Curriculum vitae

Hiroyuki Nojiri

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Education

03/1993	Dr. degree of Physics in Department of Physics, Osaka University Development of Repeating Pulsed Magnetic Fields and their applications for μSR and Neutron Diffraction
04/1984-03/1986	Master of Engineering Science, Osaka University
04/1980.4-03/1984	Bachelor in Department of Physics, Kyoto University

Employment

05/2004 -present	Professor at Institute for Materials Research, Tohoku University
04/2001-04/2004	Professor at Department of Physics, Okayama University
05/1995-03/2001	Associate Professor at Institute for Material Research, Tohoku University
11/1991-04/1995	Research Associate at Institute for Solid State Physics, University of Tokyo
04/1986-10/1991	Technical Assistant, Department of Physics, Kobe University

Institutional responsibilities

04/2015-Present	Director of High Magnetic Field Laboratory for Superconducting Materials, Institute for Materials Research, Tohoku University
04/2012-03/2015	Director of International Collaboration Center, Institute for Materials Research, Tohoku University

Approved research projects

04/2019	Grant-in Aid for Basic Science Research(A), JSPS, Japan, 37,000 KJPY Study of Magnetic Field Induced Electronic State Transitions by Pulsed Magnetic Field-XFEL Scattering
04/2018	Grant-in Aid for Science Research in Priority Area, MEXT, Japan, 6,630 KJPY Magnetic Phase Diagram, Correlation and Symmetry in URu_2Si_2
06/2017	Grant-in Aid for Science Challenging Research, JSPS, Japan, 6,500 KJPY Development of Atomic Layer Sensitive XMCD-ESR and Study of Surface-Interface Dynamics
04/2016	Grant-in Aid for Basic Science Research(B), JSPS, Japan, 17,810 KJPY Study of Charge-Spin-Lattice Correlation by High Field-XFEL Diffraction and Spectroscopy

07/2011 Grant-in Aid for Basic Science Research(S), MEXT, Japan, 211,900 KJPY
Study of Quantum Polarized States by High Field Neutron Diffraction and XMCD

Supervision of junior researchers

Since 04/2014 Thesis Advisor of PhD student, Department of Physics, Tohoku University, Hiromasa Yasumura

Since 04/2015 Thesis Advisor of PhD student, Department of Physics, Tohoku University, Satoshi Matsuzawa

Teaching activities

Master course and PhD course lectures at Department of Physics, Tohoku University, Magnetism, Metal Physics, Spintronics special course-Matters in Extremes

Memberships in panels, boards

2003-Present Council Member of Japan High Magnetic Field Forum

2016-Present Technical Proposal Advisory Board for μSR Facilities at KEK

2015-Present Steering Committee of Japan Pulsed High Magnetic Field Collaboratory

2019-Present Vise President of Global High Magnetic Forum

2019-Present Board Member of Physical Society of Japan

2020-Present Vise President of Society of Electron Spin Science and Technology

2014-2020 The Laboratoire National des Champs Magnétiques Intenses (LNCMI) Science Council Science Council

Membership in Scientific Societies

Since 1986 Physical Society of Japan

Since 1990 Japan Society of Muon Science

Since 2002 The Society of Electron Spin Science and Technology

Since 2001 Japan Society for Neutron Science

Since 2006 Japan Society for Synchrotron Radiation Research

Since 2020 Cryogenic and Superconducting Society of Japan

Organization of Conference

09/2017 Co-char of International Conference on Molecular Based Magnet 2016

Prizes

07/1998 Harada Prize for Young Scientist

Career breaks None

Major Scientific Achievement

Research Interest
Study of quantum magnetism in low-dimensional quantum spin systems, strongly correlated electron system and molecular magnets
High magnetic field and high frequency THz-electron spin resonance in magnetic compounds
X-ray and neutron scatterings in high magnetic field, study of field induced phase transitions

Professional experience
Experience in Research in High Magnetic Fields, including non-destructive pulsed fields, electron magnetic flux compression, high frequency electron spin resonance, THz spectroscopies, low temperature physics, X-ray diffraction & Spectroscopies, neutron scattering, μSR, various magnetic characterization, basic transport, thermal properties. Providing mobile high magnetic field generators and related spectrometers for oversea institutes including, Advanced Photon Source, Oakridge National Laboratory, Stanford National Laboratory, Rutherford Appleton Laboratory, Manchester University, Rice University and domestic institutes including J-PARC, SPring8 and SACLA.

Publications
350 ISI articles, 7343 Citation, H-index 44

Recent Invited Talks
X-ray Diffraction and Spectroscopy in Very High Magnetic Fields at the Helmholtz Beamline for Extreme Fields(2018) "Recent Progress in High Magnetic Field Science at SR and XFEL Sources", International Union of Crystallography 2017 (2017) "Neutron Diffraction Experiments in Pulsed Magnetic Fields", 5th International Conference on Superconductivity and Magnetism (2016) "Low Energy Excitations in Spherical Kagome Lattice $Mo_{72}V_{30}$ and Related Materials", Korean Physical Society Meeting (2016) "X-Ray and Neutron Scattering in High Magnetic Fields", Physical Phenomena at High Magnetic Fields-8(2016), "Pulsed High Magnetic Field Experiments with X-Ray FEL", Zentrum für interdisziplinäre Forschung WORKSHOP-Functionalized Molecule-Based Magnetic Materials(2014) "Exchange Coupling in Heterometallic Magnetic Molecules", Helmholtz-Zentrum Berlin Workshop-Neutron Scattering in Magnetic Fields above 15 Tesla(2014) "Present and Future of Neutron Experiments in Pulsed Magnetic Fields and Complementary Use with Steady Fields"

Important Publications
[1] Randomly Hopping Majorana Fermions in the Diluted Kitaev System alpha-$Ru_{0.8}Ir_{0.2}Cl_3$
Do SH, Lee CH, Kihara T, Choi YS, Yoon S, Kim K, Cheong H, Chen WT, Chou FC, Nojiri, H
Phys. Rev. Lett. **124**(2020) 047204.
[2] Magnetic structures and quadratic magnetoelec tric effect in $LiNiPO_4$ beyond 30 T
Fogh, E Kihara, T Toft-Petersen, R Bartkowiak, M Narumi, Y Prokhnenko, O Miyake,
A Tokunaga, M Oikawa, K Sorensen, MK Dyrnum, JC Grimmer, HNojiri, H Christensen, NB
Phys. Rev. B **101**(2020) 024403.
[3] Baker, ML; Wu, SQ; Kang, S; Matsuzawa, S; Arrio, MA; Narumi, Y; Kihara, T; Nakamura, T; Kotani, Y; Sato, O; Nojiri, H
Electron-Transfer Activity in a Cyanide-Bridged Fe-42 Nanomagnet, Inorg. Chem. **58**(2019) 10160-10166.
[4] Jang, H; Lee, WS; Song, S; Nojiri, H; Matsuzawa, S; Yasumura, H; Huang, H; Liu, YJ; Porras, J; Minola, M; Keimer, B; Hastings, J; Zhu, D; Devereaux, TP; Shen, ZX; Kao, CC; Lee, JS

Coincident onset of charge-density-wave order at a quantum critical point in underdoped $YBa_2Cu_3O_x$,
Phys. Rev. B **97**(2018) 224513.
[5] Knafo, W; Aoki, D; Scheerer, GW; Duc, F; Bourdarot, F; Kuwahara, K; Nojiri, H; Regnault, LP; Flouquet, J
URu_2Si_2 under intense magnetic fields: From hidden order to spin-density wave
Physica B **536**(2018) 457-460.
[6] Zvyagin, SA; Graf, D; Sakurai, T; Kimura, S; Nojiri, H; Wosnitza, J; Ohta, H; Ono, T; Tanaka, H
Pressure-tuning the quantum spin Hamiltonian of the triangular lattice antiferromagnet Cs_2CuCl_4
Nat. Commun. **10**(2019) 1064.
[7] W. Knafo, F. Duc, F. Bourdarot, K. Kuwahara, H. Nojiri, D. Aoki, J. Billette, P. Frings, X. Tonon, E. Lelievre-Berna, J. Flouquet, LP. Regnault
Field-induced spin-density wave beyond hidden order in URu_2Si_2, Nat. Commun. 7 (2016) 13075.
[8] S. Gerber, H. Jang, H. Nojiri, S. Matsuzawa, H. Yasumura, DA. Bonn, R. Liang, WN. Hardy, Z. Islam, A. Mehta, S. Song, M. Sikorski, D. Stefanescu, Y. Feng, SA. Kivelson, TP. Devereaux, ZX. Shen, CC. Kao, CC, WS. Lee, WS, D. Zhu, JS. Lee
Three-dimensional charge density wave order in $YBa_2Cu_3O_{6.67}$ at high magnetic fields, SCIENCE **350** (2015) 949-952.
[9]K. Kuwahara, S. Yoshii, H. Nojiri, D. Aoki, W. Knafo, F. Duc, X. Fabrèges, G.W. Scheerer, P. Frings, G. L. J. A. Rikken, F. Bourdarot, L. P. Regnault and J. Flouquet
Magnetic Structure of Phase II in $U(Ru_{0.96}Rh_{0.04})_2Si_2$ Determined by Neutron Diffraction under Pulsed High Magnetic Fields, Phys. Rev. Lett. **110**(2013) 216406-1-5.
[10] Takuya Susuki, Nobuyuki Kurita, Takuya Tanaka, Hiroyuki Nojiri, Akira Matsuo, Koichi, Kindo and Hidekazu Tanaka
Magnetization Process and Collective Excitations in the $S = 1/2$ Triangular-Lattice Heisenberg Antiferromagnet $Ba_3CoSb_2O_9$, Phys. Rev. Lett. **110**(2013) 267201-1-5.
[11] K.-Y. Choi, Z. X. Wang, H. Nojiri, J. van Tol, P. Kumar, P. Lemmens, B. S. Bassil, U. Kortz and N. S. Dalal
Coherent Manipulation of Electron Spins in the $\{Cu_3\}$ Spin Triangle Complex Impregnated in Nanoporous Silicon, Phys. Rev. Lett. **108**(2012) 067206-1-5.
[12] J. P. C. Ruff, J.-H. Chu, H.-H. Kuo, R. K. Das, H. Nojiri, I. R. Fisher, and Z. Islam
Susceptibility Anisotropy in an Iron Arsenide Superconductor Revealed by X-Ray Diffraction in Pulsed Magnetic Fields, Phys. Rev. Lett. **109**(2012) 027004-1-5.
[13] H. Nojiri, S. Yoshii, M. Yasui, K. Okada, M. Matsuda, J. -S. Jung, T. Kimura, L. Santodonato, G. E. Granroth, K. A. Ross, J. P. Carlo and B. D. Gaulin
Neutron Laue Diffraction Study on the Magnetic Phase Diagram of Multiferroic $MnWO_4$ under Pulsed High Magnetic Fields
Phys. Rev. Lett. **106**(2011) 237202-1-4.
[14] Nedko B. Ivanov, Ju¨rgen Schnack, Roman Schnalle, Johannes Richter, Paul Kögerler, Graham N. Newton, Leroy Cronin, Yugo Oshima and Hiroyuki Nojiri
Heat Capacity Reveals the Physics of a Frustrated Spin Tube
Phys. Rev. Lett. **105**(2010) 037206-1-4.
[15] S. Yoshii, K. Ohoyama, K. Kurosawa, H. Nojiri, M. Matsuda, P. Frings, F. Duc, B. Vignolle, G. L. J. A. Rikken, L. -P. Regnault, S. Michimura and F. Iga
Neutron Diffraction Study on the Multiple Magnetization Plateaus in TbB_4 under Pulsed High Magnetic Field
Phys. Rev. Lett. **103**(2009)077203-1-4.