

Jing Xu

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Professional Background

- **Assistant Professor, Department of Physics, University of Central Florida, 12/2023-present**
- **Postdoc, Pritzker School of Molecular Engineering, University of Chicago, 06/2023-12/2023**
Supervisor: Dr. Supratik Guha
- **Postdoc, Center for Nanoscale Materials, Argonne National Laboratory, 03/2019-05/2023**
Supervisor: Dr. Xufeng Zhang
- **PhD, Condensed Matter Physics, Northern Illinois University, 2013-2019**
Visiting student, Material Science Division, Argonne National Laboratory, 2014-2019
Advisor: Prof. Zhili Xiao (ANL & NIU)
- **BS, Physics, Sichuan University, 2008-2012**

Selected Publications

*Equal contribute, full publication list refers to: [Google Scholar](#)

Magnonics

- **Jing Xu**, Changchun Zhong, Xu Han, Dafei Jin, Liang Jiang, Xufeng Zhang, “Floquet Cavity Electromagnonics”, *Physical Review Letters* 125 (23), 237201 (2020) **highlighted by DOE**
- **Jing Xu**, Changchun Zhong, Xu Han, Dafei Jin, Liang Jiang, Xufeng Zhang, “Coherent Gate Operations in Hybrid Magnonics”, *Physical Review Letters* 126 (20), 207202 (2021) **highlighted by DOE**
- **Jing Xu**, Changchun Zhong, Xianjing Zhou, Xu Han, Dafei Jin, Stephen K. Gray, Liang Jiang, and Xufeng Zhang, “Coherent Pulse Echo in Hybrid Magnonics with Multimode Phonons”, *Physical Review Applied* 16 (2), 024009 (2021)
- Yi Li, Tomas Polakovic, Yong-Lei Wang, **Jing Xu**, Sergi Lendinez, Zhizhi Zhang, Junjia Ding, Trupti Khairé, Hilal Saglam, Ralu Divan, John Pearson, Wai-Kwong Kwok, Zhili Xiao, Valentine Novosad, Axel Hoffmann, and Wei Zhang, “Strong Coupling between Magnons and Microwave Photons in On-Chip Ferromagnet-Superconductor Thin-Film Devices”, *Physical Review Letters* 123(10), 107701 (2019)
- Xufeng Zhang, Kun Ding, Xianjing Zhou, **Jing Xu**, Dafei Jin, “Experimental observation of an exceptional surface in synthetic dimensions with magnon polaritons”, *Physical Review Letters* 123 (23), 237202 (2019)

Topological Quantum Materials

- **Jing Xu***, Fei Han*, Ting-Ting Wang*, Laxman R. Thoutam, Samuel E. Pate, Mingda Li, Xufeng Zhang, Yong-Lei Wang, Roxanna Fotovat, Ulrich Welp, Xiuquan Zhou, Wai-Kwong Kwok, Duck Young Chung, Mercouri G. Kanatzidis, Zhi-Li Xiao, “Extended Kohler’s Rule of Magnetoresistance”, *Physical Review X* 11 (4), 041029 (2021)
- **Jing Xu**, Fengcheng Wu, Jin-Ke Bao, Fei Han, Zhi-Li Xiao, Ivar Martin, Yang-Yang Lyu, Yong-

Lei Wang, Duck Young Chung, Mingda Li, Wei Zhang, John E. Pearson, Jidong S. Jiang, Mercouri G. Kanatzidis & Wai-Kwong Kwok, “Orbital-flop Induced Magnetoresistance Anisotropy in Rare Earth Monopnictide CeSb”, *Nature Communications* 10 (1), 2875 (2019)

- **Jing Xu**, Meng K. Ma, Maksim Sultanov, Zhi-Li Xiao, Yong-Lei Wang, Dafei Jin, Yang-Yang Lyu, Wei Zhang, Loren N. Pfeiffer, Ken W. West, Kirk W. Baldwin, Mansour Shayegan, Wai-Kwong Kwok, “Negative longitudinal magnetoresistance in GaAs quantum wells”, *Nature Communications* 10 (1), 287 (2019)
- **Jing Xu**, Nirmal. J. Ghimire, Jidong Samuel Jiang, Zhi-Li Xiao, Antia Sanchez Botana, Yong-Lei Wang, Yang Hao, John. E. Pearson, Wai-Kwong. Kwok, “Origin of the extremely large magnetoresistance in the semimetal YSb”, *Physical Review B* 96 (7), 075159 (2017)
- **Jing Xu**, Daniel E. Bugaris, Zhi-Li Xiao, Yong-Lei Wang, Duck Young Chung, Mercouri G. Kanatzidis, Wai-Kwong Kwok, “Reentrant metallic behavior in the Weyl semimetal NbP”, *Physical Review B* 96 (11), 115152 (2017)

Superconductivities and Artificial Spin Ice

- Yong-Lei Wang, Zhi-Li Xiao, Alexey Snezhko, **Jing Xu**, Leonidas E. Ocola, Ralu Divan, John E. Pearson, George W. Crabtree, Wai-Kwong Kwok, “Rewritable artificial magnetic charge ice”, *Science* 352 (6288), 962-966 (2016)
- Yong-Lei Wang*, Xiaoyu Ma*, **Jing Xu***, Zhi-Li Xiao, Alexey Snezhko, Ralu Divan, Leonidas E. Ocola, John E. Pearson, Boldizar Janko, Wai-Kwong Kwok, “Switchable geometric frustration in an artificial-spin-ice/superconductor hetero-system”, *Nature nanotechnology* 13 (7), 560-565 (2018).

Journal Referee

- *Physical Review Letters, Physical Review A, Physical Review B, Applied Physics Letters, Journal of Applied Physics, New Journal of Physics, and IEEE Transactions on Magnetics, etc.*

Working Experience

- Postdoctoral Appointee, Argonne National Laboratory, 03/2019-present
- Graduate Research Assistant, Northern Illinois University, 09/2015-03/2019
- Graduate Teaching Assistant, Northern Illinois University, 09/2013-08/2015

Teaching Experience

- Fall 2013 & Spring 2014
Teaching Assistant, General Physics
Physics, Northern Illinois University
- Fall 2014 & Spring 2015
Teaching Assistant, Electromagnetism
Physics, Northern Illinois University

Selected Honors and Awards

- Highlighting excellence of 2019 graduating class, Northern Illinois University, 2019
- Nanoscience Fellowship, Northern Illinois University, 2015-2019

- Summer school grant, Department of Energy, 2017
- Quantum Science Summer School hosted at John-Hopkins University, June 5-17, 2017

Invited Presentations and Seminars

- **Jing Xu**, “Magnetic materials and devices for quantum information science”, University of Central Florida, Orlando, FL, 03/2023.
- **Jing Xu**, “Magnetic materials and devices for quantum information science”, University of Wyoming, Laramie, WY, 02/2023.
- **Jing Xu**, “Magnetic materials and devices for quantum information science”, SUNY Binghamton University, Binghamton, NY, 02/2023.
- **Jing Xu**, “Quantum information science via magnetic materials and devices ”, Colorado State University, Fort Collins, CO, 02/2023.
- **Jing Xu**, “Advance quantum information science using hybrid magnonics”, Northern Illinois University, DeKalb, IL, 04/2022.
- **Jing Xu**, “Switchable geometric frustration in an artificial-spin-ice/superconductor hetero-system”, Argonne National Laboratory, Lemont, IL, 01/2019.
- **Jing Xu**, “Origin of extremely large magnetoresistance in topological semimetals”, Department of Energy quantum summer school, John-Hopkins University, Baltimore, MD, 07/2017

Conference Publications and Presentations

- **Jing Xu**, Meng K. Ma, Maksim Sultanov, Zhi-Li Xiao, Yong-Lei Wang, Dafei Jin, Yang-Yang Lyu, Wei Zhang, Loren N. Pfeiffer, Ken W. West, Kirk W. Baldwin, Mansour Shayegan, Wai-Kwong Kwok, “Negative longitudinal magnetoresistance in GaAs quantum wells”, *American Physics Society (APS) March meeting*, 03/2019 (oral presentation).
- **Jing. Xu**, N. J. Ghimire, Z.L. Xiao, Y. L. Wang, “Origin of extremely large magnetoresistance in the semimetal YSb”, *American Physics Society (APS) March meeting*, 03/2018 (oral presentation).
- **Jing Xu**, Yonglei Wang, Xiaoyu Ma, Zhili Xiao, Boldizsar Janko, Wai-Kwong Kwok, “Vortex matching effect in artificial-spin-ice /superconductor hybrids”, *American Physics Society (APS) March meeting*, 03/2017 (oral presentation).