

PHYSICS AND ASTRONOMY SEMINAR SPRING 2009

NANOSCALE ELECTROCHEMICAL MEASUREMENTS

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The disk-type, polished Pt nanoelectrodes (3- to 400-nm radius) were prepared and characterized by combination of voltammetry, scanning electron microscopy, and scanning electrochemical microscopy (SECM). A number of experimental curves were obtained at the same nanoelectrode to attain the accuracy and reproducibility similar to those reported previously for micrometer-sized probes. The prepared nanoelectrodes were used to carry out quantitative electrochemical measurements on the nanoscale. The examples include measurements of fast electron transfer kinetics, electrochemistry of individual molecules in zeptoliter volumes, and nanoelectrochemistry of living cells.

Monday, February 2, 2009, 4:00 pm
Brown Hall 261

Refreshments served at 3:45 pm