



## Fen Xue

Postdoctoral Scholar, Electrical Engineering

### Bio

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#### PROFESSIONAL EDUCATION

- Bachelor (Undeclared), Tsinghua University (2013)
- Doctor of Philosophy, Tsinghua University (2018)

### Publications

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#### PUBLICATIONS

- **Observation of anti-damping spin-orbit torques generated by in-plane and out-of-plane spin polarizations in MnPd3.** *Nature materials*  
Dc, M., Shao, D. F., Hou, V. D., Vailionis, A., Quarterman, P., Habiboglu, A., Venuti, M. B., Xue, F., Huang, Y. L., Lee, C. M., Miura, M., Kirby, B., Bi, et al  
2023
- **Energy Efficient Computing With High-Density, Field-Free STT-Assisted SOT-MRAM (SAS-MRAM)** *IEEE TRANSACTIONS ON MAGNETICS*  
Hwang, W., Xue, F., Zhang, F., Song, M., Lee, C., Turgut, E., Chen, T. C., Bao, X., Tsai, W., Fan, D., Wang, S. X.  
2023; 59 (3)
- **Performance Benchmarking of Spin-Orbit Torque Magnetic RAM (SOT-MRAM) for Deep Neural Network (DNN) Accelerators**  
Luo, Y., Kumar, P., Liao, Y., Hwang, W., Xue, F., Tsai, W., Wang, S. X., Naeemi, A., Yu, S., IEEE  
IEEE.2022: 73-76
- **Spin-orbit torques of an in-plane magnetized system modulated by the spin transport in the ferromagnetic Co layer** *APL MATERIALS*  
Xue, F., Lin, S., Li, P., Hwang, W., Huang, Y., Tsai, W., Wang, S. X.  
2021; 9 (10)
- **Large and robust charge-to-spin conversion in sputtered conductive WTex with disorder** *MATTER*  
Li, X., Li, P., Hou, V., Mahendra, D. C., Nien, C., Xue, F., Yi, D., Bi, C., Lee, C., Lin, S., Tsai, W., Suzuki, Y., Wang, et al  
2021; 4 (5): 1639-1653
- **Micro Electric-field Sensors: Principles and Applications** *IEEE INDUSTRIAL ELECTRONICS MAGAZINE*  
Han, Z., Xue, F., Hu, J., He, J.  
2021
- **Tunable spin-orbit torque efficiency in in-plane and perpendicular magnetized [Pt/Co](n) multilayer** *APPLIED PHYSICS LETTERS*  
Xue, F., Lin, S., Mahendra, D. C., Bi, C., Li, X., Tsai, W., Wang, S. X.  
2021; 118 (4)
- **Ultrahigh Spin-Orbit Torque Efficiency at Spin Reorientation Transition State in Pt/Co Multilayer**  
Xue, F., Lin, S., Dc, M., Bi, C., Li, X., Tsai, W., Wang, S. X., IEEE  
IEEE.2021
- **Challenges toward Low-Power SOT-MRAM**  
Lin, S., Huang, Y., Song, M., Lee, C., Xue, F., Chen, G., Yang, S., Chang, Y., Wang, I., Hsin, Y., Su, Y., Wei, J., Pai, et al

IEEE.2021

- **Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor** *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*  
Xue, F., Guo, Y., Sato, N., Ouyang, Y., Han, Z., Wang, S. X., Hu, J., He, J.  
2020; 67 (4): 3257–66
- **Piezoelectric-Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range** *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*  
Xue, F., Hu, J., Guo, Y., Han, G., Ouyang, Y., Wang, S. X., He, J.  
2020; 67 (1): 551–59
- **Large voltage control of magnetic anisotropy in CoFeB/MgO/OX structures at room temperature** *APL MATERIALS*  
Xue, F., Sato, N., Bi, C., Hu, J., He, J., Wang, S. X.  
2019; 7 (10)
- **Research on the Protrusions Near Silicon-Glass Interface during Cavity Fabrication.** *Micromachines*  
Zhang, M., Yang, J., He, Y., Yang, F., Zhao, Y., Xue, F., Han, G., Si, C., Ning, J.  
2019; 10 (6)
- **Two-terminal spin-orbit torque magnetoresistive random access memory** *NATURE ELECTRONICS*  
Sato, N., Xue, F., White, R. M., Bi, C., Wang, S. X.  
2018; 1 (9): 508–11
- **Linear Control of Magneto-Electric Effect With Small Electric Fields** *IEEE MAGNETICS LETTERS*  
Xue, F., Hu, J., Wang, S. X., He, J.  
2016; 7
- **Electric Field Sensor Based on Piezoelectric Bending Effect for Wide Range Measurement** *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*  
Xue, F., Hu, J., Wang, S. X., He, J.  
2015; 62 (9): 5730-5737