

Abstract Submitted  
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**Secondary Electron Emission of Li and Li Compounds**<sup>1</sup> ANGELA CAPECE, Princeton Plasma Physics Laboratory, MARLENE PATINO, University of California, Los Angeles, YEVGENY RAITSES, Princeton Plasma Physics Laboratory, BRUCE KOEL, Princeton University — Secondary electron emission (SEE) results from bombardment by charged particles and can adversely affect plasma stability and alter the plasma-wall interactions in tokamaks and other plasma devices. We present measurements of the SEE yield and the electron energy distribution function for Li and Li compounds using a retarding field analyzer in ultrahigh vacuum. These results are important for proper modeling of the edge plasma in the divertor region of tokamaks using Li coatings. Previous studies<sup>2,3</sup> have reported Li yields for energies up to 900 eV and have shown that yield values are sensitive to surface composition and can vary by as much as an order of magnitude for some energies. We extend our measurements to provide SEE yield curves for energies up to 5 keV—a range relevant for tokamaks. The effect of Li composition on SEE yield was determined by introducing O<sub>2</sub> or H<sub>2</sub>O vapor during Li film growth in order to obtain uniform films of Li<sub>2</sub>O or LiOH, respectively. Auger electron spectroscopy (AES) was used to probe the surface composition during measurements, and the results show that SEE yields are highest for Li with water contamination.

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<sup>2</sup>H. Bruining and J. H. De Boer, *Physica* 5 (1938) 17.

<sup>3</sup>E. Oyarzabal et al., *J. Nucl. Mater.* 452 (2014) 37.

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