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Personal Information

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Current Position

Second-year Ph.D student in Arima-Tokunaga Group, Department of Advanced Materials Science, University of Tokyo

Research Interest

Coupling between magnetism and electric property
Especially, *magnetoelectrics* and *magneto-optics*

Research Experience

Single crystal growth
vapor transport method, floating zone method
Characterization
x-ray diffraction
Physical property measurements
magnetization, electric polarization, dielectric constant, absorption spectroscopy
Experiments NOT at in-house facilities
Neutron diffraction at J-PARC (JAPAN)
Physical property measurements in high magnetic fields at ISSP (JAPAN)
Numerical computation
Monte-Carlo simulation

Education

B.En. Department of Applied Physics, The University of Tokyo, 2016.
M.Sc. Department of Advanced Materials Science, The University of Tokyo, 2018

Publication and Presentation

Publications and preprints

4. **T. Sato**, N. Abe, Y. Araki, S. Kimura, Y. Tokunaga, and T. Arima
"Thermally driven commensurate-incommensurate transition tracked by magnetochromism in chiral polar $Ni_2In_{0.9}Cr_{0.1}SbO_6$"
[Physical Review B **102**, 094418 (2020)]

3. 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, and T. Arima
"Metamagnetic transitions and magnetoelectric responses in a chiral polar helimagnet Ni_2InSbO_6"
[Physical Review B **102**, 054409 (2020) / arXiv: 1912.02363]

2. **T. Sato**, N. Abe, S. Kimura, Y. Tokunaga, and T. Arima
"Magnetochiral Dichroism in a Collinear Antiferromagnet with Zero Magnetization"
[Physical Review Letters **124**, 217402 (2020) (*Selected to be an Editor's Suggestion*)]

1. **T. Sato**, Y. Araki, A. Miyake, A. Nakao, N. Abe, M. Tokunaga, S. Kimura, Y. Tokunaga, and T. Arima
"Magnetic phase diagram enriched by chemical substitution in a noncentrosymmetric helimagnet"
[Physical Review B **101**, 054414 (2020) (*Selected to be an Editor's Suggestion*)]

Presentations (International conference)

5. **T. Sato**, N. Abe, S. Kimura, Y. Tokunaga and T. Arima, "Magneto-optic study of thermally driven ferrimagnet-to-helimagnet transition in a chiral-polar magnet", International Conference on Strongly Correlated Electron Systems 2019, Okayama (poster).

4. **T. Sato**, N. Abe, S. Kimura, Y. Tokunaga and T. Arima, "Magneto-optic study of thermally driven ferrimagnet-helimagnet transition in a chiral-polar magnet", International Conference on Frontiers of Correlated Electron Sciences, Tokyo (poster).

3. **T. Sato**, Y. Araki, A. Miyake, M. Tokunaga, T. Honda, S. Kimura, H. Sagayama, N. Abe, Y. Tokunaga and T. Arima, "Magnetoelectric effect on a newly synthesized helical magnet $Ni_2In_{1-x}A_xSbO_6$ (A_x = $Cr_{0.1}$, $Fe_{0.05}$)", 21st International Conference on Magnetism, San Francisco (oral).

2. **T. Sato**, Y. Araki, A. Miyake, M. Tokunaga, A. Nakao, K. Munakata, T. Honda, H. Sagayama, S. Kimura, N. Abe, Y. Tokunaga and T. Arima, "Magnetoelectric effect in a newly synthesized helical magnet $Ni_2In_{1-x}A_xSbO_6$ (A_x = $Cr_{0.1}$, $Fe_{0.05}$)", J-Physics 2018, Awaji (poster).

1. **T. Sato**, Y. Araki, T. Honda, H. Sagayama, N. Abe, Y. Tokunaga and T. Arima, "Effect of magnetic ion (Fe, Cr) doping on a helical magnet Ni_2InSbO_6", The 9th APCTP Workshop on Multiferroics, Kashiwa (poster).

Presentations (Domestic conference)

5. **T. Sato**, N. Abe, S. Kimura, Y. Tokunaga and T. Arima,"Switching of absorbance of $MnTiO_3$ by both electric field and magnetic field", 2019 Physical Society of Japan Autumn Meeting, Nagoya (oral).

4. **T. Sato**, N. Abe, Y. Tokunaga and T. Arima,"Magnetic field induced polarization reversal in $MnTiO_3$", 2019 Physical Society of Japan Meeting, Fukuoka (oral).

3. **T. Sato**, N. Abe, S. Kimura, Y. Tokunaga and T. Arima,"Magneto optical effect in chiral polar helical magnet $Ni_2In_{0.9}Cr_{0.1}SbO_6$", 2018 Physical Society of Japan Autumn Meeting, Kyoto (oral).

2. **T. Sato**, Y. Araki, N. Abe, M. Tokunaga, A. Miyake, S. Kimura, Y. Tokunaga and T. Arima,"Magnetic and electric property of magnetic ion doped helical magnet Ni_2InSbO_6 under high magnetic field", 2018 Physical Society of Japan Meeting, Chiba (oral).

1. **T. Sato**, Y. Araki, T. Honda, H. Sagayama, N. Abe, Y. Tokunaga and T. Arima,"Magnetic phase diagram of magnetic ion doped helical magnet Ni_2InSbO_6", 2017 Physical Society of Japan Autumn Meeting, Iwate (oral).