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Yan Wu

Neutron Scattering Scientist
Neutron Sciences Directorate, Oak Ridge National laboratory

Education

09.2002-07.2006, Northwest University, China, Bachelor degree in Physics

Thesis project: Theoretical calculations of carbon clusters with Hartree-Fock theory using *Gaussian* 98.

09.2006-12.2008, Fujian Institute of Research on Structure of Matters, Chinese Academy of Science, China, Master degree in Condensed Matter Physics

Thesis project: Theoretical research on interaction of Cd^{2+} with DNA and RNA molecules, *ab initio* calculation using Density function theory.

01.2009-05.2016, Louisiana State University, Ph.D. degree in Physics

Thesis project: Interactions between local magnetic moments and itinerant charge carriers in Fe-based systems.

Publication:

- Yan Wu, Kun Zhai, Shipeng Shen et al., Giant magnetoelectric effects achieved by tuning spin cone symmetry in Y-type hexaferrites, *Nature Comm.* 2017, 8(519).
- Yan Wu et al., Spin density wave instability in a ferromagnet, *Scientific reports* 2018, 8(5225).
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- Z.Y. Zhao, Y. Wu et al., Three-dimensional magnetic interactions in quasi-two-dimensional $PdAs_2O_6$, *J. Phys.: Cond. Mat.* 2017, 29(235801).
- Bianca Haberl, Sachith Dissanayake, Yan Wu et al, Next-generation diamond cell and applications to single-crystal neutron diffraction, *Review of Scientific Instruments*, 2018, 89 (092902).
- Huibo Cao, Bryan Chakoumakos, Katie Andrews, Yan Wu et al, DEMAND, a Dimensional Extreme Magnetic Neutron Diffractometer at High Flux Isotope Reactor, *Crystals*, 2019, 9(5).
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- Yan Wu et al., Theoretical studies on the bonding of Cd^{2+} to adenine and thymine: Tautomeric equilibrium and metalation in base pairing, *Chem. Phys. Lett.* 2010, 467(387).

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- J.-Q. Yan, Y. H. Liu, D. S. Parker, Y. Wu, A. A. Aczel, M. Matsuda, M. A. McGuire, and B. C. Sales, A-type antiferromagnetic order in $MnBi_4Te_7$ and $MnBi_6Te_{10}$ single crystals, *Phys. Rev. Materials*, 2020, 4(054202)
- Lei Ding, Minseong Lee, Eun Sang Choi, Jing Zhang, Yan Wu, Ryan Sinclair, Bryan C. Chakoumakos, Yisheng Chai, Haidong Zhou, and Huibo Cao, Large spin-driven dielectric response and magnetoelectric coupling in the buckled honeycomb $Fe4Nb_2O_9$, *Phys. Rev. Materials*, 2020, 4(084403)
- B. Haberl, M.-E. Donnelly, Y. Wu, E. Kroll, M. Frontzek, J. Molaison and G. Granroth, Synthesis and characterization of metastable crystalline st12 germanium, *Acta Cryst.*, 2020, 76(131)
- M.-E. Donnelly, B. Haberl, Y. Wu, E. Kroll, M. Frontzek and J. Molaison, High-pressure neutron diffraction on $WAND^2$ in a Paris–Edinburgh press, *Acta Cryst.*, 2020, 76(190)
- K. Lu, D. Sapkota, L. DeBeer-Schmitt, Y. Wu, H. B. Cao, N. Mannella, D. Mandrus, A. A. Aczel, and G. J. MacDougall, Canted antiferromagnetic order in the monoaxial chiral magnets $V_{1/3}TaS_2$ and $V_{1/3}NbS_2$, *Phys. Rev. Materials*, 2020, 4(054416)
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- Karna, Sunil K. and Tristant, D. and Hebert, J. K. and Cao, G. and Chapai, R. and Phelan, W. A. and Zhang, Q. and Wu, Y. et al., Helical magnetic order and Fermi surface nesting in noncentrosymmetric ScFeGe, *Phys.Rev. B*, 2021, 103(014443)

Work Experience

- 01/08/2010-05/15/2011 Louisiana State University, Teaching Assistant in Department of Physics for teaching non-physics major general physics lab 2108 and 2109.
- 05/16/2011-05/13/2016 Louisiana State University, Research Assistant in Department of Physics in Lab of Dr. John DiTusa.
- 06/27/2016-05/30/2019 Oak Ridge National Laboratory, Postdoc Associate working with Dr. Huibo Cao and carrying 25% of the HB-3A beamline local contact tasks. -

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06/01/2019-Present Oak Ridge National Laboratory, Instrument scientist working on neutron instruments DEMAND and WAND^2 at HFIR, ORNL

Skills

Instrument related skills

- Six years experiences communicating with users and supporting teams at a neutron facility instrument, contributing to instrument upgrade and sample environment development in high pressure, magnet and polarizer.
- Experience of on various neutron instruments including single crystal diffractometer, neutron powder diffractometer, triple axis spectrometer and TOP spectrometer.
- Experience in different pressure systems including the Paris-Edinburgh presses, Hard-wood gas pressure, CuBe clamp cell, steel cubic cell and Diamond Avail cells
- Operating various cryogenic systems: MPMS, PPMS, He^3-He^4 dilution refrigerator and cryomagnets
- Practical experience of cryogenic materials, cryogenic system developing and engineering including dilution refrigerator and other cryostats.

Data acquiring and analysis related skills

- **Data processing software:** Matlab, IDL and Mantid data acquisition program coding.
- Familiar with general using electronic instruments in physics and chemistry lab.

Material synthesis and characterizing

- **Synthesis experiences:** arc-melting, RF-induction melting, chemical vapor transport method, metallic flux method and floating zone method
- X-ray diffraction
- Neutron Scattering
- Experience in crystal analysis with Fullprof and WinGX
- **Programming language: c**, Fortran, LabView and Python

Awards

- Louisiana State University Graduate School Enhancement Award, Jan 2009
- LaSigma Leadership Graduate Student Supplement Award, Dec 2013

Language

Chinese(Native Proficiency), English(Full Professional Proficiency)

Reference

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