LI, Mengmeng

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EDUCATION

The Hong Kong University of Science and Technology Oct. 2019 — Aug. 2023
Research in phase transitions on crystal surfaces in soft matter systems
Joint Ph.D.: Mechanical Engineering and Physics (Supervisor: Prof. Yilong HAN, Prof. Qingping SUN) Hong Kong SAR

The Hong Kong University of Science and Technology Oct. 2018 — Sep. 2019
Research in high electromagnetic shielding and high thermal conductivity composites
M.S.: Aeronautical Engineering (Supervisor: Prof. Jang-Kyo KIM, Prof. Xi SHEN) Hong Kong SAR

Northeastern University Oct. 2014 — Sep.2018
B.E.: Material Molding and Control Engineering China

EMPLOYMENT

The Hong Kong University of Science and Technology Sep. 2023 — present
Postdoctoral fellow (Supervisor: Prof. Yilong HAN) Hong Kong SAR

PUBLICATIONS

Journal paper

Published (# denotes the first author, * denotes the corresponding author)

1. **Li, M.#**, Xu, Z., Zhang, Q., Li, W., Zheng, Z. & Han, Y.*. (2024) Polymorphic crystalline layer at the crystallization front. Physical Review Letters 133, 248202.
2. Wang, X.#*, Li, B.#*, **Li, M.#** & Han, Y.*. (2023). Polymorphic crystalline wetting layers on crystal surfaces. Nature Physics 19, 700–705.
3. Xu, Z.#, **Li, M.**, Zhang, H. & Han, Y.*. (2023). Generalization of the Hall-Petch and inverse Hall-Petch behaviors by tuning amorphous regions in 2D solids. National Science Open, 2(3), 20220058. (Cover)

In-Progress

1. Xu, Z.#, **Li, M.** & Han, Y.*. Mechanical properties of crystalline-amorphous composites: generalisation of Hall-Petch and inverse Hall-Petch behaviours.
2. Li W.*, **Li, M.**, Zhang, Q. & Han Y.*. Wetting Phenomena Pre-Phase-Transitions: Premelting, Prefreezing, and Pre-Solid-Solid Transition.

Poster

1. **Li, M.**, Wang, X., Li, B. & Han, Y. (2023). Polymorphic crystalline wetting layers on crystal surfaces. The 7th International Soft Matter Conference. (Osaka, Japan).

SKILLS

- **Education background:** Solid mechanics, thermodynamics, fluid dynamics, aerodynamics, and topology analysis
- **Software:** Molecular dynamic simulation (LAMMPS), CAD (Solidworks), FEM (ANSYS)
- **Programming:** Python, IDL
- **Experimental Skills:** Abundant experiences with colloid experiments, granular experiments on vibration stage, metal and alloy experiments, and MD simulation
- **Equipment Operation:** Material fabrication equipment, such as optical tweezer, freeze casting machine, 3D printing machine, rolling machine, electrospinning machine, CVD machine, etc., and material characterization equipment: optical microscope, SEM, TEM