

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Imaging the Dynamics of Cl($^2P_{3/2}$) Reactions with Selected Hydrocarbons LAURA VISGER, ARMANDO ESTILLORE, ARTHUR SUITS, Chemistry Department, Wayne State University, Detroit, MI 48202 — The crossed molecular beam method coupled with dc slice ion imaging technique provides promising results in understanding the dynamics of complex reaction processes. Advances in beam intensities and probe sensitivity, in conjunction with the sliced imaging approach, yield the means to study this reactivity rapidly and in a systematic way. Using these strategies, we studied the reaction of Cl($^2P_{3/2}$) atoms with selected hydrocarbons: *n*-butane; *cis*-2-butene; hexane; 1-hexene; 2-hexene; 1,5-hexadiene; *n*-heptane; and 2-methylhexane. The product alkyl radical images were detected *via* single photon ionization at 157 nm, directly yielding the product flux-velocity contour maps.

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Date submitted: 20 Nov 2009

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