

Jianwei (John) Miao is Professor of Physics & Astronomy and the California NanoSystems Institute at UCLA. He received a Ph. D. in Physics, an M.S. in computer science, and an Advanced Graduate Certificate in Biomedical Engineering from State University of New York at Stony Brook in 1999. After graduation, he became a staff scientist at SLAC National Accelerator Laboratory, Stanford University. In 2004, he moved to UCLA as an assistant professor and was promoted to full professor in 2009. Miao is an internationally renowned pioneer in the development of novel imaging methods with X-rays and electrons. He performed the seminal experiment of extending X-ray crystallography to allow structural determination of non-crystalline specimens in 1999, which is known as coherent diffractive imaging (CDI), lensless or computational microscopy. CDI methods such as plane-wave CDI, ptychography (i.e., scanning CDI) and Bragg CDI have been broadly implemented using synchrotron radiation, X-ray free electron lasers, high harmonic generation, optical and electron microscopy. In 2012, he applied CDI algorithms to pioneer atomic electron tomography (AET) for 3D structure determination of materials without assuming crystallinity. He has since performed several groundbreaking AET experiments to image a wide range of crystal defects with unprecedented 3D detail. In 2019, he developed 4D AET to observe crystal nucleation at atomic resolution, showing early stage nucleation results contradict classical nucleation theory. More recently, he advanced AET to solve a long-standing grand challenge in the physical sciences – determining the 3D atomic structure of amorphous solids for the first time.

Miao is the Deputy Director of the STROBE National Science Foundation Science and Technology Center, an Associate Editor for *Science Advances*, and *Crystallography Reviews*. His honors and awards include the Werner Meyer-Ilse Memorial Award (1999), an Alfred P. Sloan Research Fellowship (2006-2008), the Outstanding Teacher of the Year Award in the Department of Physics & Astronomy at UCLA (2006-2007), a Kavli Frontiers Fellowship (2010), a Theodore von Kármán Fellowship from the RWTH Aachen University in Germany (2013), the Microscopy Today Innovation Award (2013), a University of Strasbourg Institute for Advanced Study Fellowship (2015-2017), a Fellow of the American Physical Society (2016), an NSF Creativity Award (2018), and the Innovation in Materials Characterization Award from the Materials Research Society (2021). He has been a Guest Scientist of the Institute of Physical and Chemical Research (RIKEN) in Japan since 2004.