Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Fundamental Study of Boron Carbide Sputtering SUDARSHAN KARKI, DAE YEOUN, SAAD JANJUA, MARCUS DRIVER, ANTHONY CARUSO, University of Missouri Kansas City — Boron-rich carbides belong to a special class of solids whose main structural unit is the twelve atom icosahedra. When depositing thin films of boron carbide (nominally B_4C) by RF or pulsed DC magnetron sputtering, the individual sputtered or ablated cluster size and the temperature of the substrate to which the clusters adsorb to form the film, greatly affects the bulk film physical and electronic structure. This talk will present mass spectrometry data of the target clusters as a function of RF power, DC bias and chamber pressure toward the goal of modeling and understanding how the icosahedral based boron-rich materials sputter and the resultant control over the final film properties. Argon trapped into the film during the deposition as determined by X-Ray photoemission will also be discussed.

Sudarshan Karki
University of Missouri Kansas City

Date submitted: 28 Nov 2008 Electronic form version 1.4