolved cathodoluminescence imaging study of periodic [001]/[00-1] GaAs structures for nonlinear optical conversion
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Abstract:Orientation patterned (OP)-GaAs crystals are very promising as nonlinear optical materials. They are suitable for mid-infrared and terahertz laser sources, by frequency conversion of shorter wavelength pump sources. OP-GaAs crystals must contain low concentrations of defects and must be homogeneous to reduce fluctuations, in the refractive index and the concomitant optical propagation losses. Understanding of the defects with electrooptic signature is crucial to improve the growth conditions for reducing their presence. Spectrally resolved cathodoluminescence imaging is used to study the main defects and how they are distributed throughout the OP-GaAs crystal. © 2012 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.
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Controlled terms:Cathodoluminescence - Crystal defects - Crystal orientation - Gallium arsenide - Imaging systems - Infrared lasers - Refractive index
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