

Abstract for an Invited Paper
for the MAR09 Meeting of
The American Physical Society

Pulsed-Laser Deposition of ZnO Thin Films and Heterostructures for Device Applications

DAVID NORTON, University of Florida

ZnO is a wide bandgap semiconductor being explored for transparent electronics, UV light emitting diodes, spin-based devices and chemical sensors. In this talk, we will discuss recent progress and understanding for carrier doping and interface formation in epitaxial ZnO thin films grown by pulsed-laser deposition. One of the critical issues for device applications is the formation of low resistivity, high carrier density p-type ZnO material for minority carrier injection. The behavior of acceptor dopants within the ZnO and ZnMgO matrices will be described. Discussion will include stability of transport properties, stabilization of surfaces, and device characteristics.