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Education

- B.En. Department of Applied Physics, The University of Tokyo, 2016.
- M.Sc. Department of Advanced Materials Science, The University of Tokyo, 2018.
- Visiting Researcher, Dr. Menaert group, Institut NEEL, Grenoble, France, 2018.

Research Interests

Multiferroics, Magnetoelectric effect, Topological magnetic texture

Research Experience

- Single Crystal Growth
 - Floating zone melting method
 - Bridgmann melting method
 - Flux method
 - Chemical vapor transport method
- Macroscopic measurement
 - Magnetization
 - Electric polarization
 - AC permittivity
- Quantum beam measurement
 - X-ray crystal structure analysis
 - Small-Angle resonant X-ray magnetic scattering
 - Neutron magnetic scattering

Fellowships

Program for Leading Graduate Schools (MERIT), The University of Tokyo (2016/10 ~)

Awards

- Oral session Awards, Condensed-Matter Physics Summer School
Best Speaker Presentation Award (2016/08)

Memberships

- The Physical Society of Japan (JPS)
- "Toward a NewClass Magnetism by Chemically-controlled Chirality" -JPSJ Core-to-Core program, A. Advanced Research Networks-

Publications & Presentations

Papers

1. Lattice and magnetic dynamics in the polar, chiral, and incommensurate antiferromagnet $\text{Ni}_2\text{InSbO}_6$
M. A. Prosnikov, A. N. Smirnov, V. Yu. Davydov, **Y. Araki**, T. Arima, and R. V. Pisarev
Phys. Rev. B **100**, 144417 (2019).
2. Magnetic phase diagram enriched by chemical substitution in a noncentrosymmetric helimagnet
T. Sato, **Y. Araki**, A. Miyake, A. Nakao, N. Abe, M. Tokunaga, S. Kimura, Y. Tokunaga, and T. Arima
Phys. Rev. B **101**, 054414 (2020).
3. Metamagnetic transitions and magnetoelectric responses in the chiral polar helimagnet $\text{Ni}_2\text{InSbO}_6$
Y. Araki, T. Sato, Y. Fujima, N. Abe, M. Tokunaga, S. Kimura, D. Morikawa, V. Ukleev, Y. Yamasaki, C. Tabata, H. Nakao, Y. Murakami, H. Sagayama, K. Ohishi, Y. Tokunaga, and T. Arima
Phys. Rev. B **102**, 054409 (2020).

Presentations (International conference)

1. Magnetic and magnetoelectric properties in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (poster)
CEMS-QPEC Symposium on "EmergentQuantum Materials", P28, Tokyo, Japan (2017/01)
Y. Araki, N. Abe, M. Tokunaga, S. Kimura, Y. Tokunaga, and T. Arima
2. Magnetic and magnetoelectric properties in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (poster)
International Workshop "Dzyaloshinskii-Moriya Interaction and Exotic Spin Structure", P5,
Peterhof, Russia (2017/05)
Y. Araki, N. Abe, M. Tokunaga, S. Kimura, Y. Tokunaga, and T. Arima
3. Proper-screw type helimagnetism in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ probed by soft X-ray and neutron magnetic scattering (poster)
The 9th APCTP Workshop on Multiferroics, Chiba, Japan (2017/11)
Y. Araki, T. Sato, Y. Fujima, N. Abe, M. Tokunaga, S. Kimura, D. Morikawa,
V. Ukleev, Y. Yamasaki, C. Tabata, H. Nakao, Y. Murakami, H. Sagayama, K. Oishi,
Y. Tokunaga, T. Arima

4. Proper-screw type helimagnetism in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ probed by soft X-ray and neutron magnetic scattering (poster)
JSPS Core-to-Core Program 2017 [S-5] "A Consortium to Exploit Spin Chirality in Advanced Materials", Hiroshima, Japan (2017/12)
Y. Araki, T. Sato, Y. Fujima, N. Abe, M. Tokunaga, S. Kimura, D. Morikawa,
V. Ukleev, Y. Yamasaki, C. Tabata, H. Nakao, Y. Murakami, H. Sagayama, K. Oishi,
Y. Tokunaga, T. Arima
5. High-field optical study of metamagnetic transitions in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (oral)
International Workshop "Dzyaloshinskii-Moriya Interaction and Exotic Spin Structure",
Petrozavodsk, Russia (2019/07)
Y. Araki, Z. Yang, T. Sato, N. Abe, Y. Kohama, M. Tokunaga, S. Kimura, Y. Tokunaga, T.
Arima

Presentations (Domestic conference)

1. Magnetic and magnetoelectric properties in chiral polar magnet $\text{Ni}_{2-x}\text{Mn}_x\text{InSbO}_6$ (oral)
Japan Physical Society Autumn Meeting, 14aJB-9, Ishikawa, Japan (2016/09)
Y. Araki, N. Abe, H. Sagayama, M. Tokunaga, Y. Tokunaga, T. Arima
2. Magnetic phase diagram in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (oral)
Japan Physical Society Spring Meeting, 18pH11-7, Osaka, Japan (2017/03)
Y. Araki, N. Abe, T. Sato, M. Tokunaga, S. Kimura, Y. Tokunaga, T. Arima
3. Magnetic structure in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (oral)
Japan Physical Society Autumn Meeting, 22pF21-7, Iwate, Japan (2017/09)
Y. Araki, T. Sato, Y. Fujima, N. Abe, M. Tokunaga, S. Kimura, D. Morikawa,
V. Ukleev, Y. Yamasaki, C. Tabata, H. Nakao, Y. Murakami, H. Sagayama, K. Oishi,
Y. Tokunaga, T. Arima
4. Proper-screw type helimagnetism in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ probed by soft X-ray and neutron magnetic scattering (poster)
2017年度量子ビームサイエンスフェスタ, Ibaraki, Japan (2018/03)
Y. Araki, T. Sato, Y. Fujima, N. Abe, M. Tokunaga, S. Kimura, D. Morikawa,
V. Ukleev, Y. Yamasaki, C. Tabata, H. Nakao, Y. Murakami, H. Sagayama, K. Oishi,
Y. Tokunaga, T. Arima
5. High-field optical study of metamagnetic transitions in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (oral)
Japan Physical Society Spring Meeting, 14pF304-15, Fukuoka, Japan (2019/03)
Y. Araki, Z. Yang, T. Sato, N. Abe, Y. Kohama, M. Tokunaga, S. Kimura, Y. Tokunaga, T.
Arima
6. Electric field control of helimagnetic order in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (oral)
Japan Physical Society Autumn Meeting, 12pB14-13, Gifu, Japan (2019/09)
Y. Araki, T. Nakajima, K. Ohishi, N. Abe, Y. Tokunaga, T. Arima
7. Electric field control of helimagnetic order in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$ (poster)
2019年度量子ビームサイエンスフェスタ, Ibaraki, Japan (2020/03)
Y. Araki, T. Nakajima, K. Ohishi, N. Abe, Y. Tokunaga, T. Arima

Thesis

1. Master thesis, Department of Advanced Materials Science, The University of Tokyo
Magnetic and magnetoelectric properties in a chiral polar magnet $\text{Ni}_2\text{InSbO}_6$
2. Graduation thesis, Department of Applied Physics, The University of Tokyo
Magnetoelectric effect in an antiferromagnet $\text{Cu}_2\text{V}_2\text{O}_7$