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Molybdenum and Carbon Cluster Angular Sputtering Distributions Under Low Energy Xenon Ion Bombardment EIDER OYARZA-BAL, JONATHAN YU, RUSS DOERNER, JEREMY HANNA, GEORGE TYNAN, KURT TAYLOR, KLAUS SCHMID, UCSD — Molybdenum and carbon cluster (C₂ and C_3) angular sputtering distributions are measured during xenon ion bombardment from a plasma, with incident ion energy from $E_{Xe}=50$ to 225 eV. A quadrupole mass spectrometer (QMS) is used to detect the fraction of sputtered neutrals that is ionized in the plasma, and to obtain the angular distribution by changing the angle between the target and the QMS aperture. The angular sputtering distribution for molybdenum presents a maximum at 60 $^{\circ}$ with respect to the target normal. The dependence of the total sputtering yield on incident ion energy is in good agreement with previous experiments. Interestingly, for carbon, the angular distribution of the sputtered C_2 and C_3 clusters depends on the energy with which they are ejected. The low energy population of sputtered particles has a broad maximum at 45° , while the high energy population has a sharp maximum at 60° . The maximum for the entire population of sputtered clusters occurs at about $45-60^{\circ}$.

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