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Publication Date

2003-02-24

Open questions in electronic sputtering of solids by slow, very highly charged ions

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The database for charge state dependent sputtering in the interaction of slow (<5 keV/u) ions with solids is still sparse, compared to the comprehensive data base for collisional sputtering yields. We will review the currently available data with respect to fundamental questions (i. e., electronic sputtering of semiconductors and metals as compared to insulators) and with respect to applications where reliable data are needed. The latter include assessment of static dose limits in surface analysis with highly charged ions, damage during highly charged ion implantation of semiconductors, and the recently emerging problem of critical component erosion by multiply charged xenon ions from laser produced plasmas and gas discharges in high power EUV sources.

Acknowledgments

This work was supported by the National Security Agency (NSA) and Advanced Research and Development Activity (ARDA) under Army Research Office (ARO) contract number MOD707501, and by the U. S. Department of Energy under Contract No. DE-AC03-76SF00098.

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