

Atomic and Molecular Interactions Group Workshop
Nightingale Hall, University Park, University of Nottingham
4-5 January 2006

Wednesday, 4 January

11.00 am Registration

1.00 pm Lunch in the Dining Hall

Sessions will be held in the Large Junior Common Room.

2.00 pm *Session 1 (Experimental). Laser, photon & electron interactions with atoms and molecules I.*

Session leader: Professor Ed Hinds (Imperial College, London)
"Cold trapped atoms and molecules"

Additional speakers

2.45 pm	1.	Dr Martyn Hussey (Manchester) "Superelastic scattering from Ca" (15 min)
3.05 pm	2.	Peter Douglas (UCL) "Laser cooling of atoms in optical lattices" (15 min)
3.25 pm	3.	Mischa Stocklin (UCL) "Quantum chaos in cold atoms" (15 min)
3.45 pm	4.	Adrian Boatwright (Nottingham) "Systematic shifts in electronic spectra in helium nano-droplets" (15 min)
4.10 pm		Coffee/tea and biscuits

4.45 pm *Session 2 (Theory). Collisions, spectroscopy, entanglement and cold atoms*

Session leader: Professor Alan Hibbert (Queens University, Belfast)
"The calculation of features of astronomical spectra"

Additional speakers

5.25 pm	1.	Dr Claire Hudson (QUB) "Electron-ion interactions of astrophysical importance" (15 min)
5.45 pm	2.	Martin Madine (QUB) "Competition between multiphoton emission of the 1s and 2s electron from the 1s2s 1S state of He" (15 min)
6.05 pm	3.	Darren Condren (QUB) "Semiclassical treatment of Wannier's theory when the exponent diverges" (15 min)
6.25 pm	4.	Chris Hadley (UCL) "Entanglement creation and distribution" (15 min)
6.45 pm	5.	Domhnall Murphy (QUB) "Quantum state engineering in traps and lattices" (15 min)
7.15 pm		Dinner in the Dining Hall.
7.15 pm		Bar open until midnight.

Thursday, 5 January

8.00 am Breakfast in the Dining Hall

8.45 am *Session 3 (Experiment & Theory). Laser, photon & electron interactions with atoms & molecules II.*

Session leader: Dr Hugo van der Hart (Queens University, Belfast)
"Benchmark investigations of laser-atom interactions"

Additional speakers

9.25 am	1.	Dr James Harries (Japan) "SRS experiments at spring-8 in Japan" (25 min)
9.55 am	2.	Eoin O'Leary (DCU) "Vacuum-UV laser induced breakdown spectroscopy for light element detection in steel" (15 min)
10.15 am	3.	Caroline Banahan (DCU) "Photo-ionization of atoms and ions in resonant laser fields" (15 min)
10.35 am	4.	John Dardis (DCU) "Time resolved imaging spectroscopy of colliding plasma systems" (15 min)
10.55 am	5.	Daniel Brown (Manchester) "Above barrier resonances in dicationic HCl" (15 min)
11.15 am		Coffee/tea and biscuits

11.30 am *Session 4 (Experimental). Ion interactions of fundamental, astrophysical and biological relevance.*

Session leaders:

11.30 am **Professor Bob McCullough (Queens University, Belfast)** *"Low energy ion interactions: current status and future prospects"*

12 noon **Professor Nigel Mason (Open University)** *"Low energy ion interactions with ices"*

Additional speakers

12.30 pm	1.	Jarlath McKenna (QUB) "Molecular ion dynamics in intense laser fields" (15 min)
12.50 pm	2.	Adam Hunniford (QUB) "Ion induced DNA damage" (15 min)
1.10 pm	3.	Jean Wyer (QUB) "Enhancement of radiation damage in radiotherapy" (15 min)
1.30 pm	4.	Philip Orr (QUB) "Negative ion interactions with ultra fast laser pulses" (15 min)
2.00 pm		Lunch in the Dining Hall

2.45 pm **Session 5 (Theory & Experiment). Systems and processes involving antimatter and related phenomena.**

Session leader: Professor Edward Armour (Nottingham)

"Developments in experiment and theory involving positrons, neutrinos or antihydrogen"

Additional speakers

3.15 pm	1.	Dan Murtagh (UCL) "Positron impact ionization of CO ₂ " (15 min)
3.35 pm	2.	Josie Beale (UCL) "Positron and positronium collisions with H ₂ O molecules" (15 min)
3.55 pm	3.	Charlie Starrett (QUB) "Positronium scattering by noble gas targets" (15 min)
4.15 pm	4.	Natasha Doss (UCL) "The KATRIN collaboration" (15 min)
4.35 pm	5.	Allan Todd (Nottingham) "Quasi-bound states of He \bar{p} " (15 min)
4.55 pm	6.	Mark Gregory (Nottingham) "Antiproton annihilation in antihydrogen-atom scattering" (15 min)
5.15 pm		Coffee/tea and biscuits

End of Workshop