

Abstract Submitted  
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**Optical and Transport Properties of SnZrCh<sub>3</sub> (Ch = S, Se)<sup>1</sup>**

DANIEL HARADA, Department of Physics, Oregon State University, Corvallis, OR 97331, ANNETTE RICHARD, Department of Chemistry, Oregon State University, Corvallis, OR 97331, ANDRIY ZAKUTAYEV, Department of Physics, Oregon State University, Corvallis, OR 97331, DOUG KESZLER, Department of Chemistry, Oregon State University, Corvallis, OR 97331, JANET TATE, Department of Physics, Oregon State University, Corvallis, OR 97331 — SnZrS<sub>3</sub> is a semiconductor that crystallizes in the NH<sub>4</sub>CdCl<sub>3</sub> crystal structure. It is studied as a possible solar cell absorber. We report on the synthesis and transport properties of SnZrS<sub>3</sub> and isostructural SnZrSe<sub>3</sub>. The optical band gaps are measured by diffuse reflectance, a gap of 1.5 eV is found for SnZrS<sub>3</sub>. Seebeck measurements indicate that both SnZrS<sub>3</sub> and SnZrSe<sub>3</sub> are p-type semiconductors at room temperature. The measured resistivity for SnZrS<sub>3</sub> is 36 Mohm cm, and for SnZrSe<sub>3</sub> it is 1 Mohm cm.

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