Abstract Submitted
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Dissociative electron attachment to molecules and unstable species relevant in plasma processing KAROLA GRAUPNER, THOMAS FIELD, Centre for Plasma Physics, Queens University Belfast — Collisions between low energy electrons (0 to 10 eV) and molecules can lead to formation of negatively charged fragment ions by dissociative electron attachment. Electron attachment to plasma species, such as unstable molecules, formed in 2.45 GHz microwave discharges of CS_2/He [1], C_3F_6/He, SF_6/He, CH_4/He and CCl_4/He has been investigated with ERIC (Electron Radical Interaction Chamber), which includes a trochoidal electron monochromator and time-of-flight mass spectrometer. Knowledge of the spectra of negative ions formed as a function of electron energy for unstable molecules may be useful for understanding chemical processes and negative ion formation in plasmas. It may also be possible to identify unstable molecules in gas sampled from plasmas with these characteristic negative ion spectra.

[1] Dissociative electron attachment to the unstable carbon monosulfide molecule CS, K. Graupner, T. A. Field and L. Feketeova, New J. Phys, **8** (2006) 314.

Karola Graupner
Centre for Plasma Physics, Queens University Belfast

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