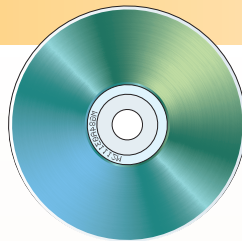


CD Rom Index



High Power Laser Science

Femtosecond Pulse Physics

- 1 The intensity of contrast enhanced Astra Gemini laser
- 2 A two-screen spectrometer to measure the 3D momentum distribution of GeV electron beams produced by laser wakefield acceleration experiments on Astra Gemini
- 3 Near-GeV electron energy acceleration in low density plasma channels
- 4 A two-screen electron spectrometer for broad- and narrow-bandwidth electron spectra
- 5 Electron acceleration up to 2 GeV in plasma channels
- 6 Calibration of grazing-incidence flat-field soft x-ray diffraction gratings
- 7 Non-linear relativistic plasma optics in a GeV laser wakefield accelerator

High Energy Laser Interactions

- 8 Super critical electrostatic shocks in laboratory plasma
- 9 A comparison of different radiochromic film types
- 10 The effect of lattice structure on fast electron transport in warm dense carbon
- 11 X-ray scattering from liquid carbon heated by laser-accelerated protons
- 12 Modelling channel formation by high intensity laser plasmas
- 13 Dynamics of self-generated, large amplitude magnetic fields following high-intensity laser matter interaction
- 14 Controlling fast electron beam divergence using two laser pulses
- 15 X-ray scattering from warm dense Iron

Theory and Computation

- 16 Multi-electron and multi-channel effects on harmonic generation
- 17 A new equation of state for waterbag-distributed plasma
- 18 Development and validation of a 1D2V Vlasov-Fokker-Planck model
- 19 Approximating the dynamic structure factor in warm dense matter
- 20 The effect of temporal pulse shape in simulating the interaction of an intense laser pulse and an ultra-thin foil
- 21 Radiation reaction in ultra-intense laser fields
- 22 The study of beam-plasma instabilities relevant to laser-plasma interactions in fast ignition
- 23 QED-PIC codes for 10PW laser-plasma simulation
- 24 ZEPHYROS v.0.7 series
- 25 The spectral distribution and total kinetic energy of fast electrons generated in a relativistically intense, frequency doubled laser-solid interaction
- 26 Developing an integrated approach to modelling short pulse laser-solid interaction
- 27 Wave breaking and saturation of resonantly driven waves in warm plasma
- 28 Monte Carlo studies of ion-ion inverse Bremsstrahlung absorption

Ultrafast and XUV Science

- 29 Ultrafast pump-probe experiments with an exemplar biomolecule, phenylalanine
- 30 Towards UV pump XUV probe photoelectron spectroscopy of chemical dynamics
- 31 Coherent collective-mode oscillations in the $K_{0,3}MoO_3$ charge density wave
- 32 The commissioning of the AMO end station at Artemis: first steps toward laser induced electron diffractions
- 33 Exploring the onset of superfluid behaviour in quantum clusters using time-domain measurements



Lasers for Science Facility Programme

Biology

- 34 E-Combretastatins as anti-cancer prodrugs activated by photoisomerization
- 35 Imaging nanoparticles in fixed cells using Octopus
- 36 Characterization of dynamics of protein disulphide-isomerase using single-molecule FRET
- 37 Protein-protein interactions in the higher plant secretory pathway
- 38 Studying the role of protein dynamics coupled to light-activated enzyme catalysis using time-resolved infra-red spectroscopy
- 39 Human epidermal growth factor receptor (EGFR) aligned on the plasma membrane adopts key features of drosophila asymmetry
- 40 The effect of PARP inhibition on BER and B-NHEJ in the repair of simple and complex DNA damage

Chemistry

- 41 Transient absorption spectroscopy studies of CdTe-cationic meso-tetrakis(4-N-methylpyridyl) zinc porphyrin (ZnTMPyP₄)
- 42 A new method to probe organic films on suspended aqueous particles
- 43 Probing the mechanism of blue light sensing BLUF domain proteins: A study through transient infra-red spectroscopy and unnatural amino acid incorporation
- 44 Vibrationally resolved chemical reaction dynamics in solution
- 45 On the photoelectron spectroscopy of gas-phase polyanions

Physics

- 46 Photoemission from nanoscale metal tips for time-resolved electron diffraction
- 47 Feasibility study of collinear Ion resonant ionization spectroscopy
- 48 Wavelength dependence of the raman gain in synthetic diamond
- 49 Enabling plasma medicine by unravelling the physics of plasma jets



Laser Science and Development

Artemis

- 50 Design of a waveplate to generate circularly polarised XUV radiation
- 51 Laser beam pointing control system for driving the hollow-fibre few-cycle laser
- 52 In-line flat-field XUV spectrometer for the Artemis beamline
- 53 Modeling of the VMI spectrometer for the Artemis beam line
- 54 Improvements to the Artemis facility interlock system

Astra Gemini

- 55 An imaging system for accurate target positioning for fast focusing geometries
- 56 Implementation of pulse measurements with Wizzler into Gemini diagnostics
- 57 Recommissioning of pulse compressor for Astra target area 2
- 58 Achromatic beam diagnostic telescopes for Astra Gemini
- 59 Recent improvements in contrast on Astra Gemini
- 60 Development of an adaptive optic system for use in the Astra Gemini target area
- 61 Replacement of Astra amplifiers one and two for enhanced laser contrast

Lasers for Science Facility

- 62 Multiple probe spectroscopy

Vulcan

- 63 A new short pulse diagnostics line for Vulcan Petawatt
- 64 Near field autocorrelator for high power lasers
- 65 Mixed glass rod chain optimisation
- 66 Vulcan Target Area West commissioning
- 67 Refurbishment of Vulcan Target Area Petawatt

Laser R&D

- 68 New CLF adaptive optics development lab

Target Fabrication

- 69 Fabrication of mass produced microdot arrays for use as micro-targets on high-repetition rate experiments
- 70 Thin-film measurements of multilayered foils using electron dispersive X-ray spectroscopy
- 71 High volume production of thin foil laser targets for use on next generation laser facilities
- 72 Design for production of thin film solid hydrogen targets

DiPOLE & HiPER

- 73 First light from the DiPOLE project
- 74 Two beam spatial and temporal coherent phasing with femtosecond pulses

Instrumentation, Engineering and Plasma Diagnostics

- 75 Proton Film Packs for multi-shot experiments
- 76 Mitigation of EMP effects for imaging specularly reflected light on VULCAN-PW
- 77 Modified Thomson parabola design for high energy, multispecies ion source
- 78 Cryogenic pump induced vibration in the TAP interaction chamber