



# Exciton polariton spectra and carrier effective masses in ZnO single crystals

N. N. Syrbu, I. M. Tiginyanu, V. V. Zalamai, V. V. Ursaki, E. V. Rusu

<https://doi.org/10.1016/j.physb.2004.09.007>

## Abstract

Photorefectivity and photoluminescence spectra in the region of exciton resonance were measured in ZnO single crystals. A, B, and C exciton binding energies were determined from the energy position of the ground and excited exciton states. Electron and hole effective masses were determined from the fitting of the reflectivity contour to the experimental spectrum. Electron effective masses correlating with those deduced from cyclotron resonance experiments are obtained, provided that values of the background dielectric constant from 6.2 to 6.8 are used.