Abstract Submitted
for the TSF09 Meeting of
The American Physical Society

Wide-Field Microscopy Based on Leakage of Plasmon-Coupled Fluorescence JACOB AJIMO, Department of Physics, Texas Tech University, STEPHEN P. FRISBIE, Department of Electrical and Computer Engineering, Texas Tech University, ANANTH KRISHNAN, CATHERINE CHESTNUTT, ALEX A. BERNUSSI, LUIS GRAVE DE PERALTA, DEPARTMENT OF PHYSICS, TEXAS TECH UNIVERSITY TEAM, DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING TEAM — Recent developments in wide-field leakage plasmon-coupled fluorescence (WFLPCF) microscopy are presented. We present pictures of nanostructures taken with a WFLPCF microscope. We discuss the general relationship existing between the lateral pattern stamped in the sample surface and the Fraunhofer diffraction pattern formed in the Fourier plane by the plasmon-coupled fluorescence leaked to the high numerical aperture objective lens of the microscope. In addition, we demonstrate that adding a linear polarizer in the optical path of the microscope permits to identify the polarization state of the guided wave polariton modes exited in the asymmetric metal/dielectric/air slab waveguide of the samples.

Jacob Ajimo
Department of Physics, Texas Tech University

Date submitted: 23 Sep 2009 Electronic form version 1.4