

PH450 Project Viva Timetable 2014

Nanoscience

Monday 28th April 2014 - Chair: Prof Kevin O'Donnell, JA8.24

Student	Project	Degree	Year	Time	Supervisors
Rachel Elvin	Effects of electron irradiation on photoluminescence spectra of thin film Cu(InGa)Se ₂	MPhys Physics	4	9:00 – 9:45am	Rob Martin, Michael Yakushev
Catherine Freeke	Electroluminescence spectroscopy and electrical characterisation of light-emitting diodes	MPhys Physics	4	9:45 – 10:30am	Rob Martin, Paul Edwards
Ivan Morgan	Eu-doped GaN	MPhys Physics	4	10:30 – 11:15am	Kevin O'Donnell, Rob Martin, Erling Riis
	BREAK				
Matthew Lebessis	Luminescence Hysteresis	MPhys Physics	4	11:30 – 12:15pm	Kevin O'Donnell, Paul Edwards, Erling Riis
Hazel Stewart	Nanoparticle Metrology	MPhys Physics	4	12:15 – 1:00pm	David Birch, Jens Sutter
	LUNCH				
Jonathan McSherry	Glucose sensing	MPhys Physics	4	2:00 – 2:45pm	David Birch, Olaf Rolinski
Liam Glen	Biodegradable Choline-based Surfactants for Improving Stability of Carbon Nanoparticle Dispersions in Water	MPhys Physics	4	2:45 – 3:30pm	Maxim Fedorov, David Birch
	BREAK				
Callum Mair	Effects of Alcohols on Stabilization and Bundle Formation of Carbon Nanotubes in Aqueous Dispersions Stabilized by Surfactants	BSc Hons Physics	4	3:45 – 4:30pm	Maxim Fedorov, David Birch
Adam Higginson	Protein adaptation to extreme ionic environments: how bacteria can survive in highly concentrated salty water?	MPhys Physics	4	4:30 – 5:15pm	Olaf Rolinski, Maxim Fedorov

Tuesday 29th April 2014 – Chair: Prof Kevin O'Donnell, JA8.24

Student	Project	Degree	Year	Time	Supervisors
Craig Hooker	Optical Properties of ZnO Powder Doped with Lanthanide and Transition-metal Ions	BSc Hons Physics	4	11:30 – 12:15pm	Tom Han, Olaf Rolinski
Junaid Ahmad	A spectroscopic study Carbon Nano-particles	MPhys Physics	4	12:15 – 1:00pm	Tom Han, Yu Chen
	LUNCH				
Chloe Chung	Optical Properties of Nanoparticles	MPhys Physics	4	2:45 – 3:30pm	Yu Chen, Olaf Rolinski
	BREAK				
William Fleming	Noble Metal Quantum Dots	BSc Hons Physics	4	3:45 – 4:30pm	Yu Chen, Olaf Rolinski
Matthew Risk	Energy Transfer as a Nanoscale Ruler	BSc Hons Physics	4	4:30 – 5:15pm	Yu Chen, Olaf Rolinski

Optics

Tuesday 29th April 2014 - Chair: Prof Erling Riis, JA 8.07

Student	Project	Degree	Year	Time	Supervisors
Stuart Wilson	Digital control circuits	MPhys Physics	4	9:00 – 9:45am	Erling Riis, Paul Griffin, Kevin O'Donnell
Niamh Keegan	Light-Pulse Matter-Wave Interferometer in a Magnetic Waveguide	MPhys Physics	4	9:45 – 10:30am	Erling Riis, Paul Griffin, Kevin O'Donnell
Craig Colquhoun	Highly efficient frequency up-conversion in Rb vapour	MPhys Physics	4	10:30 – 11:15am	Aidan Arnold, Erling Riis, Kevin O'Donnell
	BREAK				
Charelle Dunbar-Dawe	Holographic Atom Traps	MPhys Physics	4	11:30 – 12:15pm	Stefan Kuhr, Elmar Haller
	LUNCH				
Lauren Henry	Historical Physics Equipment	BSc Hons Physics with Teaching	4	2:00 – 2:45pm	Erling Riis, Kevin O'Donnell, Adrian Cross
Neil Stevenson	Optical Second Harmonic Generation in Urea	MPhys Physics	4	2:45 – 3:30pm	Tom Han, Nigel Langford
	BREAK				
Alasdair Rutherford	Characterisation of irregular shaped particles by optical microscopy and digital imaging	MPhys Physics	4	3:45 – 4:30pm	David McKee, Alex Cunningham

Wednesday 30th April 2014 - Chair: Prof Erling Riis, JA 8.07

Student	Project	Degree	Year	Time	Supervisors
Craig Picken	Control of Quantum Cascade chirped laser pulses via dispersion management	BSc Hons Physics	4	9:00 – 9:45am	Nigel Langford, Geoff Duxbury
Benjamin Wright	Non-resonant optical cavities	BSc Hons Physics	4	9:45 – 10:30am	Nigel Langford, Alison Yao
David Morrison	Resonant optical cavities	BSc Hons Natural Sciences	4	10:30 – 11:15am	Nigel Langford, Alison Yao
	BREAK				
John McPhillimy	Silicon micro-resonators for non-linear optics	MPhys Physics	4	11:30 – 12:15pm	Michael Strain, Nicolas Laurand
Raphael Cathagne	Direct laser writing of mechanically-flexible hybrid photonic devices	Physics	4	12:15 – 1:00pm	Nicolas Laurand, Benoit Guilhaert
	LUNCH				
Gillian Shenstone	Optical spectroscopy of distant sources	BSc Hons Physics	4	2:00 – 2:45pm	Carol Trager-Cowan, David McKee
	BREAK				
Peter Graham	Optimized Wavelengths for Second Harmonic Generation Imaging of Collagen	BSc Hons Physics	4	3:45 – 4:30pm	Gail McConnell, Johanna Tragardh

Theory

Tuesday 29th April 2014 - Chair: Dr Gordon Robb, JA 8.11

Student	Project	Degree	Year	Time	Supervisors
Craig Gordon	Nanosatellite optics for free-space quantum communication	MPhys Physics	4	9:45 – 10:30am	Daniel Oi, Alison Yao
Christopher Gibson	Pattern Formation and Turbulent Helical Waves	BSc Hons Physics	4	10:30 – 11:15am	Gian-Luca Oppo, Alison Yao
	BREAK				
Liviu Chirondoan	Exotic quantum operations with light	MPhys Physics	4	11:30 – 12:15pm	John Jeffers, Daniel Oi
Johnathan Conway	Quantum Optical Computational Toolbox	MPhys Physics	4	12:15 – 1:00pm	John Jeffers, Gian-Luca Oppo
	LUNCH				
Sean Davies	The theory of X-ray Free electron Lasers	MPhys Physics	4	2:00 – 2:45pm	Brian McNeil, Gordon Robb, Adrian Cross
Robert Smith	Cold atom-light interactions	BSc Hons Physics	4	2:45 – 3:30pm	Gordon Robb, Brian McNeil, Adrian Cross
	BREAK				
James Simpson	The scientific applications of X-ray Free Electron Lasers	MPhys Physics	4	3:45 – 4:30pm	Brian McNeil, Gordon Robb, Adrian Cross
Roseanne Clement	Atmospheric Correction of Remote Sensing Imagery	MPhys Physics	4	4:30 – 5:15pm	David McKee, Alex Cunningham

Wednesday 30th April 2014 - Chair: Dr Gordon Robb, JA 8.11

Student	Project	Degree	Year	Time	Supervisors
Stephen Howorth	The Physics of DNA	MPhys Physics	4	9:00 – 9:45am	Neil Hunt, Glenn Burley
Kelsey Provan	Predicting Solvation Thermodynamics of Bioactive Molecules	MPhys Physics	4	9:45 – 10:30am	Maxim Fedorov, David Palmer
Peter Tinning	Testing for gravitational coupling to Entropy	MPhys Physics	4	10:30 – 11:15am	Nick Lockerbie, Tom Han
	BREAK				
Robert Harris	Optical forces on nanoparticles	MPhys Physics	4	12:15 – 1:00pm	Ben Hourahine, Francesco Papoff, Gordon Robb
	LUNCH				
Fiona Hynd	Simulations of Coupled Laser Networks	BSc Hons Physics	4	2:00 – 2:45pm	Gian-Luca Oppo, Thorsten Ackemann
Kristofer Gray	BEC-light interactions	MPhys Physics	4	2:45 – 3:30pm	Gordon Robb, Gian-Luca Oppo, Kevin O'Donnell

Plasmas

Thursday 1st May 2014 - Chair: Dr Adrian Cross, Col 3.20

Student	Project	Degree	Year	Time	Supervisors
John McCreadie	High energy ion acceleration in intense laser-plasma interactions	MPhys Physics	4	10:30 – 11:15am	Paul McKenna, Ross Gray
	BREAK				
Michael Ross	Design, simulation and measurement of a re-entrant klystron cavity	BSc Hons Physics	4	11:30 – 12:15pm	Adrian Cross, Liang Zhang Gordon Robb
Christopher Garvin	Design of components for a THz millimetre wave amplifier	BSc Hons Physics	4	12:15 – 1:00pm	Wenlong He, Craig R. Donaldson, Adrian Cross Gordon Robb
	LUNCH				
John Carson	Sweep Frequency Microwave Pulse Compression using a Helically Corrugated Waveguide	BSc Hons Physics	4	2:00 – 2:45pm	Kevin Ronald, Wenlong He
Timothy Heelis	Simulation of electromagnetic waves in magnetized plasmas	MPhys Physics	4	2:45 – 3:30pm	Bengt Eliasson, Kevin Ronald
	BREAK				
Martyn Lees	Design of a Frequency Swept, Multi-Megawatt, Cherenkov Oscillator	BSc Hons Physics	4	3:45 – 4:30pm	Kevin Ronald, Philip MacInnes

Friday 2nd May 2014 - Chair: Dr Adrian Cross, Col 3.20

Student	Project	Degree	Year	Time	Supervisors
Gregor Garbutt	Radiotherapy using Beams from Laser-plasma Accelerators	MPhys Physics	4	9:00 – 9:45am	Dino Jaroszynski, Silvia Cipiccia
Euan Kleboe	Non-linear Optics in Plasma: Raman Amplification and Frequency Mixing	BSc Hons Mathematics and Physics	4	9:45 – 10:30am	Dino Jaroszynski, Bernhard Ersfeld
Lewis Reid	Capillary Discharge Waveguides for Laser-Plasma Interactions	MPhys Physics	4	10:30 – 11:15am	Dino Jaroszynski, Mark Wiggins
	BREAK				
Alexander Macleod	Radiation Reaction	MPhys Physics	4	11:30 – 12:15pm	Dino Jaroszynski, Adam Noble
Alexander Macdonald	Laser-Wakefield Plasma Accelerated electron optimization for Very High Energy Electron (VHEE) cancer treatment	MPhys Physics	4	12:15 – 1:00pm	Dino Jaroszynski, Silvia Cipiccia
	LUNCH				
Callum Runciman	Beam-driven Plasma Wakefield Acceleration (PWFA)	MPhys Physics	4	2:00 – 2:45pm	Bernhard Hidding, Dino Jaroszynski
Gavriil Chatzitheodoridis	Atomic Processes for Astrophysical Plasmas	BSc Hons Physics	4	2:45 – 3:30pm	Nigel Badnell, Luis Fernandez-Menchero