



Optica Applicata 2005(Vol.35), No.3, pp. 549-554

## Influence of materials grain structure on the performance of optoelectronic devices

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### Keywords

light beam induced current (LBIC), grain structure, AlGaIn MSM, polycrystalline solar cells

### Abstract

The influence of grain structure of materials on optoelectronic devices performance was examined by light beam induced current (LBIC) technique. AlGaIn metal-semiconductor-metal (MSM) detectors and polycrystalline silicon solar cells were examined. In case of AlGaIn MSM structures, the effective region of carrier collection of contact electrodes was estimated as hundreds of nanometers. For these structures, the regions, where measured signals were two orders of magnitude larger than the average signal, were also observed. Measurements of polycrystalline solar cells allow us to determine the recombination activity of grain boundaries. LBIC method was applied to investigate layers quality used for MSM detectors and solar cells fabrication.



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