

LSF Operational Statistics

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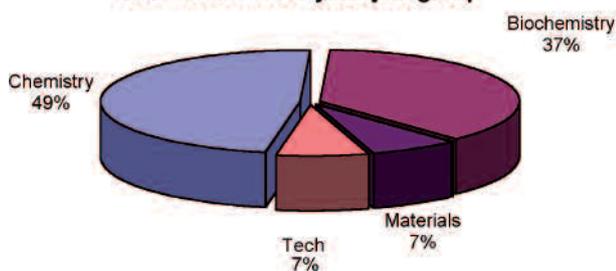
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RAL-based experiments

In the reporting period (March 2006 to March 2007), 26 different User groups performed a total of 30 experiments in the LSF laboratories at RAL. A total of 3939 hours laser time was scheduled to the User community and European Users throughout the year. 4538 hours were delivered with only 118 hours downtime. This year saw an increase in the number of weeks biochemistry and decrease in chemistry scheduled. A breakdown is shown in Figures 1 and 2. The RAL-Based schedule is shown in Table 1. The average User satisfaction marks are shown in Figure 3. There were a total of 35 publications, 53 conference proceedings and presentations, 12 posters and 3 PhD theses published during the reporting year.

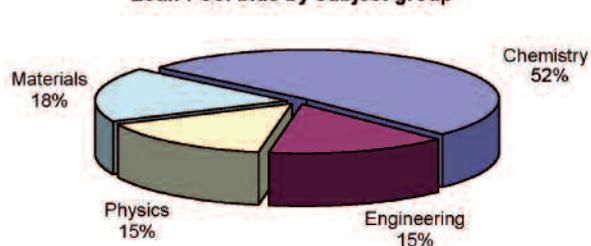
RAL-Based bids by subject group



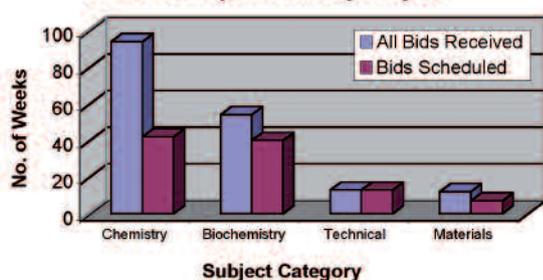
Loan Pool

The Loan Pool delivered 407 weeks of laser time in the reporting period. Downtime was 13 weeks and was mainly due to minor breakdowns throughout the year. In the laser loans there were 2 new groups to the Loan Pool. The chemistry community was once again the biggest user with 52% of allocated time. The breakdown is shown in Figures 4 and 5. The Loan Pool schedule is shown in Table 2. The average User satisfaction marks are shown in Figure 6. There were a total of 21 publications, 41 conference proceedings and presentations, 4 posters and 3 PhD theses published during the reporting year.

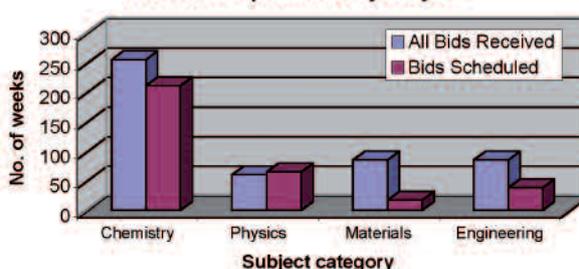
Loan Pool bids by subject group



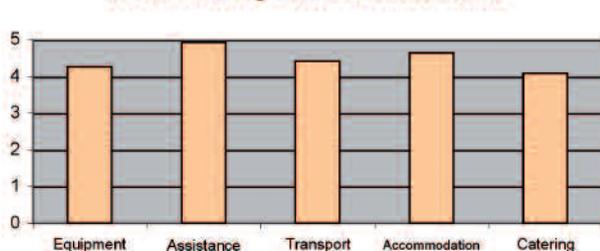
Ral-Based experiments by subject



Loan Pool experiments by subject



Ral-Based average User satisfaction scores



Loan Pool average User satisfaction scores

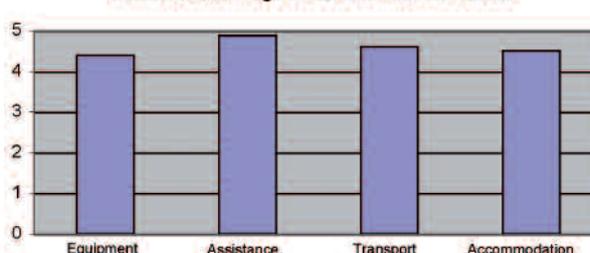


Table 1. Lasers for Science Facility RAL-based Schedule Period 1 2006

Date	Confocal Microscopy / Laser Tweezers Laboratory		Nanosecond Science Laboratory		Ultrafast Spectroscopy Laboratory
Mar 27			Maintenance		Maintenance
April 3					G GREETHAM (CLF) US12T1/06 Preliminary diagnostics for ULTRA project
April 10					J KELLY (Dublin) USEU18C1/06 A PIRATE study of defined sequence nucleic acids
April 17	Maintenance				
April 24	B STEVENS (CMF) CM7B1/06 The effect of laser tweezers on cell differentiation				M GEORGE (Nottingham) US6C1/06 Fast infrared studies of photochemical carbonylation of alkanes
May 1			Maintenance		
May 8	P O'NEILL (MRC) CM5C1/06 Dynamics of assembly of repair proteins to genomic DNA damage		D PHILLIPS (IC) NL3C1/06 Porphyrin dimers and oligomers for photodynamic therapy		
May 15	M TOLLEY (CLF) CM8T1/06 Levitation of targets for high power laser experiments				
May 22	K THOMPSON (London) CM2B1/06 Fluorescence quenching of novel cytosine analogues		P MATOUSEK (CLF) US10T1/06 Development of new chemically specific methods for non-invasive probing of tissue (SORS)		J KELLY (Dublin) USEU18C1/06
May 29	Maintenance				G GREETHAM (CLF) US12T1/06 Preliminary diagnostics for ULTRA project
June 5	B STEVENS (CMF) CM7B1/06 The effect of laser tweezers on cell differentiation		M McCOUSTRA (Nottingham) NL2C1/06	P MATOUSEK (CLF) US10T1/06	R PERUTZ (York) US5C1/06
June 12					
June 19	A WARD (CLF) CM6M1/06 Polymerisation of emulsion droplets		M McCOUSTRA (Nottingham) NL2C1/06		
June 26	A WARD (CLF) CM6M1/06	R BISBY (Salford) CM3B1/06	Photon-induced processes in model interstellar ices		Maintenance
July 3			Maintenance		
July 10			D PHILLIPS (IC) NL3C1/06		M GEORGE (Nottingham) US8B1/06 Probing indirect DNA damage by carbonate radicals using transient resonance Raman spectroscopy
July 17	P O'NEILL (MRC) CM5C1/06 Dynamics of assembly of repair proteins to genomic DNA damage		Porphyrin dimers and oligomers for photodynamic therapy		
July 24	A WARD (CLF) CM6M1/06		R BISBY (Salford) CM3B1/06 Serotonin detection in biofluids		
July 31					S ELLIOTT (Cambridge) US1M1/06 Time-resolved excitation studies of photosensitive chalcogenide glasses
Aug 7	M TOLLEY (CLF) CM8T1/06 Levitation of targets for high power laser experiments		M McCOUSTRA (Nottingham) NL2C1/06 Photon-induced processes in model interstellar ices		S BARSBERG (Denmark) USEU15B1/06 Kerr gated Raman study of furfuryl alcohol reactions with wood cell wall components
Aug 14					
Aug 21	C BAIN (Durham) CM4C1/06 Micromechanical properties of surfactant aggregates				
Aug 28	Maintenance				Maintenance
Sept 4	P O'NEILL (MRC) CM5C1/06				G GREETHAM (CLF) US12T1/06
Sept 11	C BAIN (Durham) CM4C1/06	R BISBY (Salford) CM3B1/06	M McCOUSTRA DEVELOPMENT		S ELLIOTT (Cambridge) US1M1/06 Time-resolved excitation studies of photosensitive chalcogenide glasses
Sept 18					

Table 1. Lasers for Science Facility RAL-based Schedule Period 1 2006 (continued)

Date	Confocal Microscopy / Laser Tweezers Laboratory	Nanosecond Science Laboratory	Ultrafast Spectroscopy Laboratory
Sep 25		ULTRA REFURBISHMENT	MAINTENANCE
Oct 02	MAINTENANCE		K RONAYNE (CLF) White light transient absorption microscopy
Oct 09			US32T2/06
Oct 16			
Oct 23			
Oct 30	MAINTENANCE		A W PARKER (CLF) Stimulated Raman spectroscopy: A new way to investigate electron transfer reactions on fs timescales
Nov 6	W HUANG (Oxford) Using Raman tweezers to identify and sort key prokaryotic species CM12B2/06		US22C2/06
Nov 13	P O'NEILL (MRC) Dynamics of assembly of repair proteins to genomic DNA damage CM14B2/06		
Nov 20			LSF USER MEETING
Nov 27	W HUANG (Oxford) CM12B2/06		J WEINSTEIN (Sheffield) Time-resolved infrared anisotropy for molecular dynamics US21C2/06
Dec 04			
Dec 11	C HAWES (Oxford Brookes) CM10B2/06	S MEECH (UEA) US26B2/06	
Dec 18	MAINTENANCE	K THOMPSON (Birbeck) Fluorescence quenching of nucleobase analogues US24B2/06	
Dec 25		CHRISTMAS & NEW YEAR	
Jan 01			
Jan 08	R BISBY (Salford) Serotonin detection in biofluids CM13B2/06	KELLY/PIRATE CHARACTERISATION	
Jan 15		S MEECH (UEA) New directions in ultrafast vibrational dynamics of proteins US26B2/06	
Jan 22	J RUNIONS (Oxford) Investigating translational forces of the golgi apparatus CM11B2/06		
Jan 29	P O'NEILL (MRC) CM14B2/06	J VAN THOR (Oxford) Multi-pulse spectroscopy with green fluorescent protein US25B2/06	
Feb 05	W HUANG (Oxford) CM12B2/06		
Feb 12	J RUNIONS (Oxford) Investigating translational forces of the golgi apparatus CM11B2/06	PROVISIONAL	
Feb 19	C HAWES (Oxford Brookes) In vivo interactions of higher plant golgi matrix proteins CM10B2/06	W BROWN (UCL) Vibrationally promoted rearrangements on metal surfaces	
Feb 26		NL6C2/06	
Mar 05	BISBY CM13B2/06		(NEW LASER REFIT)
Mar 12	BISBY (Salford) CM13B2/06		
Mar 19	P O'NEILL (MRC) CM14B2/06		MAINTENANCE

Table 2. Lasers for Science Facility Loan Pool Schedule 2006-2007

Date	NSL1	NSL2	NSL3	NSL4	NSL5	UFL1	UFL2	CWL1
	YAG/Dye Powerlite + Sirah + SHG + DFG	Compact YAG/Dye Surelite III-10 + Sirah + SHG	Compact YAG/Dye Surelite III-10 + Sirah + SHG	YAG/Dye Powerlite + Sirah + SHG	YAG/Dye Spectra Pro + Sirah + SHG	Coherent Verdi/Mira + SHG + THG	Coherent Libra OPerA Ultrafast Amp + OPA	Frequency Doubled Argon Ion
Mar 27		LP18C2/05			LP25P2/05	CAVILL (Diamond Light Source) LP19P2/05	HORN LP26C2/05	EASON (S'hampton) Ultraviolet direct writing of photonic devices in Ferroelectric crystal hosts LP28M2/05
Apr 3	KELMAN (Cranfield) Two line NO-PLIF temperature measurement LP2E1/06	SNOEK (Oxford) How does glycosylation influence the conformation of glycoprotein building blocks? LP7C1/06	HUDSON (Bristol) The dynamics of oxygen photo-sensitization by biological molecules LP3C1/06	ROURKE (Warwick) LP22C2/05	WEINSTEIN (Sheffield) Resonance Raman insight into electronic properties of metal chromophores: Combining (spectro) electro-chemistry, isotopic substitution and cyclo-metallation to control charge separation LP14C1/06	LACZIK (Oxford) LP16E1/06	WU (York) Laser-induced ultrafast spin dynamics in magnetic thin films with in-plane and out-of plane anisotropy LP12P1/06	WILKINSON (S'hampton) Waveguide-coupled micro-sphere lasers LP13E1/06
Apr 10								
Apr 17								
Apr 24								
May 1								
May 8								
May 15								
May 22								
May 29								
Jun 5								
Jun 12								
Jun 19								
Jun 26								
Jul 3								
Jul 10								
Jul 17								
Jul 24								
Jul 31								
Aug 7								
Aug 14								
Aug 21								
Aug 28								
Sep 4								
Sep 11								
Sep 18								
Sep 25								
Oct 2	WALMSLEY (Oxford) Attosecond pulse generation via stimulated Raman scattering LP24P2/06 BROWN (UCL) Vibrationally promoted re-arrangements on metal surfaces LP26C2/06 EVANS (Leicester) Spectroscopy of silicon containing species of interstellar interest LP22C2/06 SNOEK (Oxford) Conformation of glycoprotein building blocks – Growing larger LP23C2/06	SNOEK (Oxford) LP23C2/06	HUDSON (Bristol) Inter-molecular dynamics of excited biological molecules in the gas phase LP20C2/06	HIPPLER (Sheffield)	WEINSTEIN (Sheffield) Nanosecond time domain for photochemical applications LP18C2/06	STAVROS (Warwick) Ultrafast dynamics of the N-H bond and its significance towards the photo-resistant mechanism of nucleic bases and base -pairs LP21C2/06	WU (York) Laser-induced ultrafast spin dynamics in patterned magnetic nanostructures LP25P2/06	EASON (S'hampton) Latent UV-light assisted electric field poling of lithium niobate LP27M2/06
Oct 9								
Oct 16								
Oct 23								
Oct 30								
Nov 6								
Nov 13								
Nov 20								
Nov 27								
Dec 4								
Dec 11								
Dec 18								
Dec 25								
Jan 1								
Jan 8								
Jan 15								
Jan 22								
Jan 29								
Feb 05								
Feb 12								
Feb 19								
Feb 26								
Mar 5		SNOEK LP8C1/07		HIPPLER LP4C1/07				MAILIS (S'hampton) LP12M1/07
Mar 12	WALMSLEY LP1P1/07		HUDSON LP6C1/07		HANCOCK			
Mar 19								