

Puyang Huang

Ph.D. Student in Electrical Engineering, admitted Summer 2025

Publications

PUBLICATIONS

- **12-in Bottom-Pinned VCMA-MRAM Devices With 0.6 ns Switching Speed, 30 fJ/bit Write Energy, and 10^{14} Endurance** *IEEE ELECTRON DEVICE LETTERS*
Huang, P., Shu, Q., Zhu, Z., Yao, S., Lee, A., Chen, C., Wu, D., Kou, X., Wang, K. L.
2026; 47 (6): 1125-1128
- **Antiferromagnetic Materials Exhibiting Unconventional Properties** *ADVANCED FUNCTIONAL MATERIALS*
Dai, B., Cheng, Y., Qu, T., Huang, P., Li, Y., Wang, T., Huang, H., Shu, Q., Wang, K. L.
2025
- **Spin-Orbit Torque-Assisted Voltage-Controlled Magnetization Switching for Reliable Nonvolatile Memory** *ACS NANO*
Shu, Q., Cheng, Y., Lee, A., Schopen, T., He, H., Guan, J., Wang, C., Yang, S., Hsin, Y., Shih, C., Lee, H., Wei, J., Lee, et al
2025: 36653-36662
- **Tunable chiral magneto-transport through band structure engineering in magnetic topological insulators $Mn(Bi_{1-x}Sb_x)_2Te_4$.** *Science advances*
Chen, P., Huang, P., Li, Z., Liu, J., Yao, Q., Sun, Q., Li, A., Liu, X., Zhang, Y., Cai, X., Liu, J., Liao, L., Yang, et al
2025; 11 (20): eadt6084
- **Controllable magnetism and an anomalous Hall effect in $(Bi_{1-x}Sb_x)_2Te_3$ -intercalated $MnBi_2Te_4$ multilayers.** *Nanoscale*
Chen, P., Liu, J., Zhang, Y., Huang, P., Bollard, J., Yang, Y., Arnold, E. L., Liu, X., Yao, Q., Choueikani, F., van der Laan, G., Hesjedal, T., Kou, et al
2025; 17 (11): 6562-6569
- **Tunable interfacial Rashba spin-orbit coupling in asymmetric $Al_xIn_{1-x}Sb/InSb/CdTe$ quantum well heterostructures** *APPLIED PHYSICS LETTERS*
Zhi, Z., Wu, Y., Ruan, H., Liu, J., Huang, P., Yao, S., Liu, X., Tang, C., Yao, Q., Sun, L., Zhang, Y., Xiao, Y., Che, et al
2025; 126 (1)
- **Integrated Artificial Neural Network with Trainable Activation Function Enabled by Topological Insulator-Based Spin-Orbit Torque Devices.** *ACS nano*
Huang, P., Liu, X., Xin, Y., Gu, Y., Lee, A., Zhang, Y., Xu, Z., Chen, P., Zhang, Y., Deng, W., Yu, G., Wu, D., Liu, et al
2024; 18 (43): 29469-29478
- **Observation of Moment-Dependent and Field-Driven Unidirectional Magnetoresistance in $CoFeB/InSb/CdTe$ Heterostructures.** *ACS applied materials & interfaces*
Liu, J., Liao, L., Rong, B., Wu, Y., Ruan, H., Zhang, Y., Zhi, Z., Liu, X., Huang, P., Yao, S., Cai, X., Tang, C., Yao, et al
2024; 16 (34): 45687-45694
- **Interfacial Resonance States-Induced Negative Tunneling Magneto-Resistance in Orthogonally Magnetized $CoFeB/MgO/CoFeB$** *IEEE TRANSACTIONS ON MAGNETICS*
Huang, P., Chen, A., Dong, J., Wu, D., Liu, X., Zhi, Z., Liu, J., Lee, A., Fang, B., Zhang, J., Zhang, X., Kou, X.
2024; 60 (3)
- **Enhancement of Voltage-Controlled Magnetic Anisotropy in Orthogonally-Magnetized $CoFeB/MgO/CoFeB$**
Huang, P., Chen, A., Cai, X., Wu, D., Zhang, X., Kou, X., IEEE
IEEE.2024

- **Wafer-Scale Epitaxial Growth of the Thickness-Controllable Van Der Waals Ferromagnet CrTe₂ for Reliable Magnetic Memory Applications** *ADVANCED FUNCTIONAL MATERIALS*
Liu, X., Huang, P., Xia, Y., Gao, L., Liao, L., Cui, B., Backes, D., van der Laan, G., Hesjedal, T., Ji, Y., Chen, P., Zhang, Y., Wu, et al
2023; 33 (50)
- **Room-Temperature Gate-Tunable Nonreciprocal Charge Transport in Lattice-Matched InSb/CdTe Heterostructures.** *Advanced materials (Deerfield Beach, Fla.)*
Li, L., Wu, Y., Liu, X., Liu, J., Ruan, H., Zhi, Z., Zhang, Y., Huang, P., Ji, Y., Tang, C., Yang, Y., Che, R., Kou, et al
2023; 35 (3): e2207322
- **Tailoring the magnetic exchange interaction in MnBi₂Te₄ superlattices via the intercalation of ferromagnetic layers** *NATURE ELECTRONICS*
Chen, P., Yao, Q., Xu, J., Sun, Q., Grutter, A. J., Quarterman, P., Balakrishnan, P. P., Kinane, C. J., Caruana, A. J., Langridge, S., Li, A., Achinuq, B., Heppell, et al
2023; 6 (1): 18-27