

Materials Chemistry

Department of Chemistry
University of Illinois Urbana-Champaign

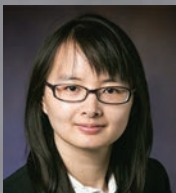


For more information on Materials Chemistry faculty, scan →



Paul V. Braun

Electrochemical energy storage; responsive polymers; self-healing materials; mesoscale materials; optical materials; chemical sensors; self-assembly



Qian Chen

Colloidal nanoparticles; synthesis, assembly, property; multivalent ion batteries; polymer physics; in situ electron microscopy imaging; bioimaging and machine learning



Majed S. Fataftah

Inorganic and bioinorganic chemistry; synthesis, spectroscopy, and electronic structure; metal-organic frameworks; molecular magnetism; quantum information science



Hee-Sun Han

Development of microfluidics & imaging technologies for systems biology; modeling the ensemble behavior of complex biological systems; imaging-based spatial omics; microfluidics-based high-resolution assays; bottom-up construction of synthetic cells



Nicholas E. Jackson

Theoretical soft materials chemistry; electron and ion transport; machine learning applied to molecular and polymeric systems; multiscale all-atom and coarse-grained simulations



Prashant K. Jain

Plasmonics; energy chemistry; artificial photosynthesis; nanocatalysis; sustainable chemical synthesis; nanoscale imaging; photophysics and photochemistry; nanocrystals



Christy F. Landes

New spectroscopic tools to image chemical dynamics at interfaces at the limit of a single event; creating new models to understand and predict macroscale processes like protein separation and photocatalysis

Materials Chemistry

chemistry.illinois.edu

Other faculty with interests in Materials Chemistry

Mikael Backlund

Quantum sensing with solid-state defects; applications in hard and soft condensed matter physics

Qing Cao (faculty affiliate)

Materials for novel (opto)electronic devices

Mary L. Kraft (faculty affiliate)

Biological membrane imaging

Deborah E. Leckband (faculty affiliate)

Protein function at interfaces and under confinement; hybrid biomaterials; protein interactions with polymers

Lisa Olshansky

Switchable materials for renewable energy applications

Xing Wang (research faculty)

Nucleic acids-based nanomaterials for applications in chemistry, biology, and medicine

Hong Yang (faculty affiliate)

Nanomaterials for catalysis



Stephan Link

Photophysics and photochemistry of nanomaterials, plasmonics; solar energy conversion; single-particle imaging; ultrafast spectroscopy



Xiaotang Lu

Brain circuit imaging for understanding development and pathology of the central nervous system: correlated multidimensional (from nanoscale to whole brains) and multiplexed (transcriptomic and proteomic) imaging of the brain; (bio)chemical probes; tissue chemistry; imaging methods



Liviu M. Mirica

Development and characterization of homogeneous and heterogeneous transition metal catalysts



Catherine J. Murphy

Synthesis, characterization, biological applications and environmental implications of colloidal inorganic nanoparticles; surface chemistry and plasmonic properties of gold nanoparticles; sustainability



Joaquín Rodríguez-López

Interfacial electrochemistry; scanning electrochemical microscopy (SECM); spectroelectrochemistry; automated electrochemistry; nanoelectrodes; batteries; electrocatalysis; graphene electrodes; redox polymers; electrochemical simulation; reactive oxygen species



Benjamin Snyder

Inorganic spectroscopy and electronic structure; porous materials; heterogeneous catalysis; zeolites; metal-organic frameworks



Michael J. Strauss

Discovery and development of synthetic methods to (1) engineer emergent phenomena in polymers and other soft materials, (2) transform plastic waste into high-value and high-demand small molecules, and (3) access structurally dynamic multi-dimensional polymeric materials



Josh Vura-Weis

Femtosecond X-ray spectroscopy of catalytic reaction intermediates