Stanford

Harold Hwang

Director, Stanford Institute for Materials and Energy Sciences (SIMES), Shadi and Omid Farokhzad Professor in the School of Humanities and Sciences, Professor of Photon Science and Senior Fellow at the Precourt Institute for Energy

Applied Physics

Bio

ACADEMIC APPOINTMENTS

- Professor, Applied Physics
- Professor, Photon Science Directorate
- Senior Fellow, Precourt Institute for Energy
- Director, Stanford Institute for Materials and Energy Sciences

Teaching

COURSES

2025-26

- Solid State Physics II: APPPHYS 273 (Aut)

2024-25

- Solid State Physics II: APPPHYS 273 (Aut)

2023-24

- Solid State Physics II: APPPHYS 273 (Aut)

2022-23

- Solid State Physics II: APPPHYS 273 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Emma Cuddy, Aviv Simchony, Josephine Yu

Postdoctoral Faculty Sponsor

Zhongxun Guo, Yu Han, Jiarui Li, Florian Theuss, Jiayue Wang, Chenhang Xu

Doctoral Dissertation Advisor (AC)

Ella Blake, Kevin Crust, Martin Gonzalez, Levi Hoogendoorn, Aarushi Khandelwal, Yonghun Lee, Yidi Liu, Yaoju Tarn, Tiffany Wang, Xin Wei, Blake Wendland

Doctoral (Program)

Henry Bell, Omer Hazon, Wanhee Lee, Patrick Liu, Yannick Pleimling, Liam Storan, Emily Thierstein, Ocean Zhou

Postdoctoral Research Mentor

Paulina Majchrzak

Publications

PUBLICATIONS

- **Structural modifications in strain-engineered bilayer nickelate thin films.** *Nature*
  Bhatt, L., Abarca Morales, E., Jiang, A. Y., Ko, E. K., Zhao, Y. F., Schnitzer, N., Pan, G. A., Ferenc Segedin, D., Liu, Y., Yu, Y., Brooks, C. M., Botana, A. S., Hwang, et al
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  2026
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  2026
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- **Atomic-Scale Moiré and Electronic Structure Analysis of Twisted Epitaxial MoS2-Au-MoS2 Heterostructures.** *Nano letters*
  Cui, Y., Xu, K., Ren, P., Yuan, L., Czaja, P., Barnum, A., Sarkar, P., Altman, A., Bustillo, K., Kundu, S., Ramdas, A., Wang, X., Wan, et al
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- **High spin, low spin, or gapped spins: Magnetism in the bilayer nickelates** *PHYSICAL REVIEW B*
  Oh, H., Wu, Y., May-Mann, J., Yu, Y., Hwang, H. Y., Zhang, Y., Raghu, S.
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- **Freestanding SrNbO₃ membranes as flexible transparent conductors** *APL MATERIALS*
  Ko, E., Wang, B., Lee, J., Wang, J., Crust, K. J., Hwang, H. Y.
  2026; 14 (1)
- **Evidence for nodal superconductivity in infinite-layer nickelates.** *Proceedings of the National Academy of Sciences of the United States of America*
  Harvey, S. P., Wang, B. Y., Fowlie, J., Osada, M., Lee, K., Lee, Y., Li, D., Hwang, H. Y.
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- **Controllable dynamic magnetism in reconfigurable ferroelastic domain-wall networks engineered via nanocavities** *PHYSICAL REVIEW B*
  Lu, G., Rabkin, S., Liu, W., Li, S., Dong, G., Yoon, H., Hwang, H. Y., Kalisky, B., Salje, E. K. H.
  2025; 112 (24)
- **Coexisting Phases in NaNbO3Thin Films Influenced by Epitaxial Strain and Size Effects.** *Advanced science (Weinheim, Baden-Wurttemberg, Germany)*
  Khandelwal, A., Crust, K. J., Ghanbari, R., Yu, Y., Xu, R., Hwang, H. Y.
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- **Author Correction: Superconductivity and normal-state transport in compressively strained La2PrNi2O7 thin films.** *Nature materials*
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- **Effects of stoichiometry and epitaxial strain on the stabilization of infinite-layer nickelates** *APL MATERIALS*
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- **Deviation from Debye-Waller behavior in single crystalline freestanding NiO membranes studied via ultrafast electron diffraction** *PHYSICAL REVIEW APPLIED*
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- **Author Correction: Highly confined epsilon-near-zero and surface phonon polaritons in SrTiO3membranes.** *Nature communications*
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  Yu, Y., Hwang, H. Y., Raghu, S., Chung, S.
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- **Electronic structure of superconducting nickelates probed by resonant photoemission spectroscopy** *MATTER*
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  2022: 1-8
- **Insulator-to-metal crossover near the edge of the superconducting dome in Nd1-xSrxNiO2** *PHYSICAL REVIEW RESEARCH*
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- **Nickelate Superconductivity without Rare-Earth Magnetism: (La,Sr)NiO2.** *Advanced materials (Deerfield Beach, Fla.)*
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  2021

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