

# Wei Guo



Dr. Wei Guo is an Assistant Professor in the department of Mechanical Engineering at Florida State University. His primary research focus is low temperature flow visualization in cryogenic helium for quantum turbulence and high Reynolds number classical turbulence research. Dr. Guo received his Ph.D. in Physics at Brown University in 2008 and his B.S. in Physics at Wuhan University (in China) in 2002. He worked as a postdoc associate at Yale University in 2008-2010. From 2010 until 2012 he was employed at Yale University as a Research Scientist. He joined the faculty of Florida State in 2012.

Dr. Guo has been active in the field of quantum fluid research for more than 10 years. He currently leads two projects in the cryogenics lab at the National High Magnetic Field Laboratory. The first project is to study the hydrodynamics and vortex-line configuration in a magnetically levitated drop of superfluid helium-4. By uniting a novel fluorescence imaging technique with a liquid helium magnetic levitation facility, this study will enable unprecedented insight into the behavior of a rotating superfluid drop and can untangle several key issues in quantum turbulence research. In the second project, a novel molecular tagging technique has been developed for flow visualization in cryogenic helium in both gas phase and liquid phase. This technique is based on the generation of thin lines of molecular tracer particles which can be imaged via laser-induced fluorescence. Tracking the tracer lines allows the extraction of the flow field information in cryogenic helium, which breaks new ground for substantial quantitative studies of classical turbulent flows with high Reynolds and Rayleigh numbers as well as quantum hydrodynamics in superfluid helium. These research activities involve both graduate and undergraduate students and will provide them the opportunities in gaining experience in fluid dynamics, cryogenics, advanced laser technologies, electronics, and data analysis techniques. These skills are applicable to nearly all STEM-related fields, giving these students the technical dexterity necessary to excel in their careers.