

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Imaging potential energy landscapes with quantum dots** LAURA KINNISCHTZKE, NICK VAMIVAKAS, University of Rochester — Electric and magnetic field control of InAs quantum dots has been leveraged for sensing in recent years. Self-assembled quantum dots have been used for charge sensing, magnetometry, and thermometry.<sup>1,2,3</sup> We extend this sensing platform to measuring potential landscapes in proximal metals using a charge-tunable quantum dot device architecture. The voltage profile is extracted by identifying variations in the charging plateau through non-resonant photoluminescence spectroscopy, and compared with finite element analysis simulations.

<sup>1</sup>A. N. Vamivakas et. al., *Phy. Rev. Lett.*, 107, 166802 (2011)

<sup>2</sup>F. Haupt et. al., *Phy. Rev. Applied*, 2, 024001 (2014)

<sup>3</sup>F. Seilmeier et. al. *Phy. Rev. Applied*, 2, 024002 (2014)

Laura Kinnischtzke  
University of Rochester

Date submitted: 11 Nov 2016

Electronic form version 1.4