

Abstract Submitted  
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**A multi-electrode velocity-map imaging apparatus to study laser induced molecular dynamics** S. DE, D. RAY, N.G. JOHNSON, I. BOCHAROVA, M. MAGRAKVELIDZE, C.L. COCKE, I.V. LITVINYUK, J. R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan, Kansas 66506-2601, USA, I. ZNAKOVSKAYA, A. WIRTH, M.F. KLING, Max-Planck Institute of Quantum Optics, Hans-Kopfermann Strasse 1, D-85748 Garching, Germany — We have designed and built a multi-electrode VMI spectrometer capable of detecting up to 300 eV electrons with good momentum resolution. The spectrometer is based on an original design which utilizes a multiple electrostatic lens system to contain the high energy electrons, while maintaining good volume focusing. The spectrometer is used together with super-sonic atomic and molecular jet gas targets in the J. R. Macdonald Laboratory. We measured 3D momentum distributions of ATI electrons produced by intense femtosecond laser pulses to determine the resolution of the spectrometer experimentally and compare the result to Simion calculations. We will present first results on using this device to record phase dependent control of electron localization in the dissociative ionization of simple molecules in two-color intense laser fields and the dynamic alignment and orientation of carbon monoxide after excitation by a two-color laser field.

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