



Prof. Ten-Ming Wu / Institute of Physics

Mesoscopic Physics, Nanophysics, Kondo Effect, Quantum Phase Transition, Electron Dynamics on Helium

The research interests of Soft Condensed Matter Group in Institute of Physics, NCTU primary cover particle dynamics and microstructures in liquids, supercooled liquids, glassy states, and clusters, with an aim to understand the ultrafast laser spectroscopy, inelastic neutron scattering and x-ray scattering of these materials. We are theoretical group; developing analytical theories and performing molecular dynamics simulations are our methodologies. Three topics of our current researches and related references are given in the following:

(a) Anomalous structure of liquid gallium

K. H. Tsai, T. M. Wu, and S. F. Tsay, “Revisiting anomalous structures in liquid Ga”, *J. Chem. Phys.* **132**, 034502 (2010).

(b) Melting of metallic clusters

P. H. Tang, T. M. Wu, T. W. Yen, S. K. Lai, and P. J. Hsu, “Comparative study of cluster $\text{Ag}_{17}\text{Cu}_2$ by instantaneous normal mode analysis and by isothermal Brownian-type molecular dynamics simulation”, *J. Chem. Phys.* **135**, 094302 (2011).

P. H. Tang, T. M. Wu, P. J. Hsu, and S. K. Lai, “Melting behavior of Ag_{14} cluster: an order parameter by instantaneous normal modes”, *J. Chem. Phys.* **137**, 244304 (2012).

(c) Structures and dynamics of water in bulk liquids and in nano-confinements

Y. C. Chen, P. H. Tang, and T. M. Wu, “Instantaneous normal mode analysis for intermolecular and intramolecular vibrations of water from atomic point of view”, *J. Chem. Phys.* **139**, 204505 (2013).

S. R. Lin, P. H. Tang, and T. M. Wu, “Local structural effects on orientational relaxation of OH-bond in liquid water over short to intermediate timescales”, *J. Chem. Phys.* **141**, 214505 (2014).