

PH450 Project Viva Timetable 2015

Nanoscience

Tuesday 5th May 2015 - Chair: Prof Kevin O'Donnell, JA***

Student	Project	Degree	Year	Time	Supervisors
Adam Russell	Modelling semiconductor nanostructures using a Schrödinger-Poisson-current solver	MPhys	4	9:00 – 9:45am	Paul Edwards, Carol Trager-Cowan
Anthony Howley	Optical and conductivity mapping of InGaN LEDs	BSc Hons Physics	4	9:45 – 10:30am	Jochen Bruckbauer, Rob Martin
Scott Deans	Image processing of electron channelling contrast patterns and electron channelling contrast images	BSc Hons Physics	4	10:30 – 11:15am	Carol Trager-Cowan, Paul Edwards
	BREAK				
Ross Johnston	Statistical analysis of defect distributions in semiconductor thin films	MPhys	4	11:30 – 12:15pm	Carol Trager-Cowan, Rob Martin
Jordan McSkeane	Spectroscopic Studies of Rare-earth ions doped in LiNbO ₃	BSc Hons Physics	4	12:15 – 1:00pm	Tom Han, Ben Hourahine
	LUNCH				
Stacey Mitchell	Laser Selective Excitation Studies of Nd ³⁺ doped mixed garnets	MPhys	4	2:00 – 2:45pm	Tom Han, Ben Hourahine
David Newton	Spectroscopic Studies of Rare-earth ions doped in LiNbO ₃	MPhys	4	2:45 – 3:30pm	Tom Han, Ben Hourahine
	BREAK				
Jake Arnott	Thermal modelling of a gravitational ribbon-sensor	BSc Hons Physics	4	3:45 – 4:30pm	Wayne McRae, Nick Lockerbie
Aneurin Harvey-Waugh	Gravitational ribbon-sensor modelling.	BSc Hons Physics	4	4:30 – 5:15pm	Wayne McRae, Nick Lockerbie

Tuesday 5th May 2015 – Chair: Prof Alex Cunningham, JA***

Student	Project	Degree	Year	Time	Supervisors
Mark Governo	Predicting small molecule binding sites on protein surfaces	MPhys	4	9:00 – 9:45am	Maxim Fedorov, Neil Hunt
Nathan Dagleish	Modelling of wettability of mineral surface by water and oil	BSc Hons Physics	4	9:45 – 10:30am	Maxim Fedorov, Neil Hunt

Wednesday 6th May 2015 – Chair: Prof Kevin O'Donnell, JA***

Student	Project	Degree	Year	Time	Supervisors
Nicole Hunter	Remote sensing of subsea light fields	BSc Hons Physics	4	9:00 – 9:45am	Alex Cunningham, Francesco Papoff
Christopher Hunter	Differential polarisation imaging for environmental applications	BSc Hons Physics	4	9:45 – 10:30am	Alex Cunningham, Francesco Papoff
Robert Liddell	Characterisation of irregular particles by optical microscopy and digital imaging	BSc Hons Physics	4	10:30 – 11:15am	Alex Cunningham, Francesco Papoff

Wednesday 6th May 2015 – Chair: Prof Alex Cunningham, JA***

Student	Project	Degree	Year	Time	Supervisors
Caitlin Firth	Intrinsic Fluorophores in Sensing Applications	BSc Hons Physics	4	11:30 – 12:15pm	Olaf Rolinski, Neil Hunt
Craig Murray	Unusual fluorescence decays	BSc Hons Physics	4	12:15 – 1:00pm	Olaf Rolinski, Neil Hunt
	LUNCH				
Scott Brown	Surface fluorescence	BSc Hons Physics	4	2:00 – 2:45pm	David Birch, Olaf Rolinski
Callum Runciman	Noble Metal Quantum Dots	BSc Hons Physics	4	2:45 – 3:30pm	Yu Chen, David Birch
	BREAK				
Elaine Adair	A Physical Investigation of Protein-drug Binding	MPhys	4	3:45 – 4:30pm	Neil Hunt, Maxim Fedorov
Andrew Farrell	Uncovering the early stages of protein folding	MPhys	4	4:30 – 5:15pm	Neil Hunt, Maxim Fedorov

Optics

Friday 1st May 2015 - Chair: Prof. Stefan Kuhr, JA ***

Student	Project	Degree	Year	Time	Supervisors
Colin McCrann	Observing beam propagation by fluorescence	MPhys	4	9:00 – 9:45am	Aidan Arnold, Thorsten Ackemann

Tuesday 5th May 2015 - Chair: Prof. Stefan Kuhr, JA ***

Student	Project	Degree	Year	Time	Supervisors
Kieran MacRae	Measurement of the quality of the laser focus in a scanning optical microscope	BSc Hons Physics	4	9:45 – 10:30am	Gail McConnell, Johanna Tragardh
Nick Bruce	Magnetic Field Stabilization with an Arduino Microprocessor	BSc Hons Physics	4	10:30 – 11:15am	Elmar Haller, Tom Han

Wednesday 6th May 2015 - Chair: Prof. Stefan Kuhr, JA ***

Student	Project	Degree	Year	Time	Supervisors
James Denholm	Non-resonant optical cavities	BSc Hons Physics	4	9:00 – 9:45am	Nigel Langford, Alison Yao
Gregor McDowall	Chirp management of LEDs (experimental and computational)	MPhys	4	9:45 – 10:30am	Nigel Langford, Alison Yao
Steven Russell	Optical pumping of molecular gas lasers by QC Lasers (computational)	MPhys	4	10:30 – 11:15am	Nigel Langford, Alison Yao
	BREAK				
Heather Simmons	Non-resonant optical cavities	MPhys	4	11:30 – 12:15pm	Nigel Langford, Alison Yao
Jonathan Wilkins	Thermal management of pulsed QC Lasers (computational)	BSc Hons Physics	4	12:15 – 1:00pm	Nigel Langford, Alison Yao
	LUNCH				
Wenbo Li	Automated optimisation of optical fibre coupling using microprocessor control	MPhys	4	2:00 – 2:45pm	Paul Griffin, Tom Han
Matteo Demelas	Single-shot, 3D reconstruction of the spatial profile of a laser beam	MPhys	4	2:45 – 3:30pm	Paul Griffin, Nigel Langford
	BREAK				
Mark Carmichael	Photonic materials and devices for Visible Light Communication (VLC)	MPhys	4	3:45 – 4:30pm	Benoit Guilhabert, Nicolas Laurand
Jan Philipp Hausen	Neurophotonic systems for interfacing with the retina	ERASMUS	4	4:30 – 5:15pm	Keith Mathieson, Niall McAlinden

Theory

Tuesday 5th May 2015 - Chair: Prof G-L Oppo, JA ***

Student	Project	Degree	Year	Time	Supervisors
Erin McAleese	Cold atom-light interactions	MPhys	4	9:00 – 9:45am	Gordon Robb, Elmar Haller
Steven Lennox	BEC simulations	MPhys	4	9:45 – 10:30am	Gordon Robb, Elmar Haller
James Dunn	Interactive Physics Simulations	BSc Hons Physics	4	10:30 – 11:15am	Gordon Robb, Nigel Langford
	BREAK				
Robert Smith	Cold atom-light interactions	BSc Hons Physics	4	11:30 – 12:15pm	Gordon Robb, Elmar Haller

Tuesday 5th May 2015 - Chair: Dr Gordon Robb, JA ***

Student	Project	Degree	Year	Time	Supervisors
Philip Doyle	Interaction of Spatial Optical Solitons	MPhys	4	2:00 – 2:45pm	Gian-Luca Oppo, Thorsten Ackemann
Craig Gordon	Dynamics of Coupled Laser Systems	BSc Hons Physics	4	2:45 – 3:30pm	Gian-Luca Oppo, Thorsten Ackemann
	BREAK				
Mathias Weisen	Self-structuring and Optomechanics of Cold Atoms	MPhys	4	3:45 – 4:30pm	Gian-Luca Oppo, Thorsten Ackemann
Michael Wilson	Simulations of Spin-Polarized Vertical-Cavity Surface-Emitting Lasers	BSc Hons Physics	4	4:30 – 5:15pm	Gian-Luca Oppo, Thorsten Ackemann

Tuesday 5th May 2015 - Chair: Dr John Jeffers, JA ***

Student	Project	Degree	Year	Time	Supervisors
Karen Wallace	Dynamics of impurity atom coupled to a quantum gas	MPhys	4	11:30 – 12:15pm	Andrew Daley, Alexandre Tacla
Gwen Morris	Transport dynamics of quantum gases in optical potentials	MPhys	4	12:15 – 1:00pm	Andrew Daley, Suzanne McEndoo
	LUNCH				
Benjamin Ross	Quantifying quantum steering via semidefinite programming	MPhys	4	2:00 – 2:45pm	Marco Piani, Daniel Oi
Josh Robertson	Satellite free-space optics for quantum communication	BSc Hons Physics	4	2:45 – 3:30pm	Daniel Oi, Marco Piani

Thursday 7th May 2015 - Chair: Dr Gordon Robb, JA ***

Student	Project	Degree	Year	Time	Supervisors
Leon Chan	Ghost imaging and the Klyshko approach	MPhys	4	10:30 – 11:15am	John Jeffers, Marco Piani
	BREAK				
Samuel Anderson	Spiral Bandwidth Control in Optical Parametric Oscillators	MPhys	4	11:30 – 12:15pm	Alison Yao, Francesco Papoff
Lucy Luecke	Parametric Oscillators	ERASMUS	4	12:15 – 1:00pm	Francesco Papoff, Alison Yao
	LUNCH				
Ian Shanks	Surface Fields in Layered Nano Particles	BSc Hons Physics	4	2:00 – 2:45pm	Francesco Papoff, Ben Hourahine
Christopher Campbell	Resonances in clouds of cold atoms	BSc Hons Physics	4	2:45 – 3:30pm	Francesco Papoff, Ben Hourahine

Friday 8th May 2015 - Chair: Prof Paul McKenna, JA ***

Student	Project	Degree	Year	Time	Supervisors
Matthew Brown	Computational modelling of X-ray Free electron Lasers	MPhys	4	9:00 – 9:45am	Brian McNeil, Kevin Ronald
Martyn Hunter	Resonant Electron Beam-light Interactions	BSc Hons Physics	4	9:45 – 10:30am	Brian McNeil, Bengt Eliasson
Scott Thomas	Computational modelling of X-ray Free electron Lasers	MPhys	4	10:30 – 11:15am	Brian McNeil, Kevin Ronald

Plasmas

Tuesday 5th May 2015 - Chair: Prof Adrian Cross, JA ***

Student	Project	Degree	Year	Time	Supervisors
Alan Brown	Modelling laser-driven plasma expansion and ion acceleration dynamics	MPhys	4	9:00 – 9:45am	Paul McKenna, Zheng-Ming Sheng
Jonathan Jarrett	Design study on plasma optics	MPhys	4	9:45 – 10:30am	Paul McKenna, Zheng-Ming Sheng
Weicheng He	Numerical simulation of laser interaction with dense magnetized plasma	BSc Hons Physics	4	10:30 – 11:15am	Zheng-Ming Sheng, Paul McKenna
	BREAK				
Madeleine Richards	Autocorrelation using a GaAsP Photodiode for Beam-driven Plasma Wakefield Acceleration	BSc Hons Physics	4	11:30 – 12:15pm	Bernhard Hidding, Silvia Cipiccia
Andrew Beaton	Beam-driven Plasma Wakefield Acceleration (PWFA)	BSc Hons Physics	4	12:15 – 1:00pm	Bernhard Hidding, Silvia Cipiccia
	LUNCH				
Gemma King	Medical Radio-isotope Production using a Laser-Plasma Wakefield Accelerator	MPhys	4	2:00 – 2:45pm	Mark Wiggins, Bernhard Hidding
Calum Bregazzi	Capillary Discharge Waveguides for Laser-Plasma Interactions	BSc Hons Physics	4	2:45 – 3:30pm	Mark Wiggins, Bernhard Hidding
	BREAK				
Adam Ross	Laser Wakefield Acceleration and Betatron Gamma Ray Radiation	MPhys	4	3:45 – 4:30pm	Ranaul Islam, Zheng-Ming Sheng
Kyle Roulston	Electron Beam Transport and Diagnostics	MPhys	4	4:30 – 5:15pm	Enrico Brunetti, Zheng-Ming Sheng

Wednesday 6th May 2015 - Chair: Prof Adrian Cross, JA ***

Student	Project	Degree	Year	Time	Supervisors
Craig Murdoch	Phase-contrast X-ray imaging using an X-ray source based on a laser-plasma accelerator	MPhys	4	11:30 – 12:15pm	Silvia Cipiccia, Bernhard Hidding
Fraser Addies	Radiotherapy using Beams from Laser-plasma Accelerators	MPhys	4	12:15 – 1:00pm	Xue Yang, Bernhard Hidding
	LUNCH				
Alexandra Reid	High-Power Microwave Sources	MPhys	4	2:00 – 2:45pm	Phil MacInnes, Bengt Eliasson