

Abstract Submitted
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Transport Properties of Low Temperature Deposited Boron Carbide¹ CHAD CLAYTON, M. SKY DRIVER, SAAD JANJUA, SUDARSHAN KARKI, University of Missouri Kansas City, JOSEPH SANDSTROM, North Dakota State University, ANTHONY CARUSO, University of Missouri Kansas City — Amorphous $B_xC:H_y$ ($x \sim 4.5$, $y \sim 2$) is an important radiation hard semiconductor with little known about its electrical transport character. To move forward in using these materials systems, systematic carrier mobility and lifetimes need to be determined. This talk will present Hall transport measurements of thin film B_4C and $B_5C:H_x$, as a function of various pre-growth and post-growth sample preparation conditions. Specifically, we have found that as deposited $B_5C:H_y$ films yield hole and electron concentrations near $1E^{18}/cm^3$ resulting in a low mobility and ill defined majority carrier while the B_4C films are dominant in their hole majority carrier at $1E^{17}/cm^3$.

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