

165. Title: Bulk and surface field-induced optical rectification from (11N) zincblende crystals in a quasireflection geometry

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Abstract: In a previous article, we presented a generalized expression for second-order bulk and third-order surface-field-induced optical rectification for zincblende (4) over bar 3m crystal faces with arbitrary Miller indices (hkl) along with experimental data for (11N)A and (11N)B GaAs in transmission geometry. We now expand the results to quasireflection geometry, with angles of incidence and detection of 45 degrees. While this geometry introduces a p-polarized signal component due to mechanisms other than optical rectification, such as photocarrier acceleration by the surface depletion field, the azimuthal angle dependence of the optical rectification component yields further insight into the crystallographic orientation and surface properties of the sample.