Stanford



Bob Nagler

Staff Scientist, LCLS - Linac Coherent Light Source

Resume available Online

Bio

BIO

Bob Nagler is a scientist and principal investigator at the Matter in Extreme Conditions (MEC) endstation of the Linac Coherent Light Source (LCLS) at SLAC National Accelerator Laboratory. His research focuses on high energy density physics, warm dense matter, dense plasmas, and shock physics, with an emphasis on X-ray free-electron laser and synchrotron diagnostics, including inelastic X-ray scattering, for probing matter under extreme conditions.

Dr. Nagler has served as principal investigator on numerous experiments at LCLS and the European XFEL, leading large international research teams, and supervises graduate student research at Stanford University. In 2015, Dr. Nagler received the John Dawson Award for Excellence in Plasma Physics Research for work on isochoric heating and ionization potential depression. The imaging and phase-imaging diagnostic techniques Dr. Nagler developed are now used at X-ray free-electron laser facilities conducting high energy density science, including the European XFEL HED instrument.

HONORS AND AWARDS

- John Dawson Award for Excellence in Plasma Physics Research, American Physical Society (06/26/2015)
- Marie Curie Fellow at Oxford University, European Union Marie Curie Action (2006-2009)
- Francqui Foundation fellow, Belgiam American Educational Foundation (2003)
- Fulbright Fellow at Lawrence Berkeley National Laboratory, Fulbright Program (2003)
- Junior Research Fellowship, National Trust for Scientific Research - Flanders (1999-2003)

LINKS

- https://www.linkedin.com/in/bob-nagler/: https://www.linkedin.com/in/bob-nagler/
- Google Scholar Profile: https://scholar.google.com/citations?hl=en&user=CacHLE4AAAAJ

Publications

PUBLICATIONS

- **Superheating gold beyond the predicted entropy catastrophe threshold.** *Nature*
  White, T. G., Griffin, T. D., Haden, D., Lee, H. J., Galtier, E., Cunningham, E., Khaghani, D., Descamps, A., Wollenweber, L., Armentrout, B., Convery, C., Appel, K., Fletcher, et al
  2025; 643 (8073): 950-954

- **Direct imaging of ultrafast lattice dynamics.** *Science advances*
  Brown, S. B., Gleason, A. E., Galtier, E., Higginbotham, A., Arnold, B., Fry, A., Granados, E., Hashim, A., Schroer, C. G., Schropp, A., Seiboth, F., Tavella, F., Xing, et al

2019; 5 (3): eaau8044

- **In situ X-ray diffraction measurement of shock-wave-driven twinning and lattice dynamics.** *Nature*
  Wehrenberg, C. E., McGonegle, D., Bolme, C., Higginbotham, A., Lazicki, A., Lee, H. J., Nagler, B., Park, H. S., Remington, B. A., Rudd, R. E., Sliwa, M., Suggit, M., Swift, et al
  2017; 550 (7677): 496-499

- **The Matter in Extreme Conditions instrument at the Linac Coherent Light Source** *JOURNAL OF SYNCHROTRON RADIATION*
  Nagler, B., Arnold, B., Bouchard, G., Boyce, R. F., Boyce, R. M., Callen, A., Campell, M., Curiel, R., Galtier, E., Garofoli, J., Granados, E., Hastings, J., Hays, et al
  2015; 22: 520-525

- **Creation and diagnosis of a solid-density plasma with an X-ray free-electron laser** *NATURE*
  Vinko, S. M., Ciricosta, O., Cho, B. I., Engelhorn, K., Chung, H., Brown, C. R., Burian, T., Chalupsky, J., Falcone, R. W., Graves, C., Hajkova, V., Higginbotham, A., Juha, et al
  2012; 482 (7383): 59-U75

- **Turning solid aluminium transparent by intense soft X-ray photoionization** *NATURE PHYSICS*
  Nagler, B., Zastrau, U., Faeustlin, R. R., Vinko, S. M., Whitcher, T., Nelson, A. J., Sobierajski, R., Krzywinski, J., Chalupsky, J., Abreu, E., Bajt, S., Bornath, T., Burian, et al
  2009; 5 (9): 693-696

- **GeV electron beams from a centimetre-scale accelerator** *NATURE PHYSICS*
  Leemans, W. P., Nagler, B., Gonsalves, A. J., Toth, C., Nakamura, K., Geddes, C. R., Esarey, E., Schroeder, C. B., Hooker, S. M.
  2006; 2 (10): 696-699