UNIVERSITY of HOUSTON | ENGINEERING
Department of Electrical & Computer Engineering

Graduate Office
Email: Ece_grad_admit@uh.edu
http://www.egr.uh.edu/ece/graduate

N308 Engineering Bldg. 1
Houston, TX 77204-4005

Tel: (713)743.8505 or (713)743.4400
Fax: (713) 743-4402

# MS Thesis Announcement

## THE NEW IMAGE PROCESSING ALGORITHM FOR QUALITATIVE AND QUANTITATIVE STM DATA ANALYSIS

**Ashish Tripathi**

ABSTRACT

Image processing can be used to extract cluster parameters from STM image. The objective observation from obtained data can be used to understand certain processes in Material Science. One such application is to study under-potential deposition where substrate surface is modified with sub-monolayer of different noble metal.

This thesis aims to develop a user friendly GUI(Graphical User Interface) that helps researcher to draw inference by quantifying parameters like layer coverage, nucleation density, cluster area and perimeter by area from an STM image. It uses an algorithm that filters noise using a custom made filter mask and then applies OTSU segmentation technique to fit Gaussian curve on image histogram for detecting the presence of a layer(s) of cluster in the STM image. It creates a binary image for each layer detected in the image. Cluster parameters are obtained by processing this binary image.

Committee Chair: Dr. Stanko Brankovic
Committee Members: Dr. Paul Ruchhoeft
Dr. Lars Grabow

Place: N 386, Engg. bldg. 1
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