

# Programme

## Faraday Discussion 165: Tropospheric aerosol - formation, transformation, fate and impacts 22-24 July, 2013 Leeds, UK

Monday 22 July

11:00	<b>Registration</b>
12.45	<b>Welcome and Introductions</b> Gordon McFiggans
13.00 <b>Paper 1</b>	<b>Introductory Lecture:</b> Spyros Pandis* <i>Carnegie Mellon University, USA</i>
<b>Session 1</b>	<b>Formation</b> Session chairs: Astrid Kiendler-Scharr / Gordon McFiggans
14:00 <b>Paper 2</b>	<b>Quantitative and Time-Resolved Nanoparticle Composition Measurements During New Particle Formation</b> Bryan R. Bzdek, Andrew J. Horan, M. Ross Pennington, Joseph W. DePalma, Jun Zhao, Coty N. Jen, David R. Hanson, James N. Smith, Peter H. McMurry and Murray V. Johnston* <i>University of Delaware, USA</i>
<b>Paper 3</b>	<b>Regional and Global Impacts of Criegee Intermediates on Atmospheric Sulphuric Acid Concentrations and Friday Steps of Aerosol Formation</b> Carl J Percival*, Oliver Welz, Arkke J. Eskola, John D. Savee, David L. Osborn, David O. Topping, Douglas Lowe, Steven R. Utembe, Asan Bacak, Gordon McFiggans, Michael C. Cooke, Ping Xiao, Alexander T. Archibald, Michael E. Jenkin, Richard G. Derwent, Ilona Riipinen, Daniel W. K. Mok, Edmond P. F. Lee, John M. Dyke, Craig A. Taatjes and Dudley E. Shallcross <i>University of Manchester, UK</i>
<b>Paper 4</b>	<b>Comparing simulated and experimental molecular cluster distributions</b> Tinja Olenius, Siegfried Schobesberger, Oona Kupiainen, Alessandro Franchin, Heikki Junninen, Ismael K. Ortega, Theo Kurtén, Ville Loukonen, Douglas R. Worsnop, Markku Kulmala and Hanna Vehkamäki* <i>University of Helsinki, Finland</i>
15:30	Afternoon Tea
16:00 <b>Paper 5</b>	<b>How Do Organic Vapors Contribute to New-Particle Formation?</b> Neil M Donahue*, Ismael K. Ortega, Wayne Chuang, Ilona Riipinen, Francesco Riccobono, Siegfried Schobesberger, Josef Dommen, Urs Baltensperger, Markku Kulmala, Douglas R Worsnop and Hanna Vehkamäki <i>Carnegie Mellon University, USA</i>
<b>Paper 6</b>	<b>Modeling the influence of alkane molecular structure on</b>

	<b>secondary organic aerosol formation</b> Bernard Aumont,* Marie Camredon, Camille Mouchel Vallon, Stéphanie La, Farida Ouzebidour, Richard Valorso, Julia Lee Taylor and Sasha Madronich <i>University Paris est Creteil, France</i>
<b>Paper 7</b>	<b>Organic Aerosol Formation Photo-enhanced by the Formation of Secondary Photo-sensitizers in ageing Aerosols</b> Kifle Z. Aregahegn, Barbara Nozière* and Christian George <i>CNRS/IRCELYon, France</i>
<b>Paper 8</b>	<b>Halogen-induced organic aerosol (XOA): A study on ultra-fine particle formation and time-resolved chemical characterization</b> Johannes Ofner, Katharina Kamilli, Andreas Held* Bernhard Lendl and Cornelius Zetzsch <i>Atmospheric Chemistry Research Laboratory, University of Bayreuth, Germany</i>
18:00 – 19.30	Poster Session and Wine Reception

Tuesday 23 July

<b>Session 2</b>	<b>Transformation and Fate 1</b> Session Chairs: Jonathan Reid / Hartmut Herrmann
09:00 <b>Paper 9</b>	<b>Average chemical properties and potential formation pathways of highly oxidized organic aerosol</b> Kelly E. Daumit*, Sean H. Kessler and Jesse H. Kroll <i>MIT, USA</i>
<b>Paper 10</b>	<b>Atmospheric aerosols in Amazonia and land use change: from natural biogenic to biomass burning conditions</b> Paulo Artaxo*, Luciana V. Rizzo, Joel F. Brito, Henrique M. J. Barbosa, Andrea Arana, Elisa T. Sena, Glauber G. Cirino, Scot T. Martin and Meinrat O. Andreae <i>University of São Paulo, Brazil</i>
<b>Paper 11</b>	<b>Sulfate radical-initiated formation of isoprene-derived organosulfates in atmospheric aerosols</b> J. Schindelka*, Y. Iinuma, D. Hoffmann and H. Herrmann <i>TROPOS Leipzig, Germany</i>
10:30	Morning Coffee
11:00 <b>Paper 12</b>	<b>Formation of secondary organic aerosol tracers from the photooxidation of isoprene-derived alkene diols under low-NO<sub>x</sub> conditions</b> Wu Wang*, Yoshiteru Iinuma, Ariane Kahnt, Oxana Ryabtsova, Anke Mutzel, Reinhilde Vermeylen, Pieter Van der Veken, Willy Maenhaut, Hartmut Herrmann, and Magda Claeys <i>University of Antwerp, Belgium</i>
<b>Paper 13</b>	<b>Including phase separation in a unified model to calculate partitioning of vapours to mixed inorganic-organic aerosol particles</b> David Topping*, Mark Barley and Gordon McFiggans <i>University of Manchester, UK</i>
<b>Paper 14</b>	<b>Morphologies of mixed organic/inorganic/aqueous aerosol droplets</b> Mijung Song, Claudia Marcolli, Ulrich Krieger*, Daniel M Lienhard and Thomas Peter <i>ETH Zurich, Switzerland</i>
12:30	Close of Session & Lunch
<b>Session 3</b>	<b>Transformation and Fate 2</b> Session Chairs: Alistair Lewis / Jonathan Reid
13:30 <b>Paper 15</b>	<b>Fluorescent lifetime imaging of atmospheric aerosols: A direct probe of aerosol viscosity</b> Neveen A. Hosny, Clare Fitzgerald, Changlun Tong, Markus Kalberer, Marina K. Kuimova and Francis Pope* <i>University of Birmingham, UK</i>
<b>Paper 16</b>	<b>Aqueous aerosol SOA formation: Impact on aerosol physical properties</b> Joseph L. Woo, Derek D. Kim, Allison N. Scheier, Ruizhi Li and V. Faye McNeill* <i>Columbia University, USA</i>
<b>Paper 17</b>	<b>Online and Offline Mass Spectrometric Study of the Impact of Oxidation and Ageing on Glyoxal Chemistry and Uptake onto Ammonium Sulfate Aerosols</b>

	Jacqueline F. Hamilton*, M. Teresa Baeza-Romero, Emanuela Finessi, Andrew R. Rickard, Robert M. Healy, Salvatore Peppe, Thomas J. Adams, Mark J. S. Daniels, Stephen M. Ball, Iain C. A. Goodall, Paul S. Monks, Esther Borrás, Amalia Muñoz <i>University of York, UK</i>
15:00	Afternoon Tea
15:30 <b>Paper 18</b>	<b>Contact freezing efficiency of mineral dust aerosols studied in an electrodynamic balance: Quantitative size and temperature dependence for illite particles</b> Nadine Hoffmann, Denis Duft, Alexei Kiselev and Thomas Leisner* <i>Karlsruhe Institute of Technology, Germany</i>
<b>Paper 19</b>	<b>Kinetic limitations in gas-particle reactions arising from slow diffusion in secondary organic aerosol</b> Shouming Zhou, Manabu Shiraiwa, Robert D. McWhinney, Ulrich Poschl and Jonathan P.D. Abbatt* <i>University of Toronto, Canada</i>
<b>Paper 20</b>	<b>Tropospheric Aerosol as Reactive Intermediate</b> Agustin J. Colussi*, Shinichi Enami, Akihiro Yabushita, Michael R. Hoffmann, Wei-Guang Liu, Himanshu Mishra and William A. Goddard, III <i>California Institute of Technology, USA</i>
17:00	Close of sessions
19:00	Pre-Dinner Drinks
19:30	Conference Dinner

**Wednesday 24 July**

<b>Session 4</b>	<b>Impacts</b> Session chairs: Gordon McFiggans / Alistair Lewis
09:30 <b>Paper 21</b>	<b>The effects of aircraft on climate and pollution. Part II: 20-year impacts of exhaust from all commercial aircraft worldwide treated individually at the subgrid scale</b> Mark Jacobson*, J. T. Wilkerson, A. D. Naiman and S. K. Lele <i>Stanford University, USA</i>
<b>Paper 22</b>	<b>The magnitude and sources of uncertainty in global aerosol</b> Kenneth S. Carslaw*, Lindsay A. Lee, Carly L. Reddington, Graham W. Mann and Kirsty J. Pringle <i>University of Leeds, UK</i>
10:30	Morning Coffee
11:00 <b>Paper 23</b>	<b>Brown carbon formation from ketoaldehydes of biogenic monoterpenes</b> Tran B. Nguyen, Alexander Laskin, Julie Laskin and Sergey A. Nizkorodov* <i>University of California, Irvine, USA</i>
<b>Paper 24</b>	<b>A Water Activity Based Model of Heterogeneous Ice Nucleation Kinetics for Freezing of Water and Aqueous Solution Droplets</b> Daniel A. Knopf* and Peter A. Alpert <i>Stony Brook University, USA</i>
12:00	<b>Concluding remarks lecture</b> Dan Murphy* <i>NOAA ESRL Chemical Sciences Division, USA</i>
12:45	<b>Acknowledgements</b>
13:00	Close of Meeting and Lunch