

Declan Oller

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declan-oller

EDUCATION

2011 – 2017 **Doctor of Philosophy, Physics, Brown University, Providence, RI**

- Doctoral advisor: Professor Jimmy Xu
- Dissertation: "Anodic Alumina as a Scalable Platform for Structural Coloration and Optical Rectification"

2011 – 2013 **Master of Science, Physics, Brown University, Providence, RI**

- Classes: Classical Mechanics, Quantum Mechanics I & II, Electrodynamics, Statistical Mechanics, Laboratory Experiments and Techniques, Solid State Physics I & II, Semiconductor Heterostructures, VLSI Design

2007 – 2011 **Bachelor of Arts, Physics & Mathematics, Clark University, Worcester, MA**

- Thesis advisor: Professor Charles Agosta
- Thesis: "Experiments with Thermophoresis Using Direct Simulation Monte Carlo Simulations".

RESEARCH EXPERIENCE

July 2012 – September 2017

Research Assistant

Professor Jimmy Xu, Department of Physics, Brown University, Providence, RI

- Experimental research on Scalable Structural Coloration, Optical Rectification, Resistive Switching, Confined Electron Systems
- Regularly performed microfabrication, experiment setup, data analysis
- Article, grant, and project review writing and editing
- Trained and directed undergraduate and newer graduate students

July 2011 – September 2011

Research Assistant

Professor Sean Ling, Department of Physics, Brown University, Providence, RI

- Simulation of first passage times for DNA translocation in the nanopore research experiment using C++

May 2010 – May 2011

Research Assistant

Professor Charles Agosta, Physics Department, Clark University, Worcester, MA

- Simulation of rarefied gas for general boundary conditions using Monte Carlo techniques with C++

July 2009 – September 2009

Physical Technician

Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

- Development of Matlab code for the data acquisition program of an Advanced Frequency Counter for an experiment of the Weak Equivalence Principle

SKILLS

Experimental skills

SEM, FIB, TEM, AFM, FTIR spectroscopy, Photolithography, Electron-beam lithography, Thermal and Electron Beam evaporation, RIE and PECVD, Clean room procedure, Cryostat operation, Machining (lathe, milling machine, etc), Electronic circuit design, Electroplating and anodization.

Computer skills

Strong competency: Mathematica, LabVIEW, Python, C++, GNU/Linux
Familiar with: Matlab, Java, HTML/PHP, \LaTeX

ADDITIONAL INFORMATION

Interests

Cello, Guitar, Photography, Effects pedal design, Strategy games