

CURRICULUM VITAE

Ruqian Wu

Academic appointments:

- Distinguished Professor University of California, Irvine 2024-
- Professor University of California, Irvine 2001-2024
- Visiting Professor Fudan University 2013-2022
- Professor California State University, Northridge 1999-2001
- Associate Professor California State University, Northridge 1997-1999
- Assistant Professor California State University, Northridge 1994-1997
- Research Associate Northwestern University 1989-1994

Education:

- Ph. D Institute of Physics, Beijing (*Solid State Physics*) 1985-1989
Thesis title: *Interaction, charge transfer and work function of alkali metal and transition metal bimetallic surfaces.*
- B.Sc. Yancheng Teachers College, Jiangsu 1978-1981

Awards and honors:

- D.E. Bianchi Faculty Award for Outstanding Research, CSUN 1999
- APS Fellow 2001
- Outstanding Overseas Chinese Young Scholar 2005

Research interests:

Magnetism: Magnetic anisotropy, magnetostriction, magneto-optical effects, magnetic ordering, magneto-resistance and magnetic dynamics of transition metal thin films and compounds, van der Waals magnetic monolayers, magnetic damping, molecular magnets, magnetic noise on qubits, and quantum spin state

Materials Science: Mechanical and elastic properties of alloys and ultra-high strength steels; effects of grain boundaries, dislocations and impurities; metal/semiconductor interface, photovoltaics materials, phononic properties, electron-phonon coupling and superconductivity, spin-phonon coupling, topological materials, van der Waal heterostructures.

Surface Science: First principles determinations and simulations for geometric and electronic properties of bimetallic, oxide and metal/oxide surfaces, and for chemisorption problems of small molecules on metal, oxide and oxide-supported catalysts, single atom catalysts, CO₂ reduction reactions.

Nano Science: Growth mechanism and electronic properties of nanowires, nanotubes and nanoclusters. 1D transport properties in wires. Li segregation in nano-electrodes. Gas sensing of metal and semiconductor nanowires.

Optics: Linear and non-linear optical properties of bulk semiconductors, clean and chemisorbed metal, semiconductor and oxide surfaces, band gap engineering, dopant control, interface/surface optical properties.

Spintronics: New topological materials, spin-Seebeck effect, photo spin voltaic effect, spin wave theory, quantum anomalous Hall effect, spin relaxation, and quantum computing.

Editorial activities:

- Editor: Physics Letters A (2002-2020, Condensed Matter Physics, Nanoscience and Computational Physics)
- Advisor Board: SCOPUS Scientific Search Database, Elsevier Science BV (2004-2007).
- Guest Editor and Editorial Board: J. Mag. Mag. Matter. (2016-)

Publications:

Please see the list of 370+ publications [here](#).