Xueyu Zhang

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Education

- Ph.D. in Engineering, Institute of Science Tokyo (formerly Tokyo Tech), 2022–2025
- M.Eng. in Materials Science, Tokyo Institute of Technology (Tokyo Tech), 2020–2022
- B.Eng. in Materials Science & B.A. in Japanese, Dalian University of Technology (DUT), 2015–2020

Research Experience

- **M.Eng. Thesis: Kinks in LPSO-Mg Alloys** (2020–2022) Used EBSD to observe kink morphologies— contributors to the strengthening of layered materials—and revealed that they occur in curved and straight forms.
- **Academy for Convergence of Materials and Informatics (TAC-MI) RA** (2023) Generated DFT-based training data (VASP) for neural networks predicting kink boundary energies at different misorientations.
- **TAC-MI Self-Designed Thesis: Geometric Modeling** (2022–2024) Built a differential geometric framework that incorporates the curvature induced by disclinations (DCs, special lattice defects at the kink junctions) to evaluate the interaction distance between DCs.
- **Ph.D. Thesis: Formation Mechanism of Bent Ridge-Kink** (2023–2025) Developed computational models incorporating interaction energy between kinks and external loads, showing that bent kink formation arises from disclination relaxation and is favored under high external stress.

Selected Publications & Presentations

- X. Zhang, R. Matsumura, Y. Shinohara, K. Hagihara, T. Inamura, Geometric modeling of kink-bands involving basal and prismatic slips in hexagonal crystal structures. Acta Mater., 2025.
- X. Zhang, R. Matsumura, Y. Shinohara, T. Inamura, Origin of bent ridge-kink based on disclination relaxation. Int. J. Solids Struct., 2024.
- X. Zhang, R. Matsumura, Y. Shinohra, T. Inamura, Geometrical modeling of bent kinks: energy reduction and shape transition mechanisms, Thermec'2025, 2nd July 2025
- X. Zhang, R. Matsumura, Y. Shinohara, T. Inamura, Introduction of ortho-kink sequence due to disclinations relaxation, The 5th International Symposium on LPSO and MFS, 14 December 2022.
- Multiple presentations at JIM Annual Meetings (2021–2024) and TAC-MI International Forum.

Honors & Awards

- TOEFL iBT 103, JLPT N1 148/180
- Excellence Award, Practice School in Materials Informatics, TAC-MI, 2023
- Best Poster Award, Intl. Symposium on LPSO/Mille-feuille Structures, 2022
- Secured JST-SPRING funding, 2022 & TAC-MI Program, 2022
- Best Poster Award, JIM Annual Spring Meeting, 2022
- "Tan Yi" Scholarship & First-Class Scholarship, DUT, 2019