

Abstract Submitted  
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**Hole-channel conductivity in epitaxial graphene determined by terahertz optical Hall-effect and midinfrared ellipsometry**<sup>1</sup> T. HOFMANN, A. BOOSALIS, P. KÜHNE, University of Nebraska-Lincoln, J.L. TEDESCO, D.K. GASKILL, U.S. Naval Research Laboratory, C.M. HERZINGER, J.A. Woollam Co. Inc., Lincoln, NE, J.A. WOOLLAM, M. SCHUBERT, University of Nebraska-Lincoln — We report non-contact, optical determination of free-charge carrier mobility, sheet density, and effective mass parameters in epitaxial graphene at room temperature using terahertz and midinfrared ellipsometry and optical Hall-effect (generalized ellipsometry in magnetic fields) measurements. The graphene layers are grown on Si- and C-terminated semi-insulating 6H silicon carbide polar surfaces. Data analysis using classical Drude functions and multilayer modeling render the existence of a *p*-type channel with different sheet densities and effective mass parameters for the two polar surfaces. The optically obtained parameters are in excellent agreement with results from electrical Hall effect measurements.

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