

**Joint Postdoc Position in Nonlinear X-ray Science at University of Wisconsin-Madison and Stanford University/SLAC National Accelerator Laboratory**

We have an immediate job opening for a DOE-funded postdoc position jointly through Stanford University and the University of Wisconsin-Madison. The successful candidate will be associated with the PULSE Institute and primarily be stationed at SLAC National Accelerator Laboratory next to the Stanford Campus. The research involves developing and applying novel methods in nonlinear X-ray science for probing the dynamics of electrons that control chemical bonding and reactivity. The methods use the phenomenon of stimulated X-ray emission from the  $K\alpha$  and  $K\beta$  fluorescence lines of 3d transition metal systems after excitation with intense X-ray free electron laser pulses. This research focuses on two thrusts: 1) Develop stimulated X-ray emission into a new ultrafast spectroscopy probe of electronic structure and dynamics with enhanced sensitivity; 2) Develop phase-stable femtosecond X-ray pulse pairs for applications to coherent spectroscopies with extreme temporal precision.

Related experimental work will be carried out at the LCLS X-ray free-electron laser and other XFELs, such as SACLA in Japan. The candidate should have a strong background in experimental or theoretical X-ray or laser research. At the start of employment, the candidate must hold a PhD in Physics, Chemistry, or a related field.

For more information on this research, please see:

<https://bergmann.physics.wisc.edu/> (Section on Nonlinear Phenomena)

<https://lcls.slac.stanford.edu/> (Science, Research and Development Division)

Please send the application, including a brief research statement, CV, and names of three references to [ubergmann@wisc.edu](mailto:ubergmann@wisc.edu) and [mfkling@slac.stanford.edu](mailto:mfkling@slac.stanford.edu).

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&

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## Publications

Zhang, et al, **Generation of Intense Phase-Stable Femtosecond Hard X-ray Pulse Pairs**, *Proc Natl Acad Sci* **119**, e2119616119 (2022) <https://doi.org/10.1073/pnas.2119616119>

Kroll et al, **Observation of Seeded Mn K $\beta$  Stimulated X-ray Emission Using Two-color X-ray Free Electron Laser Pulses**, *Phys. Rev. Lett.*, **125**, 037404 (2020)  
<https://doi.org/10.1103/PhysRevLett.125.037404>

Kroll et al, **Stimulated X-ray Emission Spectroscopy in Transition Metal Complexes**, *Phys. Rev. Lett.*, **120**, 133203 (2018) <https://doi.org/10.1103/PhysRevLett.120.133203>