Stanford

Cheng-Tai Kuo

Staff Engineer, SLAC National Accelerator Laboratory

Bio

LINKS

- My website: https://sites.google.com/prod/view/ctkuo

Publications

PUBLICATIONS

- **Author Correction: Signatures of ambient pressure superconductivity in thin film La3Ni2O7.** *Nature*
  Ko, E. K., Yu, Y., Liu, Y., Bhatt, L., Li, J., Thampy, V., Kuo, C. T., Wang, B. Y., Lee, Y., Lee, K., Lee, J. S., Goodge, B. H., Muller, et al
  2026
- **Cooperative Charge Ordering Signature of Trimer Molecules in Infinite-Layer CaCoO2** *PHYSICAL REVIEW X*
  Lee, J., Kim, W. J., Khandelwal, A., Ko, K., Lee, H., Kuo, C., Song, S., Song, C., Jang, D., Choi, H., Park, G., Park, S., Kang, et al
  2026; 16 (1)
- **Modulating coordinate site occupancy in high-entropy spinel electrocatalysts.** *Nature communications*
  Baek, J., Hamkins, K. S., Li, Y., Garcia-Esparza, A. T., Liu, T., Kuo, C. T., Lee, J. S., Potter, A. W., Kim, S., Wang, Y., Ding, H., Li, J., Zhuo, et al
  2026
- **Long-range magnetic order with disordered spin orientations in a high-entropy antiferromagnet.** *Nature communications*
  Shen, Y., Zhang, G., Zhang, Q., Gui, X., Zhang, Y., Lee, H., Kuo, C., Lee, J., Sutarto, R., Ye, F., Pan, Z., Qin, X., Wang, et al
  2026
- **Localized and delocalized electron states in TiO2 revealed using resonant inelastic soft X-ray scattering** *CURRENT APPLIED PHYSICS*
  Mravac, L., Chuang, Y., Choi, J., Han, J., Park, T., Park, K., Jang, J., Kuo, C., Cho, D.
  2025; 80: 327-332
- **Introducing new resonant soft x-ray scattering capability in SSRL.** *The Review of scientific instruments*
  Kuo, C., Hashimoto, M., Lee, H., Huynh, T. T., Maciel, A., Zhang, Z., Zhang, D., Edwards, B., Kazemifar, F., Kao, C., Lu, D., Lee, J.
  2025; 96 (6)
- **Synthesis and Physical Properties of Manganese Chromium Nitride Thin Films Grown via Molecular Beam Epitaxy** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Vallejo, K. D., Cresswell, Z., Messecar, A., Makin, R., Durbin, S. M., Munoz, M., Adel, T., Walker, A., Bawane, K. K., Kombaiah, B., Lee, J., Kuo, C., Buturlim, et al
  2025
- **Interfacial charge transfer and its impact on transport properties of LaNiO3/LaFeO3 superlattices.** *Science advances*
  Wang, L., Yang, Z., Koirala, K. P., Bowden, M. E., Freeland, J. W., Sushko, P. V., Kuo, C. T., Chambers, S. A., Wang, C., Jalan, B., Du, Y.
  2024; 10 (51): eadq6687
- **Signatures of ambient pressure superconductivity in thin film La3Ni2O7.** *Nature*
  Ko, E. K., Yu, Y., Liu, Y., Bhatt, L., Li, J., Thampy, V., Kuo, C. T., Wang, B. Y., Lee, Y., Lee, K., Lee, J. S., Goodge, B. H., Muller, et al
  2024
- **MXene Nanosheets Functionalized with Cu Atoms for Urea Adsorption in Aqueous Media** *ACS APPLIED NANO MATERIALS*
  Yen, Z., Salim, T., Boothroyd, C., Haywood, P., Kuo, C., Lee, S., Lee, J., Cho, D., Lam, Y.

2023

- **A broken translational symmetry state in an infinite-layer nickelate** *NATURE PHYSICS*
  Rossi, M., Osada, M., Choi, J., Agrestini, S., Jost, D., Lee, Y., Lu, H., Wang, B., Lee, K., Nag, A., Chuang, Y., Kuo, C., Lee, et al
  2022
- **Synthesis and electronic properties of epitaxial SrNiO3/SrTiO3 superlattices** *PHYSICAL REVIEW MATERIALS*
  Wang, L., Zhao, J., Kuo, C., Matthews, B. E., Oostrom, M. T., Spurgeon, S. R., Yang, Z., Bowden, M. E., Wangoh, L. W., Lee, S., Lee, J., Guo, E., Wang, et al
  2022; 6 (7)
- **Orientation-Controlled Anisotropy in Single Crystals of Quasi-1D BaTiS3** *CHEMISTRY OF MATERIALS*
  Zhao, B., Bin Hoque, M., Jung, G., Mei, H., Singh, S., Ren, G., Milich, M., Zhao, Q., Wang, N., Chen, H., Niu, S., Lee, S., Kuo, et al
  2022
- **Emergent phenomena at oxide interfaces studied with standing-wave photoelectron spectroscopy** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Kuo, C., Conti, G., Rault, J. E., Schneider, C. M., Nemsak, S., Gray, A. X.
  2022; 40 (2)
- **Probing the polar-nonpolar oxide interfaces using resonant x-ray standing wave techniques** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Kuo, C., Lin, S., Chuang, Y.
  2022; 40 (1)
- **Orbital contributions in the element-resolved valence electronic structure of Bi2Se3** *PHYSICAL REVIEW B*
  Kuo, C., Lin, S., Rueff, J., Chen, Z., Aguilera, I., Bihlmayer, G., Plucinski, L., Graff, I. L., Conti, G., Vartanyants, I. A., Schneider, C. M., Fadley, C. S.
  2021; 104 (24)
- **High resolution depth profiling using near-total-reflection hard x-ray photoelectron spectroscopy** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Rault, J. E., Kuo, C., Martins, H. P., Conti, G., Nemsak, S.
  2021; 39 (6)
- **Interface Carriers and Enhanced Electron-Phonon Coupling Effect in Al2O3/TiO2 Heterostructure Revealed by Resonant Inelastic Soft X-Ray Scattering** *ADVANCED FUNCTIONAL MATERIALS*
  Shao, Y., Kuo, C., Feng, X., Chuang, Y., Seok, T., Choi, J., Park, T., Cho, D.
  2021
- **Two-dimensional electron systems in perovskite oxide heterostructures: Role of the polarity-induced substitutional defects** *PHYSICAL REVIEW MATERIALS*
  Lin, S., Kuo, C., Shao, Y., Chuang, Y., Geessinck, J., Huijben, M., Rueff, J., Graff, I. L., Conti, G., Peng, Y., Bostwick, A., Gullikson, E., Gullikson, et al
  2020; 4 (11)
- **Hard x-ray standing-wave photoemission insights into the structure of an epitaxial Fe/MgO multilayer magnetic tunnel junction** *JOURNAL OF APPLIED PHYSICS*
  Conlon, C. S., Conti, G., Nemsak, S., Palsson, G., Moubah, R., Kuo, C., Gehlmann, M., Ciston, J., Rault, J., Rueff, J., Salmassi, F., Stolte, W., Rattanachata, et al
  2019; 126 (7)
- **Depth-resolved resonant inelastic x-ray scattering at a superconductor/half-metallic-ferromagnet interface through standing wave excitation** *PHYSICAL REVIEW B*
  Kuo, C., Lin, S., Ghiringhelli, G., Peng, Y., De Luca, G., Di Castro, D., Betto, D., Gehlmann, M., Wijnands, T., Huijben, M., Meyer-Ilse, J., Gullikson, E., Kortright, et al
  2018; 98 (23)
- **Atomic-layer-resolved composition and electronic structure of the cuprate Bi2Sr2CaCu2O8+delta from soft x-ray standing-wave photoemission** *PHYSICAL REVIEW B*
  Kuo, C., Lin, S., Conti, G., Pi, S., Moreschini, L., Bostwick, A., Meyer-Ilse, J., Gullikson, E., Kortright, J. B., Nemsak, S., Rault, J. E., Le Fevre, P., Bertran, et al
  2018; 98 (15)

- **Interface properties and built-in potential profile of a LaCrO3/SrTiO3 superlattice determined by standing-wave excited photoemission spectroscopy** *PHYSICAL REVIEW B*
  Lin, S., Kuo, C., Comes, R. B., Rault, J. E., Rueff, J., Nemsak, S., Taleb, A., Kortright, J. B., Meyer-Ilse, J., Gullikson, E., Sushko, P., Spurgeon, S. R., Gehlmann, et al
  2018; 98 (16)

- **Element- and momentum-resolved electronic structure of the dilute magnetic semiconductor manganese doped gallium arsenide** *NATURE COMMUNICATIONS*
  Nemsak, S., Gehlmann, M., Kuo, C., Lin, S., Schlueter, C., Mlynczak, E., Lee, T., Plucinski, L., Ebert, H., Di Marco, I., Minar, J., Schneider, C. M., Fadley, et al
  2018; 9: 3306

- **Characterization of free-standing InAs quantum membranes by standing wave hard x-ray photoemission spectroscopy** *APL MATERIALS*
  Conti, G., Nemsak, S., Kuo, C., Gehlmann, M., Conlon, C., Keqi, A., Rattanachata, A., Karslioglu, O., Mueller, J., Sethian, J., Bluhm, H., Rault, J. E., Rueff, et al
  2018; 6 (5)

- **Nitride Semiconductor Nanorod Heterostructures for Full-Color and White-Light Applications** *III-NITRIDE SEMICONDUCTOR OPTOELECTRONICS*
  Gwo, S., Lu, Y. J., Lin, H. W., Kuo, C. T., Wu, C. L., Lu, M. Y., Chen, L. J.
  edited by Mi, Z., Jagadish, C.
  2017; 96: 341–84

- **Superconductor to Mott insulator transition in YBa2Cu3O7/LaCaMnO3 heterostructures** *SCIENTIFIC REPORTS*
  Gray, B. A., Middey, S., Conti, G., Gray, A. X., Kuo, C., Kaiser, A. M., Ueda, S., Kobayashi, K., Meyers, D., Kareev, M., Tung, I. C., Liu, J., Fadley, et al
  2016; 6: 33184

- **X-ray Absorption Spectroscopy Study of the Effect of Rh doping in Sr2IrO4** *SCIENTIFIC REPORTS*
  Sohn, C. H., Cho, D., Kuo, C., Sandilands, L. J., Qi, T. F., Cao, G., Noh, T. W.
  2016; 6: 23856

- **The energy band alignment at the interface between mechanically exfoliated few-layer NiPS3 nanosheets and ZnO** *CURRENT APPLIED PHYSICS*
  Kuo, C., Balamurugan, K., Shiu, H., Park, H., Sinn, S., Neumann, M., Han, M., Chang, Y., Chen, C., Kim, H., Park, J., Noh, T.
  2016; 16 (3): 404–8

- **Exfoliation and Raman Spectroscopic Fingerprint of Few-Layer NiPS3 Van der Waals Crystals** *SCIENTIFIC REPORTS*
  Kuo, C., Neumann, M., Balamurugan, K., Park, H., Kang, S., Shiu, H., Kang, J., Hong, B., Han, M., Noh, T., Park, J.
  2016; 6: 20904

- **Insulating-layer formation of metallic LaNiO3 on Nb-doped SrTiO3 substrate** *APPLIED PHYSICS LETTERS*
  Yoo, H., Chang, Y., Moreschini, L., Kim, H., Sohn, C., Sinn, S., Oh, J., Kuo, C., Bostwick, A., Rotenberg, E., Noh, T.
  2015; 106 (12)

- **Experimental Determination of Electron Affinities for InN and GaN Polar Surfaces** *APPLIED PHYSICS EXPRESS*
  Lin, S., Kuo, C., Liu, X., Liang, L., Cheng, C., Lin, C., Tang, S., Chang, L., Chen, C., Gwo, S.
  2012; 5 (3)

- **Plasmonic Green Nanolaser Based on a Metal-Oxide-Semiconductor Structure** *NANO LETTERS*
  Wu, C., Kuo, C., Wang, C., He, C., Lin, M., Ahn, H., Gwo, S.
  2011; 11 (10): 4256–60

- **Natural band alignments of InN/GaN/AlN nanorod heterojunctions** *APPLIED PHYSICS LETTERS*
  Kuo, C., Chang, K., Shiu, H., Liu, C., Chang, L., Chen, C., Gwo, S.
  2011; 99 (12)

- **Spontaneous-polarization-induced heterojunction asymmetry in III-nitride semiconductors** *APPLIED PHYSICS LETTERS*
  Kuo, C., Chang, K., Shiu, H., Lin, S., Chen, C., Gwo, S.
  2011; 99 (2)

- **Is electron accumulation universal at InN polar surfaces?** *APPLIED PHYSICS LETTERS*
  Kuo, C., Lin, S., Chang, K., Shiu, H., Chang, L., Chen, C., Tang, S., Gwo, S.
  2011; 98 (5)
- **Effects of (NH4)(2)S-x treatment on indium nitride surfaces** *JOURNAL OF APPLIED PHYSICS*
  Chang, Y., Lu, Y., Hong, Y., Kuo, C., Gwo, S., Yeh, J.
  2010; 107 (4)
- **Valence band offset and interface stoichiometry at epitaxial Si3N4/Si(111) heterojunctions formed by plasma nitridation** *APPLIED PHYSICS LETTERS*
  Lee, H., Kuo, C., Shiu, H., Chen, C., Gwo, S.
  2009; 95 (22)
- **Direct imaging of GaN p-n junction by cross-sectional scanning photoelectron microscopy and spectroscopy** *APPLIED PHYSICS LETTERS*
  Kuo, C., Lee, H., Shiu, H., Chen, C., Gwo, S.
  2009; 94 (12)
- **Electronic Properties of III-Nitride Surfaces and Interfaces Studied by Scanning Photoelectron Microscopy and Spectroscopy** *Symposium on III-Nitride Materials for Sensing, Energy Conversion and Controlled Light-Matter Interactions, at the 2009 MRS Fall Meeting*
  Kuo, C., Lee, H., Wu, C., Shiu, H., Chen, C., Gwo, S.
  MATERIALS RESEARCH SOC .2009: 1202–I04-03
- **Immobilization of DNA-Au nanoparticles on aminosilane-functionalized aluminum nitride epitaxial films for surface acoustic wave sensing** *APPLIED PHYSICS LETTERS*
  Chiu, C., Lee, H., Kuo, C., Gwo, S.
  2008; 93 (16)
- **Absence of Fermi-level pinning at cleaved nonpolar InN surfaces** *PHYSICAL REVIEW LETTERS*
  Wu, C., Lee, H., Kuo, C., Chen, C., Gwo, S.
  2008; 101 (10): 106803
- **Cross-sectional scanning photoelectron microscopy and spectroscopy of wurtzite InN/GaN heterojunction: Measurement of "intrinsic" band lineup** *APPLIED PHYSICS LETTERS*
  Wu, C., Lee, H., Kuo, C., Chen, C., Gwo, S.
  2008; 92 (16)
- **Polarization-induced valence-band alignments at cation- and anion-polar InN/GaN heterojunctions** *APPLIED PHYSICS LETTERS*
  Wu, C., Lee, H., Kuo, C., Gwo, S., Hsu, C.
  2007; 91 (4)