Guanzhong Wu

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Professional Summary

- A problem solver, team player, initiative taker and supportive leader
- 6+ years of research experience, hands-on skills on material characterization, nano-scale device fabrication, and high sensitivity measurement
- Exceptional data processing, analytical modelling and numerical simulation capability

Education

The Ohio State University — Columbus, Ohio

Ph. D. in Physics — Expected December 2021

Beihang University — Beijing, China

B. S. in Physics, Mathematics Minor — June 2014

Skills

Measurement:

- Radio frequency (RF) measurement
- Scanning probe force microscope
- Electrical transport measurement
- Low temperature measurement

Fabrication and material growth

- E-beam lithography, photolithography
- Metal e-beam evaporation and sputtering
- Molecular beam epitaxy (MBE) growth
- Plasma enhanced chemical vapor deposition (CVD)

Programming:

- Python (numpy, scipy, pandas, qiskit, pycuda, pymeasure, pyvisa, pyqt, etc.)
- Matlab, mathematica, C#, labview, etc.

Graduate Research Experience

Prof. P. Chris Hammel's group — Dec. 2017 – Present

- Investigating magnetization dynamics using ferromagnetic resonance (FMR) measurement and high sensitivity scanned probe FMR force microscope
- Simulating large scale magnetic system dynamics with GPU-accelerated finite-difference discretization method (MuMax3 package)
- Training junior team members on experimental techniques and instrument operations in the lab
- Tutoring numerical simulation for Research Experiences for Undergraduates (REU) program

Prof. Roland Kawakami's group — Aug. 2016 – Dec. 2017

- Operated and maintained ultra-high vacuum (UHV) system
- Fabricated two-dimensional material device for optical and transport measurement

Work Experience

Guangzhou Mochu & Prof. Jianhao Chen's group, Peking University — June 2014 – Dec 2015

- Vertically standing graphite (VSG) for supercapacitor application
  - Achieved plasma enhanced CVD growth of VSG and developed supercapacitor packing procedure
  - Characterized the performance of the VSG supercapacitor final product

Publication List

- "Nanoscale imaging of Gilbert damping using signal amplitude mapping." *APL* 118.4 (2021): 042403.
- "Nonlocal Uniform-Mode Ferromagnetic Resonance Spin Pumping." *Nano Letters* 20.10 (2020): 7257-7262.
- "Local measurement of interfacial interactions using ferromagnetic resonance force microscopy." *PRB* 101.18 (2020): 184409.
- "Long lifetime of thermally excited magnons in bulk yttrium iron garnet." *PRB* 100.13 (2019): 134402.
- "Spin inversion in graphene spin valves by gate-tunable magnetic proximity effect at one-dimensional contacts." *Nature communications* 9.1 (2018): 1-6.
- "Opto-valleytronic spin injection in monolayer MoS2/few-layer graphene hybrid spin valves." *Nano letters* 17.6 (2017): 3877-3883.