Abstract Submitted for the DPP05 Meeting of The American Physical Society

Evaluation of liquid Sn as a plasma-facing component: Sputtering yield measurements MATTHEW COVENTRY, Plasma-Material Interaction Group, University of Illinois at Urbana-Champaign, DAVID RUZIC — Flowing liquid metal surfaces are being considered for divertor or first wall use as PFC's in reactor-level magnetic fusion machines primarily to obviate the need for periodic PFC replacement due to erosion. The use of Sn allows a high operating temperature due to its low vapor pressure and a liquid Sn divertor or first-wall looks promising from an erosion/redeposition standpoint if its self-sputtering yields do not strongly increase with temperature. Sn has exhibited temperature enhancement sputtering under low energy light ion beam bombardment, but not with heavy ions for the same energies and up to  $380^{\circ}$ C. The Ion-surface InterAction eXperiment (IIAX) has recently been upgraded for high target temperature  $(> 1000^{\circ}C)$  operation and has been used to measure the sputtering yield of liquid Sn under low energy ion beams at  $45^{\circ}$  incidence. The sputtering yields are measured using a monoenergetic ion beam to bombard the target and dual quartz-crystal microbalances (QCM's) to directly monitor the amount of sputtered material. The yields and effect on the overall operating temperature limit are discussed.

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Date submitted: 20 Jul 2005

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