Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Cluster Ion Beam Induced Nano Metallic Rippled Structures for Localized Surface Plasmon Resonance (LSPR) Based Sensors IRAM SALEEM, BUDDHI TILAKARATNE, YANZHI HE, EPIE NZUMBE, DHARSHANA WIJESUNDERA, QUARK CHEN, WEI-KAN CHU, University of Houston — Localized surface plasmon resonance (LSPR) based bio sensors have a high sensitivity and exploit a label free real time analytical detection mechanism. We have produced plasmonic nano-structured substrates by cluster ion beam irradiation of thin gold films and have studied their effectiveness as potential plasmonic sensors. By adsorbing a mono-layer of thiolated organic compounds on the surface of these substrates we identified the shift in the LSPR peaks triggered by the change of dielectric function in the neighborhood of the structures. These plasmonic nano-metallic structures can be utilized to observe the change of LSPR resonance frequency due to adsorption, re-adsorption and reactions taking place on the surface that can potentially be mapped to reaction mechanics

Iram Saleem
University of Houston

Date submitted: 14 Nov 2014 Electronic form version 1.4