Christmas High Power Laser Science Community Meeting
15 – 17 December 2010
Abingdon - The Guildhall and The Cosener's House

Wednesday 15 December: The Guildhall, Abbey Close, Abingdon

13:00 – 13:30 ***REGISTRATION AT THE GUILDHALL***

12:25	***LUNCH – The Cosener's House***
13:25	*John Collier – Science & Technology Facilities Council* *Welcome*
13.45	*Cora O'Reilly – Engineering and Physical Sciences Research Council* *EPSRC 's Strategic Plan*

Session 1 Advanced Fusion Concepts - Chair Prof Peter Norreys

14:00	*Gianluca Sarri – Queen's University Belfast* *Observation of post-soliton expansion following laser propagation through an underdense plasma*
14:12	*Jonathan Davies – IST Lisbon, Portugal* *Fast ignition without a cone*
14:24	*Louise Willingale – University of Michigan, USA* *Channelling in underdense plasmas*
14:36	*Robbie Scott – Imperial College London* *Demonstration of artifical collimation of fast electrons on the Vulcan petawatt laser facility*
14:48	*Ian Bush – University of York* *Cavitation and shock wave formation in dense plasmas by relativistic electron beams*
15:00	***COFFEE/TEA – The Cosener's House Seminar Room 2***

Session 2 Ion Acceleration Physics - Chair Prof David Neely

15:30	*Ceri Brenner – University of Strathclyde* *Optical control of ion acceleration using multi-pulses*
15:42	*Alex Robinson – Science & Technology Facilities Council* *Developments in Radiation Pressure Acceleration of ions*
15:54	*Charlotte Palmer – Imperial College London* *Proton acceleration by radiation pressure driven hole boring shocks*
16:06	*Peta Foster – Science & Technology Facilities Council* *Radiation Pressure Acceleration on Astra Gemini*
16:18	*Sabrina Nagel – Imperial College London* *Simulations of VULCAN petawatt experiments using ultra-thin DLC foils*
16:30	*Kaniz Fatema Kakolee – Queen's University Belfast* *Tunable, narrow bandwidth ion spectra from petawatt interaction with sub-micron foils*

Special Session: Academic Access to the ORION Laser Facility

17:00	*Tim Goldsack – AWE plc, Aldermaston* *Update on the ORION laser project*
17:12	*Roger Evans – Imperial College London* *First academic experiments on the ORION laser facility*
18:00	***Close***

The Cosener's House

19:00	***DINNER***

Science & Technology Facilities Council
Central Laser Facility

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PROGRAMME

Thursday 16 December: The Guildhall, Abbey Close, Abingdon

Session 4 High Energy Density Physics - Chair Mr Rob Clarke

09:00	*Edward Hill – Imperial College London* *Analysing the line emission from short-pulse 1D hohlraum experiments*
09:12	*Mikako Makita – Queen's University Belfast* *Emission spectroscopy analysis for directly & indirectly irradiated targets*
09:24	*Tony Bell – University of Oxford* *Electron transport and shock ignition*
09:36	*Hugo Doyle – Imperial College London* *Warm dense matter EOS experiments utilising laser driven proton heating: Vulcan TAW 2010*
09:48	*David Riley – Queen's University Belfast* *X-ray scattering from warm dense aluminium*
10:00	*Chan Joshi – UCLA, USA* *Injector/Accelerator LWFA experiment*
10:30	***COFFEE/TEA – The Cosener's House Seminar Room 2***

Session 5 Wakefield Accelerators and Intense Laser-Plasma Interactions - Chair Dr Michail Tzoufras

11:00	*Matthew Wing – University College London* *Proton beam driven plasma wakefield acceleration*
11:30	*Stefan Kneip – Imperial College London* *Using synchrotron radiation to measure the emittance of wakefield accelerated electron beams*
11:42	*Michael Bloom – Imperial College London* *Wave breaking threshold for laser wakefield accelerators*
11:54	*Robin Marjoribanks – University of Toronto, Canada* *Relativistic changes in absorption physics, in ultra-intense laser-matter interaction*
12:06	*Matthew Streeter – Imperial College London* *Relativistic plasma surfaces as an efficient second harmonic generator*
12:18	*Matthew Zepf – Queen's University Belfast* *Relativistically Oscillating Mirror in the few cycle limit*
12:30	***GROUP PHOTOGRAPH – The Guildhall***
12:42	***LUNCH – The Cosener's House***

Session 6 Raman Amplification and High Energy Density Physics - Chair Dr Kate Lancaster

13:42	*Nat Fisch – Princeton University, USA* *Wave compression in plasma*
14:12	*Frederico Fiuza – IST Lisbon, Portugal* *Simulations of efficient Raman amplification into the multi-petawatt regime*
14:24	*Sergio Mota – IST Lisbon, Portugal* *Photon acceleration and Raman amplification of EISCAT radio waves*
14:36	*Bob Bingham – University of Strathclyde* *Thermal filamentation of short wavelength Raman amplified pulses*
14:48	*Raoul Trines – Science & Technology Facilities Council* *Raman amplification of long laser pulses to kJ energies and petawatt powers*
15:00	*Dhananjay Singh – IST Lisbon, Portugal, Portugal* *PIC simulation of laser channeling in the corona of the HiPER baseline target*
15:12	*Javier Honrubia – Technical University of Madrid, Spain* *Fast ignition by focused ion beams*
15:24	*John Bissell – Imperial College London* *Magnetothermal Instability in Laser Plasmas*
15:36	*Nigel Woolsey – University of York* *Plasma jet experiments and their relevance to Young Stellar Objects*
15:48	***COFFEE/TEA – The Cosener's House Seminar Room 2***

The Cosener's House

16:00	***Student Poster Competition – Seminar Room 1***
18:30	***Close***

19:00	***CHRISTMAS DINNER***

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Friday 17 December: The Guildhall, Abbey Close, Abingdon

Session 7 Physics at the Intensity Frontier - Chair Prof Tony Bell

09:30	*Mattias Marklund – Umea University, Sweden* *Probing new physics using high intensity laser systems*
10:00	*Roland Duclous – CEA, France* *Monte Carlo calculations of pair production in high-intensity laser-plasma interactions*
10:12	*Anton Ilderton – Umea University, Sweden* *Pair production in laser fields: finite size effects*
10:24	*Christopher Harvey – Umea University, Sweden* *Covariant Worldline Numerics for Charge Motion with Radiation Reaction*
10:36	***COFFEE/TEA – The Cosener's House Seminar Room 2***

Session 8 High Energy Density Physics - Chair Dr John Pasley

11:00	*Nicola Booth – University of York* *Polarisation spectroscopy of dense plasmas for in situ fast electron and return current measurements*
11.12	*Stefan Olsson Robbie – Imperial College London* *Experimental studies of radiative blast wave dynamics*
11:24	*Nicolas Dover – Imperial College London* *Direct observation of laser hole-boring and resultant shocks in overdense plasmas*
11:36	*Christopher Ridgers – University of Oxford* *Super-luminal sheath field expansion and fast-electron beam divergence measurements in laser-solid interactions*
11:48	*Michail Tzoufras – University of Oxford* *A Vlasov-Fokker-Planck code for high energy density physics*
12:00	*Rhys Lloyd – Imperial College London* *High density collisional PIC simulation results*
12:12	*Katrina Falk – University of Oxford* *Inferring the equation of state of shocked liquid deuterium on Omega*
12:24	***LUNCH – The Cosener's House***

Session 9 Few Cycle Physics - Chair Dr Emma Springate

13:30	*Cephise Cacho – Science & Technology Facilities Council* *Artemis XUV beamline*
13:42	*Jesse Petersen – University of Oxford* *Time-resolved photo-emission*
13:54	*Thomas Siegel – Imperial College London* *High harmonic generation with a superposition of multiple unrelated frequency fields*
14:06	*Steven Hutchinson – Queen's University Belfast* *Ultrafast multielectron dynamics using time dependent R-matrix theory*
14:18	*Jamie Nemeth – Swansea University* *Characterization of focal parameter in attosecond beamlines*
14:30	*Orla Kelly – Queen's University Belfast* *High Resolution Mass Spectrometry of Femtosecond Induced Molecular Fragmentation*
14:48	*Lucy Wilson – University of York* *Double-slit interferometry to measure XUV refractive indices of solids using high harmonics*
15:00	*Laura Moore – Queen's University Belfast* A multi-electron description of laser-driven atoms
15:12	***COFFEE/TEA – The Cosener's House Seminar Room 2***

Session 10 Intense Laser-Plasma Interactions - Chair Prof Peter Norreys

15:36	*Dino Jaroszynski – University of Strathclyde* *Radiation sources based on laser-plasma wakefield accelerators: recent results from teh ALPHA-X project*
15:48	*Domenico Doria – Queen's University Belfast* *Radiobiology using laser driven protons*
16:00	*Peter Norreys – Science & Technology Facilities Council* *Summary and closing remarks*
16:05	***Close***