

## Faraday Discussion 137: The Spectroscopy and Dynamics of Microparticles

2 – 4 July 2007, University of Bristol, UK

### Programme

#### Monday 2 July 2007

11:00	<b>Registration</b>
12:30	<b>Lunch</b>
13:45	<b>Welcome and Introductions</b> Mike Ashfold, <i>University of Bristol</i>
<b>Session 1</b>	<b>Spectroscopic Techniques</b>
	Session Chair: Paul Davies, <i>University of Cambridge, UK</i>
14:00 <b>Paper 1</b>	<b>Introductory Lecture: Linear and non-linear spectroscopy of microparticles: basic principles, new techniques, and promising applications</b> Richard Chang, <i>Yale University, USA</i>
15:00 <b>Paper 2</b>	<b>Identification of biological microparticles using ultrafast depletion spectroscopy</b> Jean-Pierre Wolff, <i>University of Geneva, Switzerland</i>
<b>Paper 3</b>	<b>Vibrational exciton coupling in pure and mixed sulfur dioxide aerosols</b> Ruth Signorell, <i>University of British Columbia, Canada</i>
16:00	<b>Afternoon Tea</b>
16:30 <b>Paper 4</b>	<b>Microparticle photophysics illuminates viral bio-sensing</b> Steve Arnold, <i>Polytechnic University, New York, USA</i>
<b>Paper 5</b>	<b>Resonance based light scattering techniques for investigation of microdroplet processes</b> Asit K Ray*, Venket Devarakonda and Zhiqiang Gao, <i>University of Kentucky, USA</i>
17:30	<b>Close of Sessions</b>
18:00	<b>Dinner at the Hawthorns</b>
19:00-20:30	<b>Poster Session and Wine Reception</b> <b>Sponsored by the Bristol Colloid Centre and Faraday Learning</b>

**Tuesday 3 July 2007**

<b>Session 2</b>	<b>Dusty Plasmas and X-Ray Characterisation</b>
	Session Chair: John Goree, <i>University of Iowa, USA</i>
09.30 <b>Paper 6</b>	<b>Charge and charging of nanoparticles in a SiH<sub>4</sub> rf-plasma</b> Winfred Stoffels, <i>Eindhoven University of Technology, The Netherlands</i>
<b>Paper 7</b>	<b>Rapid transport of nano-particles having a fractional elemental charge on average in capacitively coupled rf discharges by amplitude modulating discharge voltage</b> Masaharu Shiratani, <i>Kyushu University, Japan</i>
<b>Paper 8</b>	<b>Interaction between single dust grains and ions or electrons: laboratory measurements and their consequences for the dust dynamics</b> Jirka Pavlu, <i>Charles University, Czech Republic</i>
11:00	<b>Morning Coffee</b>
11.30 <b>Paper 9</b>	<b>Microparticles in plasmas as diagnostic tools and substrates</b> Holger Kersten, <i>University of Kiel, Germany</i>
<b>Paper 10</b>	<b>Elastic light scattering from free sub-micron particles in the soft x-ray regime</b> H Bresch, B Wassermann, B Langer, C Graf, R Flesch, U Becker, B Österreicher, T Leisner, E Rühl*, <i>Universität Berlin, Germany</i>
12.30	<b>Close of Session and Lunch</b>
<b>Session 3</b>	<b>Atmospheric Aerosols</b>
	Session Chair: Tony Cox, <i>University of Cambridge, UK</i>
14:00 <b>Paper 11</b>	<b>The influence of small aerosol on the properties of water and ice clouds</b> Tom Choularton, <i>University of Manchester, UK</i>
<b>Paper 12</b>	<b>Metastable nitric acid hydrates – possible constituents of polar stratospheric clouds?</b> Hinrich Grothe*, Heinz Tizek and Ismael K Ortega Colomer, <i>Vienna University of Technology, Austria</i>
<b>Paper 13</b>	<b>Is the atmosphere an aerosol? – A look at emissions and variability</b> Ruprecht Jaenicke, <i>Universität Mainz, Germany</i>
15:30	<b>Afternoon Tea</b>

16:00 <b>Paper 14</b>	<b>Understanding hygroscopic growth and phase transformation of aerosols using single particle Raman spectroscopy in an electrodynamic balance</b> Alex K Y Lee, T Y Ling and Chak K Chan* , <i>Hong Kong University of Science and Technology, Hong Kong</i>
<b>Paper 15</b>	<b>Deliquescence behaviour of single levitated ternary salt/carboxylic acid/ water microdroplets</b> L Treuel*, S Schulze, T Leisner and R Zellner, <i>University of Duisburg-Essen, Germany</i>
<b>Paper 16</b>	<b>The complex refractive index of atmospheric and model humic-like substances (HULIS) retrieved by a cavity ring down aerosol spectrometer (CRD-AS)</b> E Dinar, A Abo Riziq, C Spindler, C Erlick, G Kiss, and Y Rudich* , <i>Weizmann Institute, Israel</i>
17:30	<b>Close of sessions</b>
19:00	<b>Pre-Dinner Drinks</b>
19:30	<b>Conference Dinner at the Victoria Rooms</b>

Wednesday 4 July 2007

Session 4	Particle Manipulation and Characterisation
	Session Chair: Paul Kaye, <i>University of Hertfordshire, UK</i>
09:00 Paper 17	<b>Characterization of microparticles with driven optical tweezers</b> Paul Bartlett, <i>University of Bristol, UK</i>
Paper 18	<b>Optical manipulation of airborne particles: techniques and applications</b> D McGloin*, D R Burnham, M D Summers, D Rudd, J Buchanan, N Dewar and S Anand, <i>University of St Andrews, UK</i>
Paper 19	<b>In situ comparative measurements of the properties of aerosol droplets of different chemical composition</b> Jonathan Reid, <i>University of Bristol, UK</i>
10:30	<b>Morning Coffee</b>
11:00 Paper 20	<b>The spectroscopy and chemical dynamics of microparticles explored using an ultrasonic trap</b> N J Mason*, A Dawes, E A Drage, S M Webb, R McPheat and G Hayes, <i>The Open University, UK</i>
Paper 21	<b>Using dynamic light scattering to characterize mixed phase single particles levitated in a quasi-electrostatic balance</b> U K Krieger* and A Zardini, <i>Institute for Atmospheric and Climate Science, Switzerland</i>
Paper 22	<b>Oxidation of biogenic and water-soluble compounds in aqueous and organic aerosol droplets by ozone: A kinetic and product analysis approach using laser Raman tweezers</b> Martin D King*, Katherine C Thompson, Andrew D Ward, Christian Pfrang and Brian Hughes, <i>Royal Holloway University of London, UK</i>
12:30 Paper 23	<b>Concluding Remarks</b> Paul Davidovits, <i>Boston College, USA</i>
13:00	<b>Close of meeting</b>