Kraig J. Andrews

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Research Interests

Two-dimensional materials, nanotechnology, transition metal dichalcogenides, field-effect transistors, semiconductor physics, materials physics

Education

Wayne State University, Detroit, MI

Ph.D., Physics, *Expected:* Fall 2018, GPA: 3.50/4.00

- Thesis Topic: "Intrinsic Channel Properties, Scattering Mechanisms, and Quantum Transport Properties in Transition Metal Dichalcogenides"
- Advisor: Zhixian Zhou, Ph.D

Michigan State University, East Lansing, MI

B.S., Physics, May 2014, GPA: 3.25/4.00

B.S., Astrophysics, May 2014

Research Experience

Graduate Research Assistant — May 2015–Present
Nano Fabrication and Electron Transport Laboratory,
Department of Physics and Astronomy,
Wayne State University
Supervisor: Zhixian Zhou, Ph.D.

Undergraduate Research Assistant — Feb 2013–Dec 2013
Neutron Star Evolution and Developmental Limits,
Department of Astronomy,
Michigan State University
Supervisor: Edward Brown, Ph.D

Undergraduate Research Assistant — May 2012–Jan 2013
High Resolution Array Group (HIRA): SAMURAI-TPC Project
National Superconducting Cyclotron Laboratory,
Michigan State University
Supervisors: William Lynch, Ph.D and Betty Tsang, Ph.D.

Publications

1. Chamlagain, B., Perera, M., Chuang, H.J., Bowman, A., Rijal, U., **Andrews, K.**, Klesko, J., Winter, C., Zhou, Z. "Substrate dependence of Hall and Field-effect mobilities in few-layer MoS_2 field-effect transistors." *Manuscript in preperation*, 2016.

Teaching Experience

Teaching Assistant — Fall 2015
PHY 2130 - General Physics I
Instructor: Karur Padmanabhan, Ph.D.
Wayne State University

Teaching Assistant — Summer 2015
PHY 2131 - General Physics Laboratory I
Instructor: Xiang-Qiang Chu, Ph.D.
Wayne State University

Teaching Assistant — Fall 2014–Winter 2015
AST 2010 - Descriptive Astronomy Laboratory
Instructor: Edward Cackett, Ph.D
Wayne State University

Teaching Assistant — Winter 2014
PHY 0232 - Introductory Physics II
Instructor: Stuart Tessmer, Ph.D
Michigan State University

Teaching Assistant — Winter 2013
AST 0208 - Planets and Telescopes
Instructor: Edward Loh, Ph.D
Michigan State University

Teaching Assistant — Fall 2013
PHY 0231 - Introductory Physics I
Instructor: Tibor Nagy, Ph.D
Michigan State University

Teaching Assistant — Winter 2012
PHY 0232 - Introductory Physics II
Instructor: Stuart Tessmer, Ph.D
Michigan State University

Hardware and Software Skills

Fabrication, Data Acquisition, Testing, and Measurement:

- LabView, Atomic Force Microscopy (AFM), Electron Beam Lithography, Photolithography, Computer-Aided Design (CAD), Scanning Electron Microscopy (SEM), and others

Computer Programming:

- C, C++, Fortran, GNU make, MATLAB, Mathematica, Python, UNIX shell scripting, and Visual Basic

Operating Systems:

- Microsoft Windows family, Apple OS X, Linux OS

Desktop Editing:

- TEX(LATEX, BIBTEX)
- Microsoft Office, OpenOffice, LibreOffice
- GIMP, InkScape

Relevant Graduate Coursework

- Advanced Quantum Mechanics I & II
- Survey of Condensed Matter Physics
- Statistical Mechanics
- Electrodynamics
- Thermal Physics