

Abstract Submitted
for the GEC11 Meeting of
The American Physical Society

Mass analysis of trifluoro-iodo-methane in a Surface Barrier Discharge J.A. REES, C.L. GREENWOOD, D.T. LUNDIE, D.L. SEYMOUR, Hiden Analytical, HIDEN ANALYTICAL TEAM — Surface barrier discharges operated at atmospheric pressure are effective chemical reactors. Mass analysis of the reaction products is possible using suitable high pressure mass spectrometer systems. As an example of the behaviour of simple surface barrier reactor (SBDs), experiments on the decomposition of CF₃I are described in which the output from the reactor is admitted via a capillary inlet system into a Hiden HPR20 mass spectrometer. The discharge was operated using helium as the carrier gas. The observed mass spectra are discussed in terms of the plasma dissociation and the subsequent ionisation of the dissociated products in the electron impact ionisation source of the mass spectrometer. When oxygen was added to the gas mixture in the SBD, CF_xO species were generated in the plasma. Their influence on the observed mass spectra is shown. The results demonstrate aspects of the capabilities of SBDs for dissociating halocarbon gases at atmospheric pressure and the possibilities of direct mass spectrometric monitoring of such processes.

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Date submitted: 19 Jul 2011

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