

Kaylee McElroy

(517) 488-4536
kaylees@gmail.com

EDUCATION:

Graduate: Michigan State University, M.S. Electrical Engineering

Expected Graduation: Spring 2009

Total GPA: 3.79

Undergraduate: Brigham Young University 2002-2006

Graduated: August 2006, with Honors

Major: BS Physics, **Minors:** Mathematics, Classics-Classical Civilization

Total GPA: 3.61

RELATED WORK EXPERIENCE:

Course Instructor, Senior Level Optoelectronics, MSU ECE Dept.

[May 2008...June 2008]

-Designed lesson plans and gave lectures

-supervised Lab TA/Grader

Research Assistant, MSU ECE Dept.

[September 2006 to present]

-Studied the growth matrix of multi-domain GaN nanowires using SEM and XRD

-Assisted in run at National Superconducting Cyclotron Laboratory to test radiation tolerance of GaN nanowire circuits, carbon nanotubes, and carbon onions

-Created GaN nanowire circuits using Electron Beam Lithography and imaged them with AFM

Research Experience for Undergraduates (REU)

Cornell Nanoscale Science and Technology Center

[June 2005...August 2005]

-Imaged various growths of GaN nanowires with SEM

-Fabricated FETs with GaN nanowires using photolithography

-Took current/voltage measurements of the FETs and found that they demonstrated transistor behavior

Experimental Lab Teacher's Assistant

(MSU) Senior Level Contact Lithography, Senior Level Optics,

(BYU) Freshman Level Physics

-Helped students understand experiments and graded lab notebooks, papers, and lab reports

-Improved written lab instructions

Research Assistant, BYU Physics Dept.

[April 2004...July 2006]

-Developed procedures for lab's new AFM

-Imaged DNA and ribosome samples in fluid using AFM

-Used Force-Distance Mode AFM to measure carbon nanotube interaction with silicon dioxide surface

PUBLICATIONS:

K. McElroy, R. C. Davis, and A. Hawkins, Appl. Phys. Lett. **91**, 233119 (2007).

B. W. Jacobs, *et al.*, Nano Lett. **7**, 1435-1438 (2007).

B. W. Jacobs, *et al.*, Nano Lett. **8**, 4353-4358 (2008).

B. W. Jacobs, *et al.*, Nanotech. **19**, 405706 (2008).

TECHNICAL SKILLS:

Proficient:

AFM

SEM

TEM

E-beam and Photo lithography

Reactive Ion Etch

Evaporator: thermal and e-beam

Rapid Thermal Anneal

Maple 9/9.5

Experience With:

XRD

Micro Raman Spectroscopy

Ellipsometry

LabVIEW

Matlab

Metal machining

SCHOLARSHIPS/GRANTS:

-MSU Graduate Assistantship

-Research funding through BYU Honors program and ORCA

-Brigham Young Scholarship

1/2 tuition 2003-2005

-Brigham Young Bicentennial

Scholarship full tuition 2002-2003

REFERENCES:

Dr. Virginia Ayres, MSU (517) 355-5236

Dr. Robert Davis, BYU (801) 592-0157

Dr. Thomas Bieler, MSU (517) 353-9767