Title of Project	Division	1st Supervisor	2nd Supervisor	Notes
Design and Simulation of an electron beam source for a Millimetre Wave Klystron	Plasmas	Adrian Cross	Liang Zhang	4th, Michael Ross
Highly efficient frequency up-conversion in Rb vapour	Optics	Aidan Arnold	Erling Riis	4th, Craig Colquhoun
Optical forces on nanoparticles	Nanoscience	Ben Hourahine	Francesco Papoff, Gordon Robb	4th, Robert Harris
Simulation of electromagnetic waves in magnetized plasmas	Plasmas	Bengt Eliasson	Kevin Ronald, David Speirs	4th, Timothy Heelis
Beam-driven Plasma Wakefield Acceleration (PWFA)	Plasmas	Bernhard Hidding	Dino Jaroszynski	4th, Callum Runciman
The theory of X-ray Free electron Lasers	Optics	Brian McNeil	Gordon Robb	4th, Sean Davies
The scientific applications of X-ray Free Electron Lasers	Optics	Brian McNeil	Gordon Robb	4th, James Simpson
Resonant Electron Beam-light Interactions	Optics	Brian McNeil	Gordon Robb	5th, Ben Docherty
Optical spectroscopy of distant sources	Nanoscience	Carol Trager-Cowan	David McKee	4th, Gillian Shenstone
Nanosatellite optics for free-space quantum communication	Optics	Daniel Oi	Alison Yao	4th, Craig Gordon
Nanoparticle metrology	Nanoscience	David Birch	Jens Sutter	4th, Hazel Stewart
Glucose sensing	Nanoscience	David Birch	Olaf Rolinski	4th, Jonathan McSherry
Modifying Melanin's Structure	Nanoscience	David Birch	Jens Sutter	5th, Alastair Davy
Spectral deconvolution of inherent optical properties in marine water columns	Nanoscience	David McKee	Alex Cunningham	5th, Callum Shanks
Characterisation of irregular shaped particles by optical microscopy and digital imaging	Nanoscience	David McKee	Alex Cunningham	4th, Alasdair Rutherford
Measurements of the absorption coefficients of suspended particles	Nanoscience	David McKee	Alex Cunningham	4th, Roseanne Clement
Hyperspectral transmissometry using a supercontinuum laser	Nanoscience	David McKee	Alex Cunningham	5th, Chris McLaughlin
Laser Wakefield Acceleration and Betatron Gamma Ray Radiation	Plasmas	Dino Jaroszynski	Ranaul Islam	5th, Adam Mackie
Radiation Reaction	Plasmas	Dino Jaroszynski	Adam Noble	5th, Hannah Currie; 4th, Alexander MacLeod
Non-linear Optics in Plasma: Raman Amplification and Frequency Mixing	Plasmas	Dino Jaroszynski	Bernhard Ersfeld	4th, Euan Kleboe
Capillary Discharge Waveguides for Laser-Plasma Interactions	Plasmas	Dino Jaroszynski	Mark Wiggins	4th, Lewis Reid
Phase-contrast X-ray imaging using an X-ray source based on a laser-plasma accelerator	Plasmas	Dino Jaroszynski	Silvia Cipiccia	5th, Maria Weikum
Laser-Wakefield Plasma Accelerated electron optimization for Very High Energy Electron	Plasmas	Dino Jaroszynski	Silvia Cipiccia	4th Alexander MacDonald
Radiotherapy using Beams from Laser-plasma Accelerators	Plasmas	Dino Jaroszynski	Silvia Cipiccia	4th, Gregor Garbutt
Historical Physics Equipment	Optics	Erling Riis	Kevin O'Donnell	4th, Lauren Henry
Atom interferometry in ring traps	Optics	Erling Riis	Paul Griffin	4th, Niamh Keegan
Digital control circuits	Optics	Erling Riis	Paul Griffin	4th, Stuart Wilson
Coherent Population Trapping in Atomic Vapours	Optics	Erling Riis	Paul Griffin	5th, Calum Macrae
Fluctuations and Noise in Cold Atoms	Optics	Francesco Papoff	Gordon Robb	5th, Richard Peddie
Short-wavelength Two-photon Microscopy	Centre for Biophotonics	Gail McConnell	Johanna Tragardh	4th, Peter Graham
Simulations of Coupled Laser Networks	Optics	Gian-Luca Oppo	Thorsten Ackemann	4th, Fiona Hynd
Pattern Formation and Turbulent Helical Waves	Optics	Gian-Luca Oppo	Alison Yao	4th, Christopher Gibson
Simulations of Spin-Polarized Vertical-Cavity Surface-Emitting Lasers	Optics	Gian-Luca Oppo	Thorsten Ackemann	5th, Calum Williams
Interaction of Spatial Optical Solitons	Optics	Gian-Luca Oppo	Willie Firth	5th, Mark Boules
BEC-light interactions	Optics	Gordon Robb	Gian-Luca Oppo	4th, Kristofer Gray
Cold atom-light interactions	Optics	Gordon Robb	Brian McNeil	4th, Robert Smith
BEC simulations	Optics	Gordon Robb	Aidan Arnold	5th, Dominic Hunter
Exotic quantum operations with light	Optics	John Jeffers	Daniel Oi	4th, L Chirondojan
Quantum Optical Computational Toolbox	Optics	John Jeffers	Gian-Luca Oppo	4th Johnathan Conway
Neurophotonic Devices for Interfacing with Neural Circuits in the Brain	Institute of Photonics	Keith Mathieson	Niall McAlinden	5th, C Papadopoulos
Luminescence Hysteresis	Nanoscience	Kevin O'Donnell	Paul Edwards	4th, Matthew Lebessis
Inter and Intra-band Spectroscopy of GaN Quantum Dots	Nanoscience	Kevin O'Donnell	Rob Martin	4th, Ivan Morgan
Design of a Frequency Swept, Multi-Megawatt, Cherenkov Oscillator	Plasmas	Kevin Ronald	Philip MacInnes	4th, Martyn Lees
Sweep Frequency Microwave Pulse Compression using a Helically Corrugated Waveguide	Plasmas	Kevin Ronald	Wenlong He	5th, Thomas Duffy; 4th, John Carson
Predicting Solvation Thermodynamics of Bioactive Molecules	Nanoscience	Maxim Fedorov	Neil Hunt, David Palmer	4th, Kelsey Provan

Molecular Mechanisms of Biological Adaptation to Extreme Ionic Environments	Nanoscience	Maxim Fedorov	Neil Hunt, David Palmer	5th, Kelly Thomson
Effects of Alcohols on Stabilization and Bundle Formation of Carbon Nanotubes in Aqueou	Nanoscience	Maxim Fedorov	David Birch	4th, Callum Mair
Biodegradable Choline-based Surfactants for Improving Stability of Carbon Nanoparticle D	Nanoscience	Maxim Fedorov	David Birch	4th, Liam Glen
Silicon micro-resonators for non-linear optics	Institute of Photonics	Michael Strain	Nicolas Laurand	4th, John McPhillimy
Uncovering the early stages of protein folding	Nanoscience	Neil Hunt	Paul Hoskisson	5th, Oliver Hay
The Physics of DNA	Nanoscience	Neil Hunt	Katrin Adamczyk, Glenn Burley	4th, Stephen Howorth
A Physical Investigation of Protein-drug Binding	Nanoscience	Neil Hunt	Paul Hoskisson	5th, Audrey Gillies
Testing for gravitational coupling to Entropy.	Nanoscience	Nick Lockerbie	Tom Han	4th, Peter Tinning
Direct laser writing of mechanically-flexible hybrid photonic devices	Institute of Photonics	Nicolas Laurand	Benoit Guilhabert	4th, Raphael Cathagne
Atomic Processes for Astrophysical Plasmas	Plasmas	Nigel Badnell		4th, Gavriil Chatzitheodoridis
Resonant optical cavities	Optics	Nigel Langford		4th, David Morrison
Non-resonant optical cavities	Optics	Nigel Langford	Alison Yao	4th, Benjamin Wright
Control of Quantum Cascade chirped laser pulses via dispersion management (BSc) Comp	Optics	Nigel Langford	Geoff Duxbury	4th, Craig Picken
Quantum Cascade Laser Sensing of Gaseous Isotopes	Optics	Nigel Langford	Geoff Duxbury	5th, Lisa Blair
Protein adaptation to extreme ionic environments: how bacteria can survive in highly con	Nanoscience	Olaf Rolinski	Maxim Fedorov	4th, Adam Higginson
Intrinsic Fluorophores in Sensing Applications	Nanoscience	Olaf Rolinski	Yu Chen	5th, Damien McLaughlin
Fabricating Amyloid Functional Materials for Artificial Photosynthesis	Nanoscience	Olaf Rolinski	Yu Chen	5th, Holly Little
High energy ion acceleration in intense laser-plasma interactions	Plasmas	Paul McKenna	Ross Gray	4th, John McCreadie
Effects of electron irradiation on photoluminescence spectra of thin film Cu(InGa)Se2	Nanoscience	Rob Martin	Michael Yakushev	4th, Rachel Elvin
Electroluminescence spectroscopy and electrical characterisation of light-emitting diodes	Nanoscience	Rob Martin	Paul Edwards	4th, Catherine Freeke
Characterisation of Bulk and Thin film Semiconductor Layers for Solar Cells	Nanoscience	Rob Martin	Michael Yakushev	5th, Christopher Bryce
Holographic Atom Traps	Optics	Stefan Kuhr	Graham Bruce	4th, Charelle Dunbar-Dawe
Polarization and Feedback Dynamics of VCSELs	Optics	Thorsten Ackemann	Erling Riis	5th, Mark Logan
Self-organized Patterns in Rb Vapour	Optics	Thorsten Ackemann	Aidan Arnold	5th, Martin Grant
Optical Properties of ZnO Powder Doped with Lanthanide and Transition-metal Ions	Nanoscience	Tom Han	Olaf Rolinski	4th, Craig Hooker
Optical Second Harmonic Generation in Urea	Nanoscience	Tom Han	Nigel Langford	4th, Neil Stevenson
Stimulated Raman spectroscopy (SRS) of Organic liquids	Nanoscience	Tom Han	David McKee	5th, Kyle Bryson
A spectroscopic study Carbon nano-particles	Nanoscience	Tom Han	Yu Chen	4th, Junaid Ahmad
Design of components for a THz millimetre wave amplifier	Plasmas	Wenlong He	Craig R. Donaldson, Adrian Cross	4th, Christopher Garvin
Energy Transfer as a Nanoscale Ruler	Nanoscience	Yu Chen	Olaf Rolinski	4th, Matthew Risk
Optical Properties of Nanoparticles	Nanoscience	Yu Chen	Olaf Rolinski	4th, Chloe Chung
Noble Metal Quantum Dots	Nanoscience	Yu Chen	Olaf Rolinski	4th, William Fleming