FINAL YEAR PROJECTS
MPhys/MMathsPhys

List of Projects

2016/17

MPhys/MMathsPhys Projects – 2016/17

SUPERVISOR	TITLE	DES	
Professor M Alexe	Determining the conduction mechanism in $BiFeO_3$	EXP1	
Dr R Beanland	Dynamic polar nanoregions in ferroelectric materials	EXP / COM 2	
Dr G Bell	The ultimate heatsink	EXP3	
Dr T Blake	Search for the forbidden decay $B^+ \rightarrow K^+e^+\mu^-$	EXP / PRO / COM4	
Professor S P Brown	Probing Atomic-Level Structure by Solid-State NMR	EXP / COM5	
Professor S M Dixon	Flexural ultrasonic transducers for non-destructive testing	EXP6	
Dr J Duffy	Dynamics of glass forming liquids confined in nanometre pores	EXP7	
Dr R S Edwards	Characterisation of defects using ultrasound	EXP / COM8	
Professor T J Gershon	Search for new B meson decay modes with the CERN LHCb Experiment	EXP / COM / PRO9	
Dr J Hanna	Multinuclear solid state NMR of doped diamagnetic and paramagnetic perovskite systems employed as solid oxide fuel cell (SOFC) cathode materials	EXP10	
Dr T Hase	X-Ray diffraction from ultra-thin films	EXP / COM11	
Dr V Kantsler	Acoustic manipulation of micro-swimmers: sonotaxis	EXP12	
Dr M R Lees	Experimental studies of rare earth transition metal magnets	EXP13	
Dr J Lloyd-Hughes	Ultrafast terahertz spectroscopy beyond the diffraction limit	EXP14	

Professor C McConville	X-ray photoelectron spectroscopy of modified semiconductor surfaces	EXP15	
Dr G Morley	Spin qubit experiments in diamond	EXP16	
Dr M Myronov	Electrical transport properties of 3D and 2D carriers in semiconductors	EXP17	
Dr O Petrenko	Geometrically frustrated magnetism in the rare-Earth tripod kagome lattice $Mg_2RE_3Sb_3O_{14}$	EXP19	
Dr M Polin	Antibiotic resistance and group motility in bacterial swarms	EXP20	
Professor D Pollacco	Detection and modelling of stellar and exoplanetary viariability with the NITES telescope on La Palma	EXP21	
Dr J Sloan	Imaging and optical properties of low dimensional 'extreme nanowires' in carbon nanotubes	EXP / COM22	
Dr E Verwichte	Transverse loop oscillations in the solar corona	EXP / PRO23	
Dr N Wilson	Nanoscale analysis of organic photovoltaics	EXP24	
Dr S Boyd	Simulation of diffractive pion production on neutrinos in the T2K experiment	COM25	
Professor P F Harrison	Physics at the international linear collider	COM26	
Dr N Hine	Including van der Waals interactions in linear-scaling density functional theory	COM27	
Dr M Kreps	Search for $\Lambda_b \rightarrow J/\psi \Xi K$ and $\Lambda_b \rightarrow J/\psi \Lambda \eta$ decays at LHCb	COM28	
Professor V Nakariakov / A-M Broomhall	Seismological studies of solar and stellar activity cycles	COM / PRO29	
Dr E Stanway	The Star Forming Conditions of Extreme Galaxies	COM / PRO30	
Dr P Wheatley	Searching for extreme flare stars in sky survey data	COM31	
Dr G Barker	The development of automatic reconstruction algorithms for neutrino interactions in giant liquid argon detectors	PRO / COM32	

Dr B Hnat	Modelling Edge Localised Modes (ELMs) in fusion plasmas using coherence resonance in a driven stochastic system	PRO / THE33	
Dr D Quigley	Accelerated multicanonical sampling	PRO / COM34	
Dr Y Ramachers	SuperNEMO design challenge	PRO35	
Professor R Roemer	Many-body localization and thermalization of closed quantum systems	PRO / THE36	
Dr G Alexander	Geometry and Topology of Chiral Materials	THE37	
Professor R C Ball	Dynamics on congested networks	THE / COM38	
Dr A Datta / G Knee	Quantum enhanced sensing in realistic scenarios	THE39	
Professor T R Marsh	Instabilities of accretion discs	THE / PRO40	
Professor J B Staunton	Computational modelling of shape memory materials using density functional theory	THE / NUM41	
Professor M S Turner	Flagellar hydrodynamics	THE / COM42	
Professor B Murray	Production mechanism for the Higgs boson at LHC	COM / PRO43	