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Cathodoluminescence and computer graphics in materials science

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Abstract

The combination of cathodoluminescence (CL) in scanning electron microscopy (SEM) with computer graphics is proposed for studying semiconductors and dielectric materials. Spatial distribution of several types of defects that occurred naturally and by design in crystals, can be sorted out and visualized in CL mapping and in three-dimensional images reconstructed in scanning cathodoluminescence microscopy. The possibilities of this method are illustrated on magnesium oxide single crystals indented with a Vickers diamond pyramid.

Keywords: *semiconductors, dielectric materials, cathodoluminescence, scanning electron microscopy, magnesium oxide single crystals*

Citing Literature

1. Jens Götze, Hans-Peter Schertl, Rolf D. Neuser, Ulf Kempe, John M. Hanchar, Optical microscope-cathodoluminescence (OM–CL) imaging as a powerful tool to reveal internal textures of minerals, Mineralogy and Petrology, 10.1007/s00710-012-0256-0, **107**, 3, (373-392), (2012).
Crossref
2. Lutz Nasdala, Jens Götze, John M. Hanchar, Michael Gaft, Matthias R. Krbetschek, Luminescence techniques in Earth Sciences, Spectroscopic methods in mineralogy, 10.1180/EMU-notes.6, (43-91), (2004).
Crossref
3. M.V. Nazarov, T.A. Nazarova, undefined, 1995 International Semiconductor Conference. CAS '95 Proceedings, 10.1109/SMICND.1995.494892, (179-182), (1995).
Crossref