

Curriculum vitae

Carl John Percival

A. Personal Information

Education

1988-1995 Christ Church, Oxford, OX1 1DP, UK
1982-1988 Fairfax School, Fairfax Road, Sutton Coldfield, West Midlands, B75 7JT

Qualifications

1995 MA, University of Oxford
1995 D. Phil Chemistry, University of Oxford
1992 BA(Hons) Chemistry, University of Oxford

Previous Employment

2012-2017	Professor of Atmospheric Chemistry	School of Earth, Atmospheric and Environmental Sciences University of Manchester
2009-2012	Reader Atmospheric Science	School of Earth, Atmospheric and Environmental Sciences University of Manchester
2004 -2008	Senior Lecturer Atmospheric Science	School of Earth, Atmospheric and Environmental Sciences University of Manchester
2003 -2004	Lecturer Physics	Department of Physics University of Manchester Institute of Science and Technology
2001-2003	Senior Lecturer Analytical Chemistry	Department of Chemistry and Physics Nottingham Trent University
1999-2001	Lecturer Analytical Chemistry	Department of Chemistry and Physics Nottingham Trent University
1997-1999	Research Fellow	Department of Chemistry University of Cambridge Supervisor: Dr R. A. Cox
1995-1997	Research Associate	Department of Chemistry Massachusetts Institute of Technology Supervisor: Prof. M. J. Molina

B. Research and academic/professional standing

Funding

C. Percival, Air Quality Urban Analysis of Real-time Information and Actuation AQUARIA, Department for Transport Innovation Grant, (£58,574, 2016-)

G. Allen, M. Gallagher and C. Percival, Global Methane Budget, NERC, NE/N015835/1 (£249,998, 2016-)

C. Percival, H. Coe, J. Allan and G. McFiggans, An Integrated Study of AIR Pollution PROCesses in Beijing (AIRPRO), NERC, NE/N00695X/1 (£290,312, 2016-)

J. Allan, H. Coe and C. Percival, Sources and Emissions of Air Pollutants in Beijing AIRPOLL, NERC, NE/N007123/1 (£469,933, 2016-)

C. Percival, Residual Chlorine gas Analysis, DSTL, DSTLX10000098041 (£17,277, 2015)

C. Percival, G. Allen, K. Bower, M. Gallagher and C. Percival Green House gas UK and Global Emission, NERC, NE/K00221X/1 (£333,169, 2013-)

C. Percival, H. Coe, J. Allen, G. McFiggans, Time of Flight Mass Spectrometer, NERC Strategic Environmental Science Capital Funding (£350,000, 2014)

D. E. Shallcross and C. Percival, Urban Oxidising Capacity using reactive tracers, NERC, NE/K014811/1 (£814,232, 2013-2017)

D. E. Shallcross, A. Orr-Ewing and C. Percival, gas phase studies of Criegee Intermediates, NERC, NE/K005316/1 (£608,561)

C. Percival and D. E. Shallcross, Isoprene and recycling, NERC, NE/J009210/1 (£592,585)

C. Percival, Novel photoionisation source, £13860, Investing in Success, University of Manchester (2012-2013).

D. O. Topping, A.M. Booth, M. R. Alfarra, B. Burton and C.J. Percival, *Improvement of composition and property prediction techniques for Secondary Organic Aerosol (SOA)*, NERC, NEJ009202/1 (£457,540).

D. Mok, J.M. Dyke and C.J. Percival, Studies of reactions of reactive intermediates of atmospheric importance produced from ozone-alkene reactions, Research Grants Council, Hong Kong (HK\$ 1,036,000).

D. O. Topping, C.J. Percival, A.M. Booth, I Riipinen, and J Reid, Novel approaches for quantifying the thermodynamics and kinetics of atmospheric gas-to-particle conversion, NERC, NE/J02175/X (£532,722).

D.E. Shallcross, G.C. Lloyd-Jones and C.J. Percival, Isoprene oxidation and OH recycling, NERC, NEJ009210/1 (£592,585).

AB Horn, CJ Percival, DO Topping and AM Booth, Building Capability for Property Prediction Techniques for Secondary Organic Aerosol in the Centre for Atmospheric Science *via* New Measurements of Condensed-Phase Reactions, EPS strategic Fund (£5,500, 2011).

M.W. Gallagher, M. Flynn, J. Dorsey, G. Vaughn, H. Coe and C. J. Percival, *Co-ordinated airborne studies in the tropics (CAST)*, NERC, NE/J006173/1 (£589,426), 2011-2015.

H. Coe, M. Gallagher, K. Bower and C.J. Percival, *Methane and other greenhouse gases in the arctic, measurements, process studies and modelling (MAAM)*, NERC, NE/I029293/1 (£442,780, 2011-2015). 2011-2014.

D. Mok, J.M. Dyke and C.J. Percival, *Studies of peroxy and related radical reactions of atmospheric importance: determination of reaction mechanisms, channel specific rate coefficients, and studies of the reaction intermediates*, Research Grants Council, Hong Kong (HK\$ 722,500, 2011-2014), GRF 501911.

C.J. Percival and D.E. Shallcross, *Simultaneous measurement of gas phase NH₃ and speciated NO_y*, NERC-Clearflo NE/I014381/1 (£9,650, 2011-2014)

C.J. Percival, J.M. Dyke and D.E. Shallcross, *Laboratory studies of Criegee radical reactions*, NERC, NE/I014381/1 (£703,726, 2011-2014)

C.J. Percival, M. R. Alfarra, D. O. Topping and M. Benyazzar, *The development of a Lithium-attachment chemical ionization mass spectrometer for studies in the atmosphere*, NERC, NE/H003061/1, (£239646, 2009-2012)

C.J. Percival, A. Orr-Ewing, D. E. Shallcross and M. E. Jenkin, *The gas phase atmospheric photolysis and reactions of key alkyl nitrates and their role in NO_y partitioning*, NERC, NE/G017352/1, (£956,511, 2009-2012).

W.B. Bloss and C. J. Percival, *A laboratory Study of the Photolysis of the ClO Dimer*, NERC, NE/F018045/1 (£476,043, 2009-2011).

H. Coe, C.J. Percival, G. McFiggans, P. Williams and J. Allen, *RONOCO (Role of Nighttime chemistry in controlling the Oxidising Capacity of the Atmosphere)*, NERC Consortium, NE/F004656/1 (£623,661, 2008-2012)

D. O. Topping, G. McFiggans and C.J. Percival, *Direct Validated Improvement of Atmospheric Aerosol Property Prediction Using Laboratory Measurements*, NE/E018181/1, NERC, (£420,680; 2007 – 2010).

C.J. Percival, H. Coe, M. Gallagher, E. Nemitz, *An airborne dual ionisation Chemical Ionisation Mass Spectrometer* NE/E018092/1, NERC, (£653,519; 2007 – 2010).

C.J. Percival and D.E. Shallcross. *Laboratory and modelling studies of the reactions of peroxy radicals with XO (where X= Cl, Br or I)*, NERC, NE/E005268/1 (£361,241; 2007 – 2010).

C.J. Percival, M. Van-Tongeren and D.E. Shallcross, *PPE:Pollution in the Classroom*, EPSRC, EP/D068290/1 (£11,529; 2006)

R.C. Rees, M.I. Newton, G. McHale, C.J., Percival and I.A. Dodi. *Acoustic wave technique to assess MHC-peptide interactions*, EPSRC, GR/T24524/01 (£77,174; 2005 – 2006)

C.J. Percival and D.E. Shallcross. *Laboratory and modelling studies of peroxy radical cross reactions*, NERC, NER/A/S/2003/00374 (£101,429; 2004 – 2007).

C. J. Percival, M. I. Newton and G. McHale. *Measurement of atmospheric particulate matter using surface acoustic wave devices*, EPSRC, GR/R36718 (£171,000; 2001 – 2004).

C. J. Percival, *Development of a Turbulent Flow - Chemical Ionisation Mass Spectrometer For Laboratory Kinetic Measurements*, EPSRC, GR/R22766 (£58,000; 2001 – 2004).

C.J. Percival, *Airborne Detection of Atmospheric NO_x*. Royal Society (£10,000; 2000 – 2001).

C.J. Percival (2000-2003). *Laboratory studies of peroxy radical reactions using a turbulent flow chemical ionisation mass spectrometer technique*, NERC, NER/B/S/2000/00108 (£81,000; 2000 – 2003).

Facilities awards

C.J. Percival and D.E. Shallcross, The reactions of CH₃O₂ radicals with OH radicals and Criegee Intermediates, ALS-07535, 40 shifts awarded (2015-).

C.J. Percival and D.E. Shallcross, Temperature dependent studies of Criegee Intermediates, Advanced Light source, ALS-06638, 40 shifts awarded (2013-2016).

C.J. Percival and D.E. Shallcross, The production and kinetics of Criegee biradicals, towards the elucidation of the mechanism of ozonolysis of alkenes, Advanced Light source, ALS-05323, 40 shifts awarded (2012-2013).

C.J. Percival and D.E. Shallcross, The production and kinetics of the simplest Criegee biradical and adaptation of the Multiplexed Photoionization Mass Spectrometer to probe low temperatures, Advanced Light source, ALS-03890, 20 shifts awarded (2011-2012).

C. J. Percival and A. B. Horn, Ozonolysis of organic aerosols, Molecular Spectroscopy Facility, Rutherford Appleton Laboratory, NE/C004302/1, (2005-2006).

Publications

Group members are in bold, group member's in my group who carried out the experiments are named as first author

116. A Tsekeri, V Amiridis, F Marengo, A Nenes, E Marinou, S Solomos, P Rosenberg, J Trembath, GJ Nott, J Allan, **M Le Breton**, **A Bacak**, H Coe, **C Percival** and N Mihalopoulos (2017). Profiling aerosol optical, microphysical and hygroscopic properties in ambient conditions by combining in situ and remote sensing, *Atmospheric Measurement Techniques*, 10, 83-107.

115. NRP Harris, L J Carpenter, J D Lee, G Vaughan, M T Filus, R L Jones, B OuYang, J A Pyle, AD Robinson, SJ Andrews, AC Lewis, J Minaeian, A Vaughan, JR Dorsey, MW Gallagher, **M Le Breton**, R Newton, **CJ Percival**, HMA Ricketts, S JB Baugitte, GJ Nott, A Wellpott, MJ Ashfold, J Flemming, R Butler, PI Palmer, PH Kaye, C Stopford, C Chemel, H Boesch, N Humpage, A Vick, AR MacKenzie, R Hyde, P Angelov, E Meneguz, AJ Manning

(2017). Co-ordinated Airborne Studies in the Tropics (CAST), Bulletin of the American Meteorological Society, DOI:10.1175/BAMS-D-14-00290.1

114. JL France, M Cain, RE Fisher, D Lowry, G Allen, **SJ O'Shea**, S Illingworth, J Pyle, N Warwick, **BT Jones**, MW Gallagher, K Bower, **M Le Breton**, **C Percival**, **J Muller**, A Welpott, S Bauguitte, C George, GD Hayman, AJ Manning, C Lund Myhre, M Lanoisellé, EG Nisbet (2016). Measurements of $\delta^{13}\text{C}$ in CH_4 and using particle dispersion modeling to characterize sources of Arctic methane within an air mass
Journal of Geophysical Research: Atmospheres, 121, 14257,14270.

113. I Pisso, C Lund Myhre, SM Platt, S Eckhardt, O Hermansen, N Schmidbauer, J Mienert, S Vadakkepuliambatta, S Bauguitte, **J Pitt**, G Allen, KN Bower, **S O'Shea**, MW Gallagher, **CJ Percival**, J Pyle, M Cain, A Stohl (2016). Constraints on oceanic methane emissions west of Svalbard from atmospheric in situ measurements and Lagrangian transport modeling. Journal of Geophysical Research: Atmospheres, 121, 14188-14200.

112. E Aruffo, F Biancofiore, P Di Carlo, M Busilacchio, M Verdecchia, B Tomassetti, C Dari-Salisburgo, F Giammaria, S Bauguitte, J Lee, S Moller, J Hopkins, S Punjabi, SJ Andrews, AC Lewis, PI Palmer, E Hyer, **M Le Breton** and **C Percival** (2016). Impact of biomass burning emission on total peroxy nitrates: fire plume identification during the BORTAS campaign **Atmospheric Measurement Techniques**, 9, 5591-5606.

113. J A Schmidt, DJ Jacob, HM Horowitz, L Hu, T Sherwen, MJ Evans, Q Liang, RM Suleiman, DE Oram, **M Le Breton**, **CJ Percival**, S Wang, B Dix and R Volkamer (2016). Modeling the observed tropospheric BrO background: Importance of multiphase chemistry and implications for ozone, OH, and mercury, J. Geophys. Res., 121,11,819–11,835.

112. YC Song, AE Haddrell, BR Bzdek, JP Reid, **T Bannan**, DO Topping, **C Percival** and C Cai (2016). Measurements and Predictions of Binary Component Aerosol Particle Viscosity, Journal of Physical Chemistry A, 120, 8123-8137

111. CL Myhre, B Ferré, SM Platt, A Silyakova, O Hermansen, G Allen, I Pisso, N Schmidbauer, A Stohl, **J Pitt**, P Jansson, J Greinert, **C Percival**, A M Fjæraa, **SJ O'Shea**, M Gallagher, **M Le Breton**, KN Bower, S J-B Bauguitte, S Dalsøren, S Vadakkepuliambatta, RE Fisher, EG Nisbet, D Lowry, G Myhre, JA Pyle, M Cain and J Mienert (2016). Extensive release of methane from Arctic seabed west of Svalbard during summer 2014 does not influence the atmosphere, Geophysical Research Letters 43 (9), 4624-4631

110. **C. Percival**, E. Lewis and S. Illingworth (2016). Does attending a large science event enthuse young people about science careers? Democracy, 28,7.

109. E Bossioli, M Tombrou, J Kalogiros, J Allan, A Bacak, S Bezantakos, G Biskos, H Coe, **BT Jones**, G Kouvarakis, N Mihalopoulos, **CJ Percival** (2016) Atmospheric composition in the Eastern Mediterranean: Influence of biomass burning during summertime using the WRF-Chem model, Atmospheric Environment, 132, 317-331.

108. MAH Khan, SMP Gillespie, B Razis, P Xiao, MT Davies-Coleman, **CJ Percival**, RG Derwent, JM Dyke, MV Ghosh, EPF Lee, DE Shallcross (2016). A modelling study of the atmospheric chemistry of DMS using the global model, STOCHEM-CRI, Atmospheric Environment 127, 69-79

107. **JR Pitt**, **Michael Le Breton**, Grant Allen, **CJ Percival**, MW Gallagher, SJB Bauguitte, **SJ O'Shea**, **JBA Muller**, MS Zahniser, John Pyle, PI Palmer (2016), The development and evaluation of airborne in situ N_2O and CH_4

sampling using a quantum cascade laser absorption spectrometer (QCLAS), *Atmospheric Measurement Techniques*, 9, 63-77.

106. Daniel C Anderson, Julie M Nicely, Ross J Salawitch, Timothy P Canty, Russell R Dickerson, Thomas F Hanisco, Glenn M Wolfe, Eric C Apel, Elliot Atlas, Thomas Bannan, Stephane Bauguitte, Nicola J Blake, James F Bresch, Teresa L Campos, Lucy J Carpenter, Mark D Cohen, Mathew Evans, Rafael P Fernandez, Brian H Kahn, Douglas E Kinnison, Samuel R Hall, Neil RP Harris, Rebecca S Hornbrook, Jean-Francois Lamarque, **Michael Le Breton**, James D Lee, **Carl Percival**, Leonhard Pfister, R Bradley Pierce, Daniel D Riemer, Alfonso Saiz-Lopez, Barbara JB Stunder, Anne M Thompson, Kirk Ullmann, Adam Vaughan, Andrew J Weinheimer, A pervasive role for biomass burning in tropical high ozone/low water structures (2016), *Nature Communications*, DOI:10.1038/ncomms10267.

105. MAH Khan, MC Cooke, SR Utembe, WC Morris, AT Archibald, RG Derwent, ME Jenkin, AJ Orr-Ewing, CM Higgins, **CJ Percival**, **KE Leather**, DE Shallcross (2015). Global modeling of the C 1–C 3 alkyl nitrates using STOCHEM-CRI, *Atmospheric Environment*, 123, 256-267

104. MAH Khan, MC Cooke, SR Utembe, AT Archibald, RG Derwent, P Xiao, **CJ Percival**, ME Jenkin, WC Morris, DE Shallcross (2015). Global modeling of the nitrate radical (NO₃) for present and pre-industrial scenarios, *Atmospheric Research*, 164, 347-357.

103. MAH Khan, MC Cooke, SR Utembe, AT Archibald, P Maxwell, WC Morris, P Xiao, RG Derwent, ME Jenkin, **CJ Percival**, RC Walsh, TDS Young, PG Simmonds, G Nickless, S O'Doherty, DE Shallcross (2015). A study of global atmospheric budget and distribution of acetone using global atmospheric model STOCHEM-CRI, *Atmospheric Environment*, 112, 269-277.

102. MAH Khan, WC Morris, LA Watson, M Galloway, PD Hamer, BMA Shallcross, **CJ Percival**, DE Shallcross (2015). Estimation of Daytime NO₃ Radical Levels in the UK Urban Atmosphere Using the Steady State Approximation Method, *Advances in Meterology*, 112, 269-277.

101. MAH Khan, MC Cooke, SR Utembe, P Xiao, WC Morris, RG Derwent, AT Archibald, ME Jenkin, **CJ Percival**, DE Shallcross (2015). The global budgets of organic hydroperoxides for present and pre-industrial scenarios. *Atmospheric Environment*, 110, 65-74

100. Merete Bilde, Kelley Barsanti, **Murray Booth**, Christopher D Cappa, Neil M Donahue, Eva U Emanuelsson, Gordon McFiggans, Ulrich K Krieger, Claudia Marcolli, David Topping, Paul Ziemann, Mark Barley, Simon Clegg, Benjamin Dennis-Smith, Mattias Hallquist, Åsa M Hallquist, Andrey Khlystov, Markku Kulmala, Ditte Mogensen, **Carl J Percival**, Francis Pope, Jonathan P Reid, MAV Ribeiro da Silva, Thomas Rosenoern, Kent Salo, Vacharaporn Pia Soonsin, Taina Yli-Juuti, Nønne L Prisle, Joakim Pagels, Juergen Rarey, Alessandro A Zardini, Ilona Riipinen (2015) Saturation vapor pressures and transition enthalpies of low-volatility organic molecules of atmospheric relevance: From dicarboxylic acids to complex mixtures. *Chemical Reviews*, 10, 4115-4156.

99. **T.J. Bannan**, **A.M. Booth**, **A. Bacak**, **J. Muller**, **K.E. Leather**, **M. Le Breton**, **B. Jones**, D. Young, H. Coe, J. Allan, S. Visser, J.G. Slowik, M. Furger, A.S.H. Prévôt, J. Lee, R. Holmes, J.R. Hopkins, J.F. Hamilton, A.C. Lewis, L.K. Whalley, T. Sharp, D. Stone, D.E. Heard, Z.L. Fleming, R. Leigh, D.E. Shallcross and **C.J. Percival** (2015) The first UK measurements of nitryl chloride using a chemical ionisation mass spectrometer in central London in the summer of 2012, and an investigation of the role of Cl atom oxidation. *Journal of Geophysical Research: Atmospheres*, 120, 5638-5657.

98. MAH Khan, MC Cooke, SR Utembe, AT Archibald, RG Derwent, ME Jenkin, WC Morris, N South, JC Hansen, JS Francisco, **CJ Percival**, DE Shallcross (2015) Global analysis of peroxy radicals and peroxy radical-water complexation using the STOCHEM-CRI global chemistry and transport model, *Atmospheric Environment*, **106**, 278-287.
97. **J.J. Najera, C. J. Percival** and A.B. Horn (2015) Infrared Spectroscopic Evidence for a Heterogeneous Reaction between Ozone and Sodium Oleate at the Gas–Aerosol Interface: Effect of Relative Humidity, *International Journal of Chemical Kinetics*, **47**, 277-288.
96. M Tombrou, E Bossioli, J Kalogiros, JD Allan, **A Bacak**, G Biskos, H Coe, A Dandou, G Kouvarakis, N Mihalopoulos, **CJ Percival**, AP Protonotariou, B Szabó-Takács (2015) Physical and chemical processes of air masses in the Aegean Sea during Etesians: Aegean-GAME airborne campaign, *Science of the Total Environment*, **506**, 201-216.
95. D Lowe, S Archer-Nicholls, W Morgan, J Allan, S Utembe, B Ouyang, E Aruffo, **M Le Breton**, RA Zaveri, P Di Carlo, **C Percival**, H Coe, R Jones, G McFiggans (2015) WRF-Chem model predictions of the regional impacts of N₂O₅ heterogeneous processes on night-time chemistry over north-western Europe, *Atmospheric Chemistry and Physics*, **15**, 1385-1409.
94. R Chhantyal-Pun, A Davey, DE Shallcross, **CJ Percival**, A J Orr-Ewing (2015) A kinetic study of the CH₂OO Criegee intermediate self-reaction, reaction with SO₂ and unimolecular reaction using cavity ring-down spectroscopy, *Physical Chemistry Chemical Physics*, **17**, 3617-3626.
93. **BT Jones, JBA Muller, SJ O'Shea, A Bacak, M Le Breton, TJ Bannan, KE Leather, A M Booth**, S Illingworth, K Bower, MW Gallagher, G Allen, D E Shallcross, SJ-B Bauguitte, JA Pyle, **CJ Percival** (2014) Airborne measurements of HC (O) OH in the European Arctic: A winter–summer comparison, *Atmospheric Environment*, **99**, 556-567.
92. MAH Khan, MC Cooke, SR Utembe, P Xiao, RG Derwent, ME Jenkin, AT Archibald, P Maxwell, WC Morris, N South, **CJ Percival**, DE Shallcross (2014) Reassessing the photochemical production of methanol from peroxy radical self and cross reactions using the STOCHEM-CRI global chemistry and transport model, *Atmospheric Environment*, **99**, 77-84.
91. JW Taylor, JD Allan, G Allen, H Coe, PI Williams, MJ Flynn, **M Le Breton, JBA Muller, CJ Percival**, D Oram, G Forster, JD Lee, AR Rickard, M Parrington, PI Palmer (2014) Size-dependent wet removal of black carbon in Canadian biomass burning plumes, *Atmospheric Chemistry and Physics*, **14**, 13755-13771.
90. G Allen, SM Illingworth, **SJ O'Shea**, S Newman, A Vance, SJ-B Bauguitte, F Marenco, J Kent, K Bower, MW Gallagher, **J Muller, CJ Percival**, C Harlow, J Lee, JP Taylor (2014). Atmospheric composition and thermodynamic retrievals from the ARIES airborne TIR-FTS system–Part 2: Validation and results from aircraft campaigns, *Atmospheric Measurement Techniques*, **7**, 4401-4416.
89. **S. J. O'Shea**, G. Allen, M. W. Gallagher, K. Bower, S. M. Illingworth, **J. B. A. Muller, B. Jones, C. J. Percival**, S. J-B. Bauguitte, M. Cain, N. Warwick, A. Quiquet, U. Skiba, J. Drewer, K. Dinsmore, E. G. Nisbet, D. Lowry, R. E. Fisher, J. L. France, M. Aurela, A. Lohila, G. Hayman, C. George, D. Clark, A. J. Manning, A. D. Friend, and J. Pyle (2014) Methane and carbon dioxide fluxes and their regional scalability for the European Arctic wetlands during the MAMM project in summer 2012, *Atmospheric Chemistry and Physics*, **14**, 13159-13174.

88. S. Illingworth, G Allen, **C Percival**, P Hollingsworth, M Gallagher, H Ricketts, **H Hayes**, P Ładosz, D Crawley and G Roberts (2014) Measurement of boundary layer ozone concentrations on-board a Skywalker unmanned aerial vehicle, *Atmospheric Science Letters*, **15**, 252-258.
87. E Aruffo, P Di Carlo, C Dari-Salisburgo, F Biancofiore, F Giammaria, M Busilacchio, J Lee, S Moller, J Hopkins, S Punjabi, S Bauguitte, D O'Sullivan, **C Percival**, **M Le Breton**, **J Muller**, R Jones, G Forster, C Reeves, D Heard, H Walker, T Ingham, S Vaughan and D Stone (2014) Aircraft observations of the lower troposphere above a megacity: Alkyl nitrate and ozone chemistry, *Atmospheric Environment*, **94**, 479-488.
86. D Lowe, S Archer-Nicholls, W Morgan, J Allan, S Utembe, B Ouyang, E Aruffo, M Le Breton, RA Zaveri, P Di Carlo, **C Percival**, H Coe, R Jones, G McFiggans (2014) WRF-Chem model predictions of the regional impacts of N₂O₅ heterogeneous processes on night-time chemistry over north-western Europe. *Atmospheric Chemistry and Physics Discussions*, **14**, 20883-20943.
85. **AM Booth**, B. Murphy, I Riponen, **CJ Percival** and DO Topping (2014) Connecting Bulk Viscosity Measurements to Kinetic Limitations on Attaining Equilibrium for a Model Aerosol Composition, *Environmental Science and Technology*, **48**, 9298-9305.
84. SI Bohnenstengel, SE Belcher, A Aiken, JD Allan, G Allen, **A Bacak**, **TJ Bannan**, JF Barlow, DCS Beddows, WJ Bloss, AM Booth, C Chemel, O Coceal, CF Di Marco, MK Dubey, KH Faloon, ZL Fleming, M Furger, JK Gietl, RR Graves, DC Green, CSB Grimmond, CH Halios, JF Hamilton, RM Harrison, MR Heal, DE Heard, C Helfter, SC Herndon, RE Holmes, JR Hopkins, AM Jones, FJ Kelly, S Kotthaus, B Langford, JD Lee, RJ Leigh, AC Lewis, RT Lidster, FD Lopez-Hilfiker, JB McQuaid, C Mohr, PS Monks, E Nemitz, NL Ng, **CJ Percival**, ASH Prévôt, HMA Ricketts, R Sokhi, D Stone, JA Thornton, AH Tremper, AC Valach, S Visser, LK Whalley, LR Williams, L Xu, DE Young, P Zotter (2014) Meteorology, air quality, and health in London: The ClearfLo project, *Bulletin of the American Meteorology Society*, DOI 10.1175/BAMS-D-12-00245.1
83. C. A. Taatjes, **C.J. Percival** and D. E. Shallcross, Reactive Intermediates just want to react, *Nature Chemistry*, **6**, 461-462.
82. **M. Le Breton**, **A. Bacak**, **J. B. A. Muller**, **T. J. Bannan**, O. Kennedy. B. Ouyang, S.J.-B. Bauguitte, D. E. Shallcross R. L. Jones M. J.S. Daniels, S. M. Ball and **C. J. Percival** (2014) The first airborne comparison of N₂O₅ measurements over the UK using a CIMS and BBCEAS during the RONOCO campaign, *Analytical Methods*, **6**, 9731-9743.
81. **S. J. O'Shea**, G. Allen, Z.L. Fleming, S. J.-B. Bauguitte, **C.J. Percival**, M. W. Gallagher, J. Lee, C. Helfter and E. Nemitz (2104) Area fluxes of carbon dioxide, methane and carbon monoxide derived from airborne measurements around Greater London: A case study during Summer 2012, *Journal of Geophysical Research*., DOI: 10.1002/2013JD021269.
80. O. Welz, A.J. Eskola, L. Sheps, B. Rotavera, J.D. Savee, A.M. Scheer, D.L. Osborn, D. Lowe, **A.M. Booth**, P. Xioa, A.H. Khan, **C. Percival**, D. E. Shalcross, C.A. Taatjes (2014) Rate Coefficients of C1 and C2 Criegee Intermediate Reactions with Formic and Acetic Acid Near the Collision Limit: Direct Kinetics Measurements and Atmospheric Implications. *Angewandte Chemie*, DOI: 10.1002/anie.201400964
79. **M. Le Breton**, **A. Bacak**, **J. B. A. Muller**, **S. J. O'Shea**, P. Xiao, M. N. R. Ashfold, M. C. Cooke, R. Batt, D. E. Shallcross, D. E. Oram, G. Forster, S. J.-B. Bauguitte, and **C. J. Percival** (2013). Correndum to Airborne

hydrogen cyanide measurements using a chemical ionisation mass spectrometer for the plume identification of biomass burning forest fires. *Atmospheric Chemistry and Physics*, **13**, 9915-9915.

78. P. I. Palmer, M. Parrington, J. D. Lee, A. C. Lewis, A. R. Rickard, P. F. Bernath, T. J. Duck, D. L. Waugh, D. W. Tarasick, S. Andrews, E. Aruffo, L. J. Bailey, E. Barrett, S. J.-B. Bauguitte, K. R. Curry, P. Di Carlo, L. Chisholm, L. Dan, G. Forster, J. E. Franklin, M. D. Gibson, D. Griffin, D. Helmig, J. R. Hopkins, J. T. Hopper, M. E. Jenkin, D. Kindred, J. Kliever, **M. Le Breton**, S. Matthiesen, M. Maurice, S. Moller, D. P. Moore, D. E. Oram, **S. J. O'Shea**, R. Christopher Owen, C. M. L. S. Pagnello, S. Pawson, **C. J. Percival**, J. R. Pierce, S. Punjabi, R. M. Purvis, J. J. Remedios, K. M. Rotermund, K. M. Sakamoto, A. M. da Silva, K. B. Strawbridge, K. Strong, J. Taylor, R. Trigwell, K. A. Tereszchuk, K. A. Walker, D. Weaver, C. Whaley, and J. C. Young (2013). Quantifying the impact of BOREal forest fires on Tropospheric oxidants over the Atlantic using Aircraft and Satellites (BORTAS) experiment: design, execution and science overview, *Atmospheric Chemistry and Physics*, **13**, 6239-6261.

77. **M. Le Breton**, **A. Bacak**, **J. B. A. Muller**, **S. J. O'Shea**, P. Xiao, M. N. R. Ashfold, M. C. Cooke, R. Batt, D. E. Shallcross, D. E. Oram, G. Forster, S. J.-B. Bauguitte, and **C. J. Percival** (2013). Airborne hydrogen cyanide measurements using a chemical ionisation mass spectrometer for the plume identification of biomass burning forest fires. *Atmospheric Chemistry and Physics*, **13**, 9217-9232.

76. **T. J. Bannan**, **A. Bacak**, **J.B.A. Muller**, **A.M. Booth**, **B. Jones**, **M. Le Breton**, **K.E. Leather**, P. Xiao, D.E. Shallcross and **C. J. Percival** (2013) Importance of Direct Anthropogenic Emissions of Formic Acid measured by a Chemical Ionisation Mass Spectrometer (CIMS) during the Winter ClearfLo Campaign in London, January 2012, *Atmospheric Environment*, **83**, 301-310 (2014).

75. **M. Le Breton**, **A. Bacak**, **J.B.A. Muller**, P. Xiao, B.M.A. Shallcross, R. Batt, M.C. Cooke, D.E. Shallcross, S. J.-B. Bauguitte and **C.J. Percival** (2013), Simultaneous airborne nitric acid and formic acid measurements using a chemical ionization mass spectrometer around the UK: analysis of primary and secondary production pathways, *Atmospheric Environment*, **83**, 166-175 (2014).

74. D. E. Shallcross, C.A. Taatjes, **C.J. Percival**, Criegee intermediates in the indoor environment: new insights (2014), *Indoor air*, doi:10.1111/ina.12102

73. **C.J. Percival**, O. Welz, A.J. Eskola, J.D. Savee, D.L. Osborn, D.O. Topping, D. Lowe, S. R. Utembe, **A. Bacak**, G. McFiggans, M.C. Cooke, P. Xiao, A.T. Archibald, M.E. Jenkin, R.G. Derwent, I. Riipinen, D.W.K. Mok, E.P.F. Lee, J.M. Dyke, C.A. Taatjes and D.E. Shallcross (2013) Regional and global impacts of Criegee intermediates on atmospheric sulphuric acid concentrations and first steps of aerosol formation, *Faraday Discussions*, **165**, 45-73.

72. *C.A. Taatjes, D.E. Shallcross and **C.J. Percival** (2014) Research frontiers in the chemistry of Criegee intermediates and tropospheric ozonolysis, *Physical Chemistry Chemical Physics*, **16**, 1704-1718. **Cover Article**

71. CA Taatjes, O. Welz, A.K. Eskola, J.D. Savee, A.M. Scheer, D.E. Shallcross, B. Rotavera, E.P.F. Lee, J.M. Dyke, D.K.W. Mok, D.L. Osborn and **C.J. Percival** (2013) Direct Measurements of Conformer-Dependent Reactivity of the Criegee Intermediate CH₃CHOO, *Science*, **340**, 177-180.

70. **O'Shea, S.J.**, Bauguitte, S.J., Gallagher, M.W., Lowry, D. and **Percival, C.J.** (2013) Development of a cavity-enhanced absorption spectrometer for airborne measurements of CH₄ and CO₂. *Atmospheric Measurement Techniques*, **6**, 1095-1109.

69. S. Bezantakos, K. Barmounis, M. Giamarelou, E. Bossioli, M. Tombrou, N. Mihalopoulos, K. Eleftheriadis, J. Kalogiros, J. D. Allan, **A. Bacak, C. J. Percival**, H. Coe, and G. Biskos (2013), Chemical composition and hygroscopic properties of aerosol particles over the Aegean Sea. *Atmospheric Chemistry and Physics*, **13**, 11595-11608.
68. **S. J. O'Shea**, G. Allen, M. W. Gallagher, S. J.-B. Bauguitte, S. M. Illingworth, **M. Le Breton, J. B. A. Muller, C. J. Percival**, A. T. Archibald, D. E. Oram, M. Parrington, P. I. Palmer, and A. C. Lewis (2013) Airborne observations of trace gases over boreal Canada during BORTAS: campaign climatology, air mass analysis and enhancement ratios. *Atmospheric Chemistry and Physics*, **13**, 12451-12467.
67. **Le Breton, M., McGillen, M., Muller, J.B.A., Bacak, A.**, Shallcross, D.E., Xioa, P., Huey, L.G., Tanner, D., Coe, H. and **Percival, C.J.** (2012) Airborne observations of formic acid using a chemical ionisation mass spectrometer, *Atmospheric Measurement Techniques*, **4**, 3029-3039.
66. Lee, E.P.F., Mole, D. K.W., Shallcross, D.E., **Percival, C.J.**, Osborn, D.L., Taatjes, C.A. and Dyke, J.M. (2012) Spectroscopy of the simplest Criegee intermediate CH₂OO: Simulation of the first bands in its electronic and photoelectron spectra, *Chemistry-A European Journal*, **18**, 12411-12423.
65. Taatjes, C.A., Welz, O., Eskola, A., Savee, J.D. Osborn, D.L., Lee, E.P.F., Dyke, J.M., Mok, D. K.W., Shallcross, D.E. and **Percival, C.J.** (2012) Direct Measurement of Criegee Intermediate (CH₂OO) Reactions with Acetone, Acetaldehyde, and Hexafluoroacetone, *Physical Chemistry Chemical Physics*, **14**, 10391-10400. **COVER ARTICLE**
64. **Booth, A.M., Bannan, T., McGillen, M.R.**, Barley, M.H., Topping, D.O., McFiggans, G., Garforth, A. and **Percival, C.J.** (2012) The role of ortho, meta, para isomerism in the sub-cooled liquid vapour pressures of substituted benzoic acids, *RSC Advances*, **2**, 4430-4443.
63. **Ghalaieny, M., Bacak, A., McGillen, M.R.**, Martin, D., Knights, A.V., O'Doherty, S., Shallcross, D.E. and **Percival, C.J.**, (2012) Determination of gas-phase ozonolysis rate coefficients of a number of sesquiterpenes at elevated temperatures using the relative rate method, *Physical Chemistry Chemical Physics*, **14(18)**, 6596-6602
62. **Najera, J.J., Percival C.J.** and Horn A.B., (2012) Infrared spectroscopic evidence for a heterogeneous reaction between ozone and sodium oleate at the gas-aerosol interface: effect of relative humidity, *submitted to International Journal of Chemical Kinetics*
61. **Leather, K.E., McGillen, M.R.**, Cooke, M.C., Utembe, S.R. Archibald, A.T., Jenkin, M.E. Derwent, R.G., Shallcross, D.E., and **Percival, C.J.** (2012) Acid-yield measurements of the gas-phase ozonolysis of ethene as a function of humidity using Chemical Ionisation Mass Spectrometry (CIMS), *Atmospheric Chemistry and Physics*, **12**, 469-479.
60. Welz, O., Savee, J.D., Osborn, D.L., Vasu, S., **Percival, C.J.**, Shallcross, D.E. and Taatjes, C.A. (2012) Reaction of CH₂I with O₂ forms Criegee Intermediate: Direct Measurements of CH₂OO Kinetics, *Science*, **335**, 204-207.
59. **Leather, K.E., Bacak, A. Wamsley, R.**, Archibald, A.T., Husk, A., Shallcross, D.E. and **Percival C.J.** (2012) Temperature and Pressure dependence of the rate coefficient for the reaction between ClO and CH₃O₂ in the gas phase, *Physical Chemistry Chemical Physics*, **14(10)**, 3425-3434.
58. **Muller, J.B.A.**, Dorsey, J.R., Flynn, M., Gallagher, M.W., **Percival, C.J.**, Shallcross, D.E., Roscoe, H.K., Obbard, R.W., Atkinson, H., Lee, J.D., Moller, S.J. and Carpenter, L. J. (2012). Ozone and energy fluxes over Arctic sea ice and snow, *Atmospheric Environment*, **47**, 218-225.

57. **Percival C.J.** and Burke, R. (2011) The atmospheric detergent and the elusive Criegee Biradical, *Chemistry Review*, **93(343)**, 67-72.
56. **Percival, C.J., Bacak, A., McGillen, M.R.,** Cooke, M.C., Archibald, A.T., Huey, L.G., Derwent, R.G. and Shallcross, D.E. (2011) On the impact of new gas-phase kinetic data for the formation of HO₂NO₂ on HO_x, NO_x and HO₂NO₂ levels in the troposphere, *Atmospheric Environment*, **45(35)**, 6414-6422.
55. Copeland, G, Ghost, M.V., Shallcross, D.E., **Percival, C.J.** and Dyke, J.M. (2011) A Study of the Alkene-Ozone reactions, 2,3-dimethyl 2-butene + O₃ and 2-methyl propene + O₃, with Photoelectron Spectroscopy: Measurement of Product Branching Ratios and Atmospheric Implications, *Physical Chemistry Chemical Physics*, **13(39)**, 17461-17473. **COVER ARTICLE**
54. **Nájera, J. J., Wamsley, R.,** Last, D.J., **Leather, K.E., Percival, C.J.** and Horn, A.B., (2011) Heterogeneous oxidation reaction of gas-phase ozone with anthracene in thin films and on aerosols by infrared spectroscopic methods, *International Journal of Chemical Kinetics*, **43(12)**, 694-707.
53. Copeland, G, Ghost, M.V., Shallcross, D.E., **Percival, C.J.** and Dyke, J.M. (2011) A Study of the Ethene-Ozone Reaction with Photoelectron Spectroscopy: Measurement of Product Branching Ratios and Atmospheric Implications, *Physical Chemistry Chemical Physics*, **13(33)**, 14839-14847.
52. **Muller, J. B. A., Smith, C.E.,** Newton, M.I. and **Percival, C.J.** (2011) Evaluation of coated QCM for the detection of atmospheric ozone, *Analyst*, **136(14)**, 2963-2968.
51. **McGillen, M.R., Ghalaieny, M. and Percival, C.J.** (2011) Determination of gas-phase ozonolysis rate coefficients of C₈₋₁₄ terminal alkenes at elevated temperatures using the relative rate method, *Physical Chemistry Chemical Physics*, **13(23)**, 10965-10969.
50. Archibald, A.T., Tonokura, K., Kawasaki, M., **Percival, C. J.** and Shallcross, D.E. (2011). On the impact of HO₂-H₂O complexes in the Marine Boundary Layer: A possible sink for HO₂, *Terrestrial Atmospheric and Oceanic Science*, **22(1)**, 71-78.
49. **Booth, A.M., Montague, W.J.,** Barley, M.H., Topping, D.O., McFiggans, G., Garforth, A. and **Percival, C.J.** (2011) Solid state and sub-cooled liquid vapour pressures of cyclic aliphatic dicarboxylic acids, *Atmospheric Chemistry and Physics*, **11**, 655-665.
48. **McGillen, M.R.,** Archibald, A. T., Carey, T., **Leather, K.E.,** Shallcross, D.E., Wenger J.C. and **Percival, C.J.** (2011) Structure-activity relationship (SAR) for the prediction of gas-phase ozonolysis rate coefficients: an extension towards heteroatomic unsaturated species, *Physical Chemistry Chemical Physics*, **13(7)**, 2842-2849.
47. Petersson, F. K., Martin, D., White, I.R., Henshaw, S. J., Nickless, G., Longley, I., **Percival, C.J.,** Gallagher, M., and Shallcross, D. E. (2010) CityFlux perfluorocarbon tracer experiments, *Atmospheric Chemistry and Physics*, **10**, 4879-4892.
46. **Leather, K.E., McGillen, M.R., Ghalainey, M.,** Shallcross, D.E., **Percival, C.J.** (2011) Temperature-dependent kinetics for the ozonolysis of selected chlorinated alkenes in the gas phase, *International Journal of Chemical Kinetics*, **43(3)**, 120-129.

45. **Muller, J.B.A.**, Gallagher, M.W., **Percival, C.J.**, Coyle, M., Fowler, D. and Nemitz, E.G. (2010) Sources of uncertainty in eddy covariance ozone flux measurements made by dry chemiluminescence fast response analysers, *Atmospheric Measurement Techniques*, **3(1)**, 163-176.
44. **Booth, A.M.**, Barley, M.H., Topping, D.O., McFiggans, G., Garforth, A. and **Percival, C. J.** (2010) Subcooled-liquid vapour pressures of dicarboxylic acids from Knudsen Effusion Mass spectrometry combined with Differential Scanning Calorimetry, *Atmospheric Chemistry and Physics*, **10**, 4879-4892.
43. **Najera, J.**, **Percival, C.J.** and Horn, A.B. (2010) Kinetic studies of the heterogeneous oxidation of maleic and fumaric acid aerosols particles under condition of high relative humidity, *Physical Chemistry Chemical Physics*, **12(37)**, 11417-11427.
42. Bobruzki, K., Blom, M., Braban, C., Coe, H., Famulari, D., Gallagher, M. W., Geddes, J., **Ghalaieny, M.**, Jones, S., **McGillen, M.R.**, Mohacsi, A., Murphy, J., **Percival, C.J.**, Pogany, A., Popescu, R., Rantanen, S., Whitehead, J.M., Sutton, M.A., Nemitz, E.G. (2010) An Intercomparison of eleven ammonia measurement techniques during a field experiment, *Atmospheric Measurement Techniques*, **3**, 91-112.
41. **Leather, K.E.**, **McGillen, M.R.** and **Percival, C.J.** (2010) Temperature-dependent ozonolysis kinetics of selected alkenes in the gas phase: an experimental and structure-activity relationship (SAR) study, *Physical Chemistry Chemical Physics*, **12(12)**, 2935-2943.
40. **Booth, A.M.**, Markus, T., McFiggans, G., **Percival, C.J.**, **McGillen, M.R.**, and Topping, D.O. (2009) Design and construction of a simple Knudsen Effusion Mass Spectrometer (KEMS) system for vapour pressure measurements of low volatility organics, *Atmospheric Measurement Techniques*, **2**, 355-361.
39. **Najera, J.**, **Percival, C.J.** and Horn, A.B. (2009) Infrared spectroscopic studies of the heterogeneous reaction of ozone with dry maleic and fumaric acid aerosol particles, *Physical Chemistry Chemical Physics*, **11(40)**, 9093-9103.
38. **Booth, A.M.**, Topping, D.O., McFiggans, G. and **Percival, C.J.** (2009) Surface tension of mixed inorganics and dicarboxylic acid aqueous solutions at 298.15 K and their importance for cloud activation predictions, *Physical Chemistry Chemical Physics*, **11(36)**, 8021-8028.
37. **Muller, J.B.A.**, Coyle, M., Fowler, D., Gallagher, M.W., Nemitz, E.G. and **Percival, C.J.** (2009) Comparison of ozone fluxes over grassland by gradient and eddy covariance technique, *Atmospheric Science Letters*, **10**, 164-169.
36. Last, D.J., **Najera, J.** **Percival, C.J.** and Horn, A.B. (2009) A comparison of infrared spectroscopic methods for the study of heterogeneous reactions occurring on atmospheric aerosol proxies, *Physical Chemistry Chemical Physics*, **11(37)**, 8214-8225.
35. Last, D.J., **Najera, J.**, **Wamsley, R.**, Jackson, G., **McGillen, M. R.**, **Percival, C.J.** and Horn, A.B. (2009) Ozonolysis of organic compounds and mixtures in solution. Part I: Oleic, maleic, nonanoic and benzoic acids, *Physical Chemistry Chemical Physics*, **11(9)**, 1427-1440.
34. Archibald, A.T., Petit, A.S., **Percival, C.J.**, Harvey, J.N. and Shallcross, D.E. (2009) On the importance of the reaction between OH and RO₂ radicals, *Atmospheric Science Letters*, **10**, 102-108.
33. **Najera, J.**, Fochesatto, J. G., Last, D.J., **Percival, C.J.** and Horn, A.B. (2008) Infrared spectroscopic methods for the study of aerosol particles using White cell optics: Development and characterization of a new aerosol flow tube, *Review of Scientific Instruments*, **79**, 124102-124112.

32. **Percival C.J. and McGillen, M.** (2008) Structure Activity Relationship Methods, *NATO Science for Peace and Security Series –C: Environmental Security*, 47-59.
31. Taatjes, C.A., Meloni, G., Selby, T.M., Trevitt, A.J., Osborn, D.L., **Percival, C.J.** and Shallcross D.E. (2008) Direct Observation of the Gas-Phase Criegee Intermediate (CH_2OO), *Journal of the American Chemical Society*, **130(36)**, 11883-11885.
30. **McGillen, M.R., Percival, C.J.,** Archibald, A.T., Carey, T, Wenger, J.C. and Shallcross, D.E. (2008) Structure-activity relationship for the gas phase ozonolysis of aliphatic alkenes and dialkenes, *Physical Chemistry Chemical Physics*, **10**, 1757-1768.
29. Archibald, A.T. **McGillen, M.R.,** Taatjes, C.A., **Percival, C.J.** and Shallcross, D.E. (2007) The atmospheric transformation of enols: a potential source of carboxylic acids in the urban atmosphere, *Geophysical Research Letters*, **34**, L21801, doi:10.1029/2007GL031032.
28. **McGillen, M.R., Percival, C.J.,** Shallcross D. E. and Harvey, J.N.(2007) Is Hydrogen Abstraction an important pathway in the reaction of alkenes with the OH radical?, *Physical Chemistry Chemical Physics*, **9 (31)**, 4349-4356.
27. **Raventos, M. T., McGillen, M.R.,** Shallcross D. E., and **Percival C.J.** (2007) Kinetics and mechanism of the reaction between $\text{C}_2\text{H}_5\text{O}_2 + \text{HO}_2$, *Physical Chemistry Chemical Physics*, **9 (31)**, 4338-4348.
26. **McGillen, M.R., Percival, C.J.,** Pieterse, G. and Shallcross, D.E. (2007) Predicting arene rate coefficients with respect to hydroxyl and other free radicals: a simple and effective method using a single topological descriptor, *Atmospheric Chemistry and Physics*, **7 (13)**, 3559-3569.
25. **Raventos, M.T., McGillen, M.R.,** Shallcross D.E., and **Percival C.J.** (2007) Kinetics and mechanism of the reaction between $\text{CH}_3\text{O}_2 + \text{HO}_2$, *International Journal of Chemical Kinetics*, **39 (10)**, 571-579.
24. **McGillen, M.R., Percival, C.J.,** Crosier, J., Sanchez-Reyna, G. and Shallcross, D.E. (2006) Can topological indices be used to predict gas-phase rate coefficients of importance to tropospheric chemistry? Reactions of alkenes with OH, NO_3 and O_3 , *Chemosphere*, **65(11)**, 2035-2044.
23. Reynolds, J.C., Last, D.J., **McGillen, M.,** Nijs, A., Horn, A.B., **Percival, C.J.,** Carpenter, C. and Lewis, A.C. (2006) Structural analysis of oligomeric molecules formed from the reaction products of oleic acid ozonolysis, *Environmental Science and Technology*, **40(21)**, 6674-6681.
22. **Stanley, S.M.,** Dodi, I. A., **Evans, C.R.,** Paston, S. J., Reese, R. C., **Percival, C.J.,** McHale, G. and Newton, M.I. (2006) layer guided-acoustic plate mode biosensors for monitoring MHC-peptide interactions, *The Analyst*, **131(8)**, 892-894.
21. **Evans, C.R., Stanley, S.M., Percival, C.J.,** McHale, G. and Newton, M.I. (2006) Lithium tantalate layer guided plate mode sensors, *Sensors and Actuators A*, **132(1)**, 241-244.
20. **McGillen, M.R. Percival, C.J., Raventos-Duran, M.T.,** Sanchez-Reyna, G. and Shallcross, D.E. (2006) Can topological indices be used to predict gas-phase rate coefficients of importance to tropospheric chemistry? *Atmospheric Environment*, **40(14)**, 2488-2500.

19. **Percival, C.J.**; Harrison, T. and Shallcross, D.E. (2006) Catching the cheats: detecting drugs in sports, *Chemistry Review*, **15(4)**, 24-27.
18. **Bacak A., Bardwell M. W., Raventos M. T., Percival C. J.,** Hammer P.D., and Shallcross D.E. (2006) Kinetics of the reaction between $\text{CH}_3\text{O}_2 + \text{NO}_2$, *Chemical Physics Letters*, **419**, 125-129.
17. **Stanley, S.M.,** Newton, M.I., **Percival, C.J.,** McHale, G. and **Evans, C.R.** (2005) A SAW oscillator for monitoring particulate matter in air, *Nondestructive Testing and Evaluation*, **20(4)**, 231-237 .
16. **Percival, C.J.,** Shallcross, D.E., Canosa-Mas, C.E and Dyke, J.M. (2005) Recent advances in the study of radical kinetics. *Journal of Photochemistry and Photobiology A: Chemistry*, **176 (1-3)**, 250–259.
15. **Stanley, S., Brennan, M., Percival, C.J.,** Newton, M.I. and McHale, G. (2005) An Ep-SAW for measurements of particulate matter in air, *Nondestructive Testing and evaluation*, **20(1)**, 3-7.
14. **Bardwell M. W., Bacak A. Raventos M. T., Percival C.J.,** Sanchez-Reyna G., and Shallcross D. E. (2005) Kinetics and mechanism of the $\text{C}_2\text{H}_5\text{O}_2 + \text{NO}$ Reaction: a temperature and pressure dependence study using chemical ionisation mass spectrometry, *International Journal of Chemical Kinetics*, **37(4)**, 253-260.
13. Shallcross D. E., **Raventos M. T., Bardwell M. W., Bacak A.,** Sloman, S. and **Percival C.J.** (2005) A semi-empirical correlation for the rate coefficients for cross and self-reactions of peroxy radicals in the gas-phase, *Atmospheric Environment*, **39(4)**, 763-771.
12. **Bacak A., Bardwell M.W., Raventos M.T., Percival C. J.,** Sanchez-Reyna G., and Shallcross D. E. (2004) Kinetics of the reaction between $\text{CH}_3\text{O}_2 + \text{NO}$: a temperature and pressure dependence study using chemical ionisation mass spectrometry, *Journal of Physical Chemistry A*, **108(48)**, 10681-10687.
11. **Bardwell M. W., Bacak A., Raventos M.T., Percival C. J.,** Sanchez-Reyna G., and Shallcross D. E. (2003) Kinetics of the $\text{HO}_2 + \text{NO}$ reaction: A temperature and pressure dependence study using chemical ionisation mass spectrometry, *Physical Chemistry Chemical Physics*, **5(11)**, 2381-2385.
10. **Stanley S., Percival C.J., Auer M.,** Braithwaite A., Newton M. I., McHale G., and Hayes W. (2003) Detection of polycyclic aromatic hydrocarbons using quartz crystal microbalances, *Analytical Chemistry*, **75(7)**, 1573-1577.
9. **Stanley S., Percival C.J., Morel T.,** Braithwaite A., Newton M.I., McHale G., and Hayes W. (2003) Enantioselective detection of L-serine, *Sensors and Actuators B-Chemical*, **89(1-2)**, 103-106.
8. **Percival C.J., Stanley S.,** Braithwaite A., Newton M.I., and McHale G. (2002) Molecular imprinted polymer coated QCM for the detection of nandrolone, *The Analyst*, **127(8)**, 1024-1026.
7. **Percival C.J., Stanley S., Galle M.,** Braithwaite A., Newton M. I., McHale G., and Hayes W. (2001) Molecular-imprinted, polymer-coated quartz crystal microbalances for the detection of terpenes, *Analytical Chemistry*, **73(17)**, 4225-4228.
6. **Percival, C.J.,** Mossinger, J.C. and Cox, R.A. (1999) The heterogeneous uptake of HI on ice. *Physical Chemistry Chemical Physics*, **1**, 4565-4571.
5. Biggs, P., Canosa-Mas, C.E. **Percival, C.J.,** Wayne R.P. and Shallcross, D.E. (1999) Kinetics and mechanisms of the self reaction of $\text{CH}_3\text{-X}_n\text{O}_2$ (where X = Cl or Br) radicals at 298K, *International Journal of Chemical Kinetics*, **31**, 433-444.

4. **Percival, C.J.**, Smith, G.D., Molina, L.T. and Molina, M.J. (1997) A reevaluation of the kinetics of the reaction of $\text{ClO} + \text{NO}_2$ over the pressure range of 150 to 600 Torr and the temperature range of 213 to 300K, *Journal of Physical Chemistry*, **101**, 8830-8833.
3. Biggs, P., Canosa-Mas, C.E., Fracheboud, J.-M., **Percival, C.J.**, Wayne, R.P. and Shallcross, D.E. (1997) Kinetics of the self reaction of CF_3O_2 and its reaction with ozone, *Journal of the Chemical Society Faraday Transactions*, **93**, 379-385.
2. Canosa-Mas, C. E., Daele, V., King, M., Lopez, R., **Percival, C. J.**, Wayne, R.P., Shallcross D.E. and Pyle, J. (1996) Is the reaction between $\text{CH}_3\text{C}(\text{O})\text{O}_2$ and NO_3 important in the night-time troposphere, *Journal of the Chemical Society Faraday Transactions*, **92**, 2211-2222.
1. **Percival, C.J.**, Marston, G. and Wayne, R.P. (1995) Correlations between rate parameters and calculated molecular properties in the reaction of the hydroxyl radical with hydrofluorocarbons, *Atmospheric Environment*, **29**, 305-311.

The holding of an office in a learned society or professional body.

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|------------|---|
| 2015 - | Treasurer of the gas kinetics group of the Royal Society of Chemistry |
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2006-2009 Member of School Teaching Committee, School of Earth Atmospheric and Environmental Sciences, University of Manchester, UK.

2005-2017 Member of School Safety Committee, School of Earth Atmospheric and Environmental Sciences, University of Manchester, UK.

2005- 2010 Member of School Computing Committee, School of Earth Atmospheric and Environmental Sciences, University of Manchester, UK.

2003-2017 Radiological Protection Supervisor for Centre for Atmospheric Science, School of Earth Atmospheric and Environmental Sciences, University of Manchester, UK.

D. Knowledge and Technology Transfer

Creative or innovative work

Two patents awarded

Method and apparatus for monitoring atmospheric particulate matter, M. I. Newton, C. J. Percival and G. McHale, UKPA No: *NOTA/P23775GB* (2001).

Molecular imprinted coated acoustic wave devices for the detection of steroids, C. J. Percival, S.M. Stanley, A. Braithwaite, M. I. Newton, G. McHale, UKPA No: *NOTA/P24855GB* (2001).