

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Development of a ‘Protein Microscope’ to Map Peptide Distributions in Cells J.A. HOFFMANN, M.E. REEVES, Department of Physics, George Washington University — We report on the development of a new instrument, dubbed a ‘Protein Microscope,’ that uses near-field optical techniques to increase the spatial resolution of atmospheric pressure matrix-assisted laser desorption and ionization (AP-MALDI). This functions as a novel front-end for time-of-flight mass spectrometry. Standard protein identification techniques involve homogenization of a tissue sample, which destroys all spatial and temporal information about the expressed proteins. Our new NSOM-based instrument will allow the identification and mapping of proteins expressed in intact cells and tissues, which is of great interest as protein expression connects genomic information with the functioning of an organism.

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Date submitted: 02 Dec 2006

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