

KEVIN FISCHER

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Education

Massachusetts Institute of Technology 4.8/5.0 GPA

Candidate for S.B. in Electrical Engineering and Electrical Science. June 2012.

Relevant Undergraduate Course Work: 6.003 Signals and Systems, 6.004 Computation Structure, 6.012 Microelectronics, 6.013 Electromagnetics and Applications, 6.101 Introductory Analog Electronics Laboratory, 6.115 Microcomputer Project Laboratory, 6.161 Modern Optics Project Laboratory

Relevant Graduate Course Work: 6.719 Nanoelectronics, 6.730 Physics for Solid State Applications, 6.728 Applied Quantum and Statistical Physics, 6.774 Physics of Microfabrication: Front End Processing

Experience

Pablo Jarillo-Herrero Group, Condensed Matter Experiment MIT

Undergraduate Researcher. *June 2011 to Present.*

Studying high quality, high frequency graphene nanoelectromechanical resonators utilizing nanofabrication, low-temperature, and RF measurement techniques. Leading effort in perfecting our fabrication procedure to improve the yield of high-mobility samples.

EECS Department Tour Guide at MIT

Undergraduate Tour Guide. *June 2011 to Present.*

Excited prospective students about MIT undergraduate life and the opportunities the EECS department provides over two-hour tours.

Applied Science and Technology Research Institute of Hong Kong

Intern. *Summer 2010.*

Developed simulation of G3 PHY Layer protocol for theoretical bit error rate determination. Results used as benchmark for future development of an integrated circuit for robust communications over power line.

Martin Zwierlein Group, Center for Ultracold Atoms MIT

Undergraduate Researcher. *February to December 2009.*

Helped to construct experimental apparatus that allowed the pairing of different fermionic species. Built electronics for the complex laser system required to cool the potassium-40 and lithium-6 ions.

Projects

Graphene Properties Report

Spring 2011. Performed diffraction, phonon characteristic, and tight binding calculations for graphene with team.

Molecular Transistor Simulation

Spring 2011. Calculated electronic transport characteristics of molecular transistors and wires.

Interferometric Microphone

Fall 2010. Constructed interferometric microphone capable of recording music with fellow classmate.

Transient Enhanced Diffusion (TED) Simulation

Fall 2010. Implemented TED model in TSUPREM4 process simulator, compared predictions to experiment.

Microcontroller Driven Inverted Pendulum

Spring 2009. Designed and implemented self-inverting and -stabilizing under-actuated pendulum.

Skills

Nanofabrication Skills

General cleanroom, wet bench, acid bench, and optical microscopy skills

ICP (STS) and ECR (Nexx) reactive ion etching for graphene etching

JEOL JSM-7000F scanning electron microscope for imaging and lithography

Sharon Thermal Evaporators for contact deposition

Wire bonder for sample preparation

Veeco AFM for device characterization

Software

DesignCAD and NPGS for electron-beam lithography

Programming experience with Matlab, Assembly (MCS-51 family of micros), C, Python

LaTeX, SPICE, Eagle, TSUPREM4

Experience running Linux server