

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Screening effect on the polaron by surface plasmons¹ XIAOYING XU, XIAOSHAN XU, Oak Ridge National Lab, KATYAYANI SEAL, HANGWEN GUO, Oak Ridge National Lab; The University of Tennessee, JIAN SHEN, Fudan University; The University of Tennessee, LOW DIMENSIONAL MATERIALS PHYSICS, OAK RIDGE NATIONAL LAB TEAM, THE UNIVERSITY OF TENNESSEE TEAM, PHYSICS DEPARTMENT, FUDAN UNIVERSITY TEAM — Surface plasmons occur when the conduction electrons at a metal/dielectric interface resonantly interact with external electromagnetic fields. While surface plasmons in vicinity of a polaron in the dielectric material, a strong screening effect on polaron characteristics is introduced. In this work, we observed the reduction of polarons in multiferroic LuFe₂O₄, which is mainly contributed by surface plasmons.

¹Research sponsored by the Laboratory Directed Research and Development Program of Oak Ridge National Laboratory, managed by UT-Battelle, LLC, for the U. S. Department of Energy.

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Date submitted: 19 Nov 2010

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