

Publications Relevant to the AOT-100 Aerosol Optical Tweezers

General reviews on optical manipulation of aerosol

- (1) Wills, J. B.; Knox, K. J.; Reid, J. P. Optical Control and Characterisation of Aerosol. *Chem. Phys. Lett.* 2009, 481, 153–165.
- (2) Reid, J. P.; Particle Levitation and Laboratory Scattering. *J. Quant. Spectrosc. Radiat. Transf.* 2009, 110, 1293–1306.
- (3) Krieger, U. K.; Marcolli, C.; Reid, J. P. Exploring the Complexity of Aerosol Particle Properties and Processes Using Single Particle Techniques. *Chem. Soc. Rev.* 2012, 41, 6631–6662.

Optical manipulation of arrays of aerosol droplets in optical landscapes

- (1) Butler, J. R.; Wills, J. B.; Mitchem, L.; Burnham, D. R.; McGloin, D.; Reid, J. P. Spectroscopic Characterisation and Manipulation of Arrays of Sub-Picolitre Aerosol Droplets. *Lab Chip* 2009, 9, 521–528.
- (2) Wills, J. B.; Butler, J. R.; Palmer, J.; Reid, J. P. Using Optical Landscapes to Control, Direct and Isolate Aerosol Particles. *Phys. Chem. Chem. Phys.* 2009, 11, 8015–8020.

Measurements of droplet size and complex refractive index

- (1) Preston, T. C.; Reid, J. P. Accurate and Efficient Determination of the Radius, Refractive Index and Dispersion of a Weakly Absorbing Spherical Particle Using Whispering Gallery Modes. *J. Opt. Soc. Am. B* 2013, 30, 2113–2122.
- (2) Miles, R. E. H.; Walker, J. S.; Burnham, D. R.; Reid, J. P. Retrieval of the Complex Refractive Index of Aerosol Droplets from Optical Tweezers Measurements. *Phys. Chem. Chem. Phys.* 2012, 14, 3037–3047.

Measurements of droplet viscosity and surface tension

- (1) Power, R. M.; Simpson, S. H.; Reid, J. P.; Hudson, A. J. The Transition from Liquid to Solid-Like Behaviour in Ultrahigh Viscosity Aerosol Particles. *Chem. Sci.* 2013, 4, 2597–2604.
- (2) Power, R. M.; Reid, J. P. Probing the Micro-Rheological Properties of Aerosol Particles Using Optical Tweezers. *Reports Prog. Phys.* 2014, 77, 074601.

Investigations of aerosol particle interactions and coalescence

- (1) Power, R. M.; Burnham, D. R.; Reid, J. P. Toward Optical-Tweezers-Based Force Microscopy for Airborne Microparticles. *Appl. Opt.* 2014, 53, 8522–8534.
- (2) Power, R. M.; Reid, J. P.; Anand, S.; McGloin, D.; Almohammed, A.; Mistry, N. S.; Hudson, A. J.; Almohamed, A.; Downie, M. Observation of the Binary Coalescence and Equilibration of Micrometer-Sized Droplets of Aqueous Aerosol in a Single-Beam Gradient-Force Optical Trap. *J. Phys. Chem. A* 2012, 116, 8873–8884.

Measurements of water condensation and evaporation kinetics from aerosol droplets, including from glassy particles

- (1) Miles, R. E. H.; Knox, K. J.; Reid, J. P.; Laurain, A. M. C.; Mitchem, L. Measurements of Mass and Heat Transfer at a Liquid Water Surface During Condensation or Evaporation of a Sub-Nanometre Thickness Layer of Water. *Phys. Rev. Lett.* 2010, 105, 116101.
- (2) Bones, D. L.; Reid, J. P.; Lienhard, D. M.; Krieger, U. K. Comparing the Mechanism of Water Condensation and Evaporation in Glassy Aerosol. *Proc. Natl. Acad. Sci. U. S. A.* 2012, 109, 11613–11618.

Studies of phase separations in aerosol droplets and particle morphology

- (1) Stewart, D.; Cai, C.; Nayler, J.; Preston, T. C.; Reid, J. P.; Krieger, U.; Marcolli, C.; Zhang, Y.-H. Liquid-Liquid Phase Separation in Mixed Organic/Inorganic Single Aqueous Aerosol Droplets. *J. Phys. Chem. A* 2015, 119, 4177–4190.
- (2) Reid, J. P.; Dennis-Smith, B. J.; Kwamena, N.-O. A.; Miles, R. E. H.; Hanford, K. L.; Homer, C. J. The Morphology of Aerosol Particles Consisting of Hydrophobic and Hydrophilic Phases: Hydrocarbons, Alcohols and Fatty Acids as the Hydrophobic Component. *Phys. Chem. Chem. Phys.* 2011, 13, 15559–15572.

Studies of heterogeneous aerosol chemistry

- (1) Dennis-Smith, B. J.; Miles, R. E. H.; Reid, J. P. Oxidative Aging of Mixed Oleic Acid/sodium Chloride Aerosol Particles. *J. Geophys. Res.* 2012, 117, D20204.
- (2) Dennis-Smith, B. J.; Marshall, F. H.; Miles, R. E. H.; Preston, T. C.; Reid, J. P. Volatility and Oxidative Aging of Aqueous Maleic Acid Aerosol Droplets and the Dependence on Relative Humidity. *J. Phys. Chem. A* 2014, 118, 5680–5691.

Determination of component vapour pressures and hygroscopic growth

- (1) Cai, C.; Stewart, D. J.; Preston, T. C.; Walker, J. S.; Zhang, Y.-H.; Reid, J. P. A New Approach to Determine Vapour Pressures and Hygroscopicities of Aqueous Aerosols Containing Semi-Volatile Organic Compounds. *Phys. Chem. Chem. Phys.* 2014, 16, 3162–3172.
- (2) Cai, C.; Stewart, D. J.; Reid, J. P.; Zhang, Y.; Ohm, P.; Dutcher, C. S.; Clegg, S. L. Organic Component Vapor Pressures and Hygroscopicities of Aqueous Aerosol Measured by Optical Tweezers. *J. Phys. Chem. A* 2015, 119, 704–718.

Studies of aerosol used in drug delivery to the lungs

- (1) Haddrell, A. E.; Davies, J. F.; Miles, R. E. H.; Reid, J. P.; Dailey, L. A.; Murnane, D. Dynamics of Aerosol Size during Inhalation: Hygroscopic Growth of Commercial Nebulizer Formulations. *Int. J. Pharm.* 2014, 463, 50–61.
- (2) Haddrell, A. E.; Hargreaves, G.; Davies, J. F.; Reid, J. P. Control over Hygroscopic Growth of Saline Aqueous Aerosol Using Pluronic Polymer Additives. *Int. J. Pharm.* 2013, 443, 183–192.