Manchester International Symposium, 19th to 21st June 2019

"Highly Excited States, Many-body and Non-covalent Interactions"

Local Organisers:
Richard Henchman
Nick Lockyer
Aqsa Aziz (Co-ordinator)
Margarita Cairns
Amy Connoly
Klaudia Januszewska
symposiumjune19@manchester.ac.uk

Concept of the Manchester International Symposium

as recommended by The International Advisory Board:

Session Chairs and Speakers have the same time for their introduction/presentation. Each presentation is followed by a directly related brief discussion. After the last presentation of the session follows an open-floor discussion on the session subject, similar to the format of a *Faraday Discussion Meeting* (without the submitted manuscripts). The presentations are ten minutes, strongly focussed on one scientific message.
Accordingly, the scientific programme consists of ten sessions, A1 to E2. Each session Chair will have fifteen minutes to choose from introducing the session subject, providing a historical context, presenting current research, while providing an engaging and enjoyable contribution. The session speakers are asked to focus their contributions into ten minutes, plus a five minutes discussion, followed by an open discussion about the session (with contributions from the floor encouraged, two slides max. per contributor). One aim of the Symposium is to celebrate Klaus Müller-Dethlefs becoming Emeritus.

Sponsors

Scientific Program

Tuesday 18th June 2019, Pre-Symposium
3:00 – 5:00pm: Guided tour to the Photon Science Institute and the Henry Royce Institute, University of Manchester

8pm Dinner, Pin Wei Restaurant, 28 Princess Street, Chinatown, Manchester M1 4LB

Wednesday 19th June 2019
Photon Science Institute, Alan Turing Building, 3rd floor Seminar Room 3.306/3.307
10am – 1:30pm: Health & Safety Induction and Registration
12noon – 1:30pm: Lunch, Room 3.306/07

Chemistry Building, Lecture Theatre G.53:

1:55 – 2:00pm **Welcome:** Nick Lockyer and Richard Henchman
Opening Remarks: Dan Neumark

2:00 – 5:40pm **Non-covalent Interactions: A Challenge to Experiment and Theory**

2:00 – 3:35pm **Session A1**

2:00 – 2:15pm Otto Dopfer, **Chair**
Technische Universität Berlin, Germany

2:15 – 2:25pm Pavel Hobza
Academy of Sciences of the Czech Republic, Prague, Czech Republic
Electronic structure of Fe(II)-porphine-like molecules and their complexes: theoretical and experimental study

2:25 – 2:30pm ***Discussion***

2:30 – 2:40pm Yasuhiro Ohshima
Tokyo Institute of Technology, Tokyo, Japan
Time- and frequency-domain study on intermolecular vibration

2:40 – 2:45pm ***Discussion***

2:45 – 2:55pm Gert von Helden
Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany
Small anionic molecules and complexes in helium droplets

2:55 – 3:00pm ***Discussion***

3:00 – 3:10pm Shun-ichi Ishiuchi
Tokyo Institute of Technology, Yokohama, Japan
Protonation site switching in hydrated nicotine studied by cold ion trap infrared spectroscopy

3:10 – 3:15pm ***Discussion***

3:15 – 3:35pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

3:35 – 4:05pm **Refreshment break, Chemistry Concourse**

4:05 – 5:40pm **Session A2**

4:05 – 4:20pm Masaaki Fujii, **Chair**
Tokyo Institute of Technology, Yokohama, Japan

4:20 – 4:30pm Sotiris Xantheas
Pacific Northwest National Laboratory, Richland, WA, USA
Recent advances in hydrogen bonded and non-covalent interactions

4:30 – 4:35pm ***Discussion***

4:35 – 4:45pm Oleg Boyarkine
École Polytechnique Fédérale, Lausanne, Suisse
Making sugar isomers visible in the UV via hydrogen-bonding

4:45 – 4:50pm ***Discussion***

4:50 – 5:00pm Kenji Sakota
Osaka University, Osaka, Japan
Fluorescence enhancement caused by the excitation light confinement in a single microdroplet

5:00 – 5:05pm ***Discussion***

5:05 – 5:20pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

5:20 – 5:40pm **Session A3:** Poster Hot-Topic introductions
Ed Grant, **Chair**

Change location from Chemistry Building back to Alan Turing Building

Photon Science Institute, Alan Turing Building, 3rd floor Seminar Room, 3.306/3.307

6:00 – 7:15pm **Reception**

8pm Dinner: 20 Stories Restaurant https://20stories.co.uk

No 1 Spinningfields, 1 Hardman Square, Manchester, M3 3EB

Thursday 20th June 2019
All sessions in the Manchester Institute of Biotechnology (MIB)

8:30am **Refreshments and registration, MIB Concourse**

MIB Lecture Theatre:

9:00 – 10:15am **Session B1: Photo-detachment and Photo-chemistry**

9:00 – 9:15am Tony Stace, **Chair**
University of Nottingham, UK

9:15 – 9:25am Caroline Dessent
University of York, UK
Illuminating sunscreen photochemistry via gas-phase measurements

9:25 – 9:30am ***Discussion***

9:30 – 9:40am Lai-Sheng Wang
Brown University, RI, USA
Non-covalent, highly excited dipole-bound states and resonantly-enhanced photoelectron imaging of cryogenically-cooled anions

9:40 – 9:45am ***Discussion***

9:45 – 9:55am Xuebin Wang
Pacific Northwest National Laboratory, Richland, WA, USA
Probing cluster acidity using temperature-controlled anion photoelectron spectroscopy

9:55 – 10:00am ***Discussion***

10:00 – 10:15am ***Open Discussion with floor contributions (2 slides max. per contribution)***

10:15 – 11:00am **Refreshment break**

11:00 – 12:15pm **Session B2: Time-resolved Dynamics**

11:00 – 11:15am Mats Larsson, **Chair**
Stockholms Universitet, Stockholm, Sweden

11:15 – 11:25am Marc Vrakking
Max-Born-Institut, Berlin, Germany
Time-resolved core-level spectroscopy

11:25 – 11:30am ***Discussion***

11:30 – 11:40am Frank Stienkemeier
Universität Freiburg, Germany
Coherent time-resolved spectroscopy at gas-phase targets up to XUV photon energies

11:40 – 11:45am ***Discussion***

11:45 – 11:55am Susanne Ullrich
University of Georgia, Athens, USA
Intersystem crossing dynamics in thiouracils studied by time-resolved photoelectron spectroscopy: micro-environmental effects due to the sulphur position

11:55 – 12:00noon ***Discussion***

12:00 – 12:15pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

12:30pm **Poster set-up and preview, MIB Concourse**
Lunch, MIB Concourse

2:00 – 3:20pm **Session C1: Time-resolved Dynamics and Photo-excitation**
Mats Larsson, **Chair**
Stockholms Universitet, Stockholm, Sweden

2:00 – 2:10pm Dan Neumark
University of California, Berkeley, CA, USA
Mapping out curve-crossing dynamics in IBr with attosecond transient absorption

2:10 – 2:15pm ***Discussion***

2:15 – 2:25pm Kenta Mizuse
Tokyo Institute of Technology, Tokyo, Japan
High-precision rotational wave packet imaging study of dynamics and structures of molecular clusters

2:25 – 2:30pm ***Discussion***

2:30 – 2:40pm Eberhard Riedle
Universität München, Germany
From ultrafast photo-physics to the complete temporal resolution of a complex chemical reaction

2:40 – 2:45pm ***Discussion***

2:45 – 2:55pm Allan Cheung
University of Hong Kong, Hong Kong
Electronic transitions of ScO in the UV region

2:55 – 3:00pm ***Discussion***

3:00 – 3:20pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

3:20 – 3:50pm **Refreshment break, MIB Concourse**

3:50 – 5:25pm **Session C2: Many-Body Interactions: Ultra-cold Plasma**

3:50 – 4:05pm Tim Softley, **Chair**
University of Birmingham, UK

4:05 – 4:15pm Ed Grant
University of British Columbia, Vancouver, Canada
Many-body physics with ultracold plasmas: Quenched randomness and localization

4:15 – 4:20pm ***Discussion***

4:20 – 4:30pm Kenji Ohmori
Institute for Molecular Science, Okazaki, Japan
Metal-like Rydberg gas: A new platform for ultrafast quantum simulation and computing

4:30 – 4:35pm ***Discussion***

4:35 – 4:45pm Clément Hainaut
Universität Heidelberg, Germany
Glassy dynamics in a disordered quantum spin system

4:45 – 4:50pm ***Discussion***

4:50 – 5:00pm Tim de Jongh
Radboud University, Nijmegen, Netherlands
State-to-state controlled collisions approaching the Wigner Regime

5:00 – 5:05pm ***Discussion***

5:05 – 5:25pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

MIB concourse:
6:00 – 7:30pm **Poster session and reception**

8pm Dinner, Pin Wei Restaurant, 28 Princess Street, Chinatown, Manchester M1 4LB

Friday **21st June 2019**
All sessions in the Manchester Institute of Biotechnology (MIB)

8:30am **Refreshments, MIB Concourse**

MIB Lecture Theatre:

9:00 – 10:35am **Session D1: Photoionization and Highly-excited States**

9:00 – 9:15am Ingo Fischer, **Chair**
Universität Würzburg, Germany

9:15 – 9:25am Wen-Bih Tzeng
Institute of Atomic and Molecular Sciences, Taipei, Taiwan
Mass-Analysed Threshold Ionization Spectroscopy of substituted benzenes and sandwich-type organometallic complexes

9:25 – 9:30am ***Discussion***

9:30 – 9:40am Richard Tuckett
University of Birmingham, UK
Threshold photoelectron and electron-ion coincidence spectroscopies: past, present and future.

9:40 – 9:45am ***Discussion***

9:45 – 9:55am Frédéric Merkt
Eidgenössische Technische Hochschule, Zürich, Switzerland
Precision measurements of ionisation energies of atoms and molecules: current limits and perspectives

9:55 – 10:00am ***Discussion***

10:00 – 10:10am Chan-Ho Kwon
Kangwon National University, Chuncheon, Korea
Identification of conformers and their cations by high-resolution VUV-MATI spectroscopy

10:10 – 10:15am ***Discussion***

10:15 – 10:35am ***Open Discussion with floor contributions (2 slides max. per contribution)***

10:35 – 11:05am **Refreshment break, MIB Concourse**

11:05 – 12:20pm **Session D2: Advances for Spectroscopy**

11:05 – 11:20am Ivan Powis, **Chair**
University of Nottingham, UK

11:20 – 11:30am Andrew Orr-Ewing
University of Bristol, UK
Ultrafast transient absorption spectroscopy of photochemical dynamics in solution

11:30 – 11:35am ***Discussion***

11:35 – 11:45am Knut Asmis
Universität Leipzig, Germany
Unveiling the stereochemistry of transient ortho-quinone methides by cryogenic ion trap vibrational spectroscopy

11:45 – 11:50am ***Discussion***

11:50 – 12:00noon Lauri Halonen
University of Helsinki, Finland
Photoacoustic spectrum of radioactive methane with a home-built high-power mid-infrared optical frequency comb

12:00 – 12:05pm ***Discussion***

12:05 – 12:20pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

12:30pm Lunch, MIB Concourse

2:00 – 3:15pm **Session E1**: **Transient Species**

2:00 – 2:15pm Paul Dyson, **Chair**
École Polytechnique Fédérale de Lausanne, Suisse

2:15 – 2:25pm György Tarczay
Eötvös Loránd University, Budapest, Hungary
Pairing and unpairing from York to the Universe

2:25 – 2:30pm ***Discussion***

2:30 – 2:40pm Mike Ashfold
University of Bristol, UK
Quantifying rival bond fission probabilities in molecular photodissociation

2:40 – 2:45pm ***Discussion***

2:45 – 2:55pm Maurizio Becucci
University of Florence, Italy
Non-covalent interactions and novel SERS substrates: towards in-field applications of SERS spectroscopy

2:55 – 3:00pm ***Discussion***

3:00 – 3:15pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

3:15 – 3:45pm **Refreshment break**

3:45 – 5:10pm **Session E2: Back to the Future: Theory and Experiment**

3:45 – 4:00pm Hiroshi Sekiya, **Chair**
Kyushu University, Fukuoka, Japan

4:00 – 4:10pm Attila G. Császár
Eötvös Loránd University, Budapest, Hungary
Spectroscopic network assisted precision spectroscopy of $H_2{}^{16}O$

4:10 – 4:15pm ***Discussion***

4:15 – 4:25pm Elangannan Arunan
Indian Institute of Science, Bangalore, India
Large amplitude motions and inter/inter-molecular bonds

4:25 – 4:30pm ***Discussion***

4:30 – 4:40pm Mike Duncan
University of Georgia, Athens, GA, USA
Infrared spectroscopy of acetylene trimerization to benzene catalysed by atomic vanadium cations

4:40 – 4:45pm ***Discussion***

4:45 – 5:00pm ***Open Discussion with floor contributions (2 slides max. per contribution)***

5:00pm **Closing Remarks**

5:30 – 7:30pm: Poster session and reception, MIB Concourse

8pm: Dinner, Lal Qila Restaurant, 123-127 Wilmslow Rd, Manchester M14 5AN

Saturday 22nd June 2019
9:30 – 11:30am: Guided Tour of the University of Manchester Campus.