

## Molecular Physics Group Publications 2006-2009

1. M Braun, M.-W Ruf, H Hotop, P Cicman, P Scheier, T Märk, E Illenberger, C A Mayhew and R P Tuckett "High resolution studies of low energy electron attachment to SF<sub>5</sub>Cl: product anions and absolute cross sections" **252** (2006) 234-241.
2. M A Parkes, R Y L Chim, C A Mayhew, V A Mikhailov, R P Tuckett "Threshold photoelectron photoion coincidence spectroscopy and selected ion flow tube reactions of CHF<sub>3</sub> : comparison of product branching ratios" *Mol Phys* **104** (2006) 263-272.
3. C R Howle, M A Parkes, V A Mikhailov, C A Mayhew, and R P Tuckett, "Isomeric effects in the reactions of dichloroethene with various cations" *Journal of Physical Chemistry A*, **110(17)** (2006) 5760-5771
4. M.A. Parkes, S. Ali, V.A. Mikhailov, C.A. Mayhew and R.P. Tuckett, "Threshold photoelectron photoion coincidence spectroscopy and selected ion flow tube cation molecule reactions studies of c-C<sub>4</sub>F<sub>8</sub>" *Phys. Chem. Chem. Phys.*, (2006) **8**, 3643-3652
5. M.A. Parkes, S. Ali, R.P. Tuckett, V.A. Mikhailov and C.A. Mayhew "Threshold photoelectron photoion coincidence spectroscopy and selected ion flow tube reactions of *cyclic*-C<sub>5</sub>F<sub>8</sub>" *Phys. Chem. Chem. Phys.*, (2007) **9**, 5222-5231.
6. M.A. Parkes, S. Ali, R.P. Tuckett, V.A. Mikhailov and C.A. Mayhew "Threshold photoelectron photoion coincidence spectroscopy and selected ion flow tube reactions of *cyclic*-C<sub>5</sub>F<sub>8</sub>" *Phys. Chem. Chem. Phys.*, (2007) **9**, 5222-5231.

7. R.Y.L. Chim, P. Cicman, T.D. Märk, C.A. Mayhew, P. Scheier and R.P. Tuckett "Vacuum-UV and electron dissociative ionisation studies of SF<sub>5</sub>Cl" *Int. J. Mass Spectrom.*, (2007) **261**, 208-217.
8. W Zhou, D J Collins, R Y L Chim, and R P Tuckett "Threshold photoelectron-photoion coincidence study of the fragmentation of valence states of CH<sub>2</sub>F-CH<sub>3</sub><sup>+</sup>" *New Journal of Physics* (2007) **9**, art. no. 104.
9. M A Parkes, S Ali, C R Howle, R P Tuckett, and A E R Malins. "The photoionization dynamics of the three structural isomers of dichloroethene" *Molecular Physics* (2007) **105 (5-7)**, 907-916.
10. V A. Mikhailov, M A Parkes, Matthew J. Simpson, R P Tuckett, and C A Mayhew "A selected ion flow tube study of the ion-molecule reactions of monochloroethene, trichloroethene and tetrachloroethene" *J.Phys.Chem.* (2008) **112**, 9012-9022.
11. V A. Mikhailov, M A Parkes, Matthew J. Simpson, R P Tuckett, and C A Mayhew "A selected ion flow tube study of the ion-molecule reactions of monochloroethene, trichloroethene and tetrachloroethene" *J.Phys.Chem.* (2008) **112**, 9012-9022.
12. K Graupner, L M Graham, T A Field, C A Mayhew, I I Fabrikant, T M Miller, M Braun, M W Ruf, and H Hotop, "Highly resolved absolute cross-sections for dissociative electron attachment to SF<sub>5</sub>CF<sub>3</sub>" *Int. J. Mass Spectrom.* 277 (2008) 113–122.
13. M A Parkes, S Ali, M J Simpson, R P Tuckett, and A E R Malins. "Threshold photoelectron photoion coincidence spectroscopy of trichloroethene and tetrachloroethene" *Molecular Physics* (2008) **106 (14)**, 1739-1749.

14. S Feil, T D Märk, A Mauracher, P Scheier and C A Mayhew "Investigations of Electron Attachment to the Perfluorocarbon Molecules *c*-C<sub>4</sub>F<sub>8</sub>, 2-C<sub>4</sub>F<sub>8</sub>, 1,3 C<sub>4</sub>F<sub>6</sub>, and *c*-C<sub>5</sub>F<sub>8</sub>" *Int. J. Mass Spectrom.* **277** (2008) 41–51.
15. M E O'Hara, S O'Hehir, S Green and C A Mayhew, "Development of a protocol to measure VOCs in human breath: a comparison of rebreathing and on-line single exhalations using PTR-MS" *Physiol. Meas.* **29** (2008) 309–330.
16. M. J. Simpson, R. P. Tuckett, K. F. Dunn, C. A. Hunniford, C. J. Latimer, and S. W. J. Scully "Vacuum-UV negative photoion spectroscopy of SF<sub>5</sub>CF<sub>3</sub>" *J. Chem. Phys.* **128** (2008) 124315.
17. N. H. Morgon and R A Kennedy Theoretical study of the gas-phase reaction: SF<sub>6</sub> + CO<sup>+</sup> → SF<sub>5</sub><sup>+</sup> + FCO. *J. Braz. Chem. Soc.*, Vol. 19, No. 1, 74-80, 2008.
18. A.J. Bell, F. Ferrante, S.E. Hall, V. Mikhailov, D. Mitchell, C.M. Timperley, P. Watts, N. Williams "Fragmentations and reactions of protonated *O,O*-dimethyl ethylphosphonate and some isotopomers produced by electrospray ionisation in an ion trap mass spectrometer" *Int. J. Mass Spectrom.* **269** (2008) 46–54.
19. M O'Hara and C A Mayhew "Don't hold your breath! The diagnostic potential of breath analysis" *Chemistry Review* **18 No. 2** (2008) 13-16.
20. C A. Mayhew and R D. Short "Selected Ion Flow Tube Studies to Investigate the Formation of Acrylic and Propionic Acid Protonated Clusters in Low Power, Low Pressure RF Plasmas" *Chem. Commun.*, (2009) **6**, 659-661.
21. Margaret E O'Hara, Tom H Clutton-Brock, Stuart Green, Shane O'Hehir, and Chris A Mayhew "Mass spectrometric investigations to obtain the first direct comparisons of endogenous breath and blood volatile organic compound

concentrations in healthy volunteers" Int. J. Mass Spectrom. **281** (2009) 92–96.

22. S Hall and C A Mayhew "With a Trace" Physics Review February 2009 24-27.

23. M O'Hara and C A Mayhew "A preliminary comparison of volatile organic compounds in the headspace of cultures of *Staphylococcus aureus* grown in nutrient, dextrose and brain heart bovine broths measured using a Proton Transfer Reaction Mass Spectrometer" J.Breath Res. (Accepted for publication February 2009)