
**Postdoctoral Positions available in the Yuen-Zhou group at UCSD**

The Yuen-Zhou group at the University of California San Diego (UCSD) is a theoretical chemistry research group working at the intersection of quantum optics, condensed matter theory, and physical chemistry. We are interested in designing and studying new synergistic materials and phenomena that emerge by interfacing molecular systems with novel photonic nano and microstructures, solid state architectures, and quantum and classical electromagnetic fields. Current research interests broadly include polariton chemistry, topological states of matter, and quantum dynamics.

We are looking to hire two postdoctoral fellows (negotiable starting date, but positions are available ASAP and open until filled) to work on the following funded projects:

**(a) Vibrational polaritons**
This [AFOSR Molecular Dynamics and Theoretical Chemistry](#) funded project aims to uncover the emerging physicochemical properties of a new type of hybrid light-matter system consisting of solutions of IR-active molecules in resonant optical cavities. The modes featured by these systems (vibrational polaritons) have intriguing properties including capabilities of remote energy transfer, anomalous nonlinear optical properties, and modified chemical reactivity.

Relevant references:

**(b) Molecular polaritons for quantum transduction**
This is a project funded through the Center for Molecular Quantum Transduction (CMQT), which is a new [DOE Energy Frontier Research Center (EFRC)](#) aiming to leverage the use of
molecular materials for quantum information processing tasks. Our aim in the center is to develop ways to use optical cavities, novel photonics, and a combination of solid state and molecular systems to mediate strong photon-molecule interactions and control processes that are relevant to quantum optics and production of quantum light.

Relevant references:

Qualified candidates should be theorists holding a PhD in Chemistry, Physics, Electrical Engineering, or related physical sciences. Interested individuals should send a resume to Professor Joel Yuen-Zhou at joelyuen@ucsd.edu. UCSD is located in La Jolla, a seaside community within the city of San Diego, California, a city which invariably ranks high in terms of livability, good weather, and recreational activities (e.g., see here).