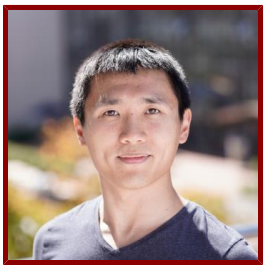
Stanford



Enze Chen

Lecturer

Materials Science and Engineering

Bio

BIO

Enze (he/him, '18) is a Lecturer in Materials Science and Engineering (MSE) who teaches a variety of undergraduate MSE courses spanning structure, characterization, energy, computing, and communication. Midway through undergrad, he was introduced to the world of computational materials science and hasn't looked back, completing a PhD in MSE that applied computational tools to study planar defects and materials informatics education. Enze is excited to be back on The Farm and to help advance student success through instruction, advising, and research.

ACADEMIC APPOINTMENTS

- Lecturer, Materials Science and Engineering

PROFESSIONAL EDUCATION

- Ph.D., University of California, Berkeley , Materials Science and Engineering (2023)
- M.S., Stanford University , Computational and Mathematical Engineering (2018)
- B.S., Stanford University , Materials Science and Engineering (2018)

LINKS

- Personal website: https://enze-chen.github.io/
- Google Scholar: https://scholar.google.com/citations?hl=en&user=MMkofM4AAAAJ&view_op=list_works&sortby=pubdate

Teaching

COURSES

2025-26

- Curricular Practical Training: MATSCI 99 (Aut, Win, Spr, Sum)
- Introduction to Materials Science, Biomaterials Emphasis: ENGR 50M, MATSCI 50M (Aut)
- Materials Scientists in Training: MATSCI 131 (Spr)
- Materials Structure and Characterization: MATSCI 143 (Aut)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 156 (Spr)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 256 (Spr)
- Undergraduate Internship Experience: MATSCI 169 (Aut, Spr)
- Visual Communication in Materials Science: MATSCI 122, MATSCI 222 (Win)

2024-25

- Materials Scientists in Training: MATSCI 131 (Spr)
- Materials Structure and Characterization: MATSCI 143 (Aut)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 156 (Spr)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 256 (Spr)
- Visual Communication in Materials Science: MATSCI 122 (Win)

2023-24

- Materials Structure and Characterization: MATSCI 143 (Win)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 156 (Spr)
- Solar Cells, Fuel Cells, and Batteries: Materials for the Energy Solution: MATSCI 256 (Spr)

STANFORD ADVISEES

Master's Program Advisor

Devan Agrawal, Arielle Breuninger, Perry Ann Brody, Jiale Cao, Kelly Chao, Sandy Chen, Wenyang Dai, Keshav Dhir, Hayden Hamilton, Abigail Herrera Ruiz, Weston Hicks, Tianshu Li, Chia-Yu Lin, Cindy Liu, Maxwell Lo, Tejus Rohatgi, Asmi Sathe, Josh Thaosatien, Edmund Totah, Maya Tovar, Aditya Udgaonkar, Harry Voorhis, Isabella Walter, Benjamin Wang, Xiaoqin Wang, Kenneth Wu, Jenn Xiang, Jenny Xiong, Jinxuan Yu, Runyang Yu, Ruby Zhou

Publications

PUBLICATIONS

- **Quasiaperiodic grain boundary phases of E5 tilt grain boundaries in refractory metals** *PHYSICAL REVIEW B*
  Chen, E., Frolov, T.
  2025; 112 (6)
- **Hierarchy of defects in near-Σ15 tilt grain boundaries in copper studied by length-scale bridging electron microscopy** *ACTA MATERIALIA*
  Ding, H., Akbari, A., Chen, E., Roesner, H., Frolov, T., Divinski, S., Wilde, G., Liebscher, C. H.
  2025; 287
- **Topological grain boundary segregation transitions.** *Science (New York, N.Y.)*
  Devulapalli, V., Chen, E., Brink, T., Frolov, T., Liebscher, C. H.
  2024; 386 (6720): 420-424
- **Grand canonically optimized grain boundary phases in hexagonal close-packed titanium.** *Nature communications*
  Chen, E., Heo, T. W., Wood, B. C., Asta, M., Frolov, T.
  2024; 15 (1): 7049
- **ARTIFICIAL INTELLIGENCE IN MATERIALS EDUCATION: A ROUNDTABLE DISCUSSION** *JOM*
  Tyler, K., Chen, E., Meredig, B., Sparks, T.
  2023; 75 (7): 2083-2085
- **Educating current industrial workforce to embrace data-driven materials development** *MRS BULLETIN*
  Chen, E., Igbineweka, O., Kubie, L., Peerless, J. S.
  2022; 47 (10): 981-985
- **Using Jupyter Tools to Design an Interactive Textbook to Guide Undergraduate Research in Materials Informatics** *JOURNAL OF CHEMICAL EDUCATION*
  Chen, E., Asta, M.
  2022
- **Modeling antiphase boundary energies of Ni₃Al-based alloys using automated density functional theory and machine learning** *NPJ COMPUTATIONAL MATERIALS*
  Chen, E., Tamm, A., Wang, T., Epler, M. E., Asta, M., Frolov, T.
  2022; 8 (1)

- **Stitch It Up: Using Progressive Data Storage to Scale Science**
  Lofstead, J., Mitchell, J., Chen, E., IEEE
  IEEE.2020: 52-61
- **Transferable Kinetic Monte Carlo Models with Thousands of Reactions Learned from Molecular Dynamics Simulations.** *The journal of physical chemistry. A*
  Chen, E., Yang, Q., Dufour-Decieux, V., Sing-Long, C. A., Freitas, R., Reed, E. J.
  2019