Min YU

Home Country
China

Degree
PhD in Computational Condensed Matter Physics

Expertise
Physics

Research Focus
Density Functional Theory

Host University
University of Illinois at Urbana-Champaign, United States

Fellowship Awarded
2006

As the only child in her family, Min Yu enjoyed being by herself and solving mathematical and physics problems. She found beauty and logic in science, and understood everyday life through problem solving.

Later she attended the University of Science and Technology of China where she studied physics and met her husband, who is also a physicist. She graduated from the University of Science and Technology of China in 2002 with a Bachelor of Science degree in physics.

Min is working on her PhD in physics at the University of Illinois at Urbana-Champaign in the United States, where she is studying computational condensed matter physics, which she enjoys discussing with people. Her research interest is in using Density Functional Theory (DFT) to study the properties of various materials such as surface energies and defect energies. DFT is a quantum mechanical theory used in physics and chemistry to investigate the electronic structure of many-body systems, in particular atoms, molecules and the condensed phases. It is among the most popular and versatile methods available in condensed-matter physics, computational physics, and computational chemistry.

Min's area of investigation is important both in physics and in materials science. One of her projects proposes a way to decompose the total energy in a material into the contribution associated with each of the atoms. It is useful so people can arrive at precise physical results by integrating the energy density in regions containing only a part of system, such as a surface region, or a defect.

When she completes her PhD studies, Min plans to return to her home country to teach at the University of Science and Technology of China.