UIUC MATERIALS SCIENCE AND ENGINEERING

METALLIC MATERIALS

AVERBACK
ion beam modifications and analysis
nanophase materials

BELLON
phase transitions far from equilibrium microstructures

ROBERTSON
micromechanics and mechanics of failure
radiation effects

SHANG
structure-property relations in metal-ceramic- and polymer-matrix composites

Allen Cahill
Economy Ehrlich
Johnson Martin
Rockett Trinkle
Weaver

ELECTRONIC MATERIALS

ABELSON
thin films and film growth
amorphous materials
opto-electronic devices

ALLEN
microelectronic processing
nanostructures and nanocalorimetry, interfacial phenomena

CAHILL
surface morphologies
crystal growth
thermal properties

ROCKETT
defects in semiconductors
contact metallurgies solid phase reaction kinetics

WEAVER
electronic and structural properties of surfaces, interfaces, and nanostructures

Averback Braun
Economy Johnson
Martin Robertson
Sottos Zuo

CERAMIC MATERIALS

DILLON
ceramic structure-property relations, electron microscopy, electrochemical intercalation for L-ion batteries

KRIVEN
phase transformations, electron microscopy, HT synchrotron diffraction, geopolymers, ceramic processing, bioceramics

LEWIS
colloidal processing, self assembly, complex fluids

MARTIN
epitaxial growth of complex oxide thin films; pulsed laser deposition and molecular beam epitaxy, functional materials

ZUO
complex oxides, structure and bonding at surfaces, interfaces and nanocrystals

Abelson Braun
Cahill Economy
Granick Johnson
Schweizer Sottos
Shang Weaver

POLYMERIC AND ORGANIC MATERIALS

BRAUN
organic and inorganic self assembly
photonics
biomaterials

ECONOMY
synthesis/characterization of composite thermosets and large area adsorption systems

GRANICK
polymers and biopolymers
nanorheology/tribology
colloids

ROGERS
electroactive polymers, plastic electronics, microfluidics, elastomers, soft

SHIM
nanoscale materials and interfaces, nanocrystals, nanotubes and bio/nano-hybrid materials

SOTTOS
self-healling and bioinspired materials; thin films and composites; mechanics and property characterization

Allen Lewis
Schweizer Shang

BIOMATERIALS

CHENG
biomaterials, polymers, gene delivery, and nanomedicine, self-assembly

Allen Braun
Granick Kriven
Schweizer Shang
Shim

COMPUTATIONAL MATERIALS SCIENCE

JOHNSON
theory and computation of structure, properties, and processes

SCHWEIZER
theory of macromolecular, colloidal, and complex fluid materials

TRINKLE
computation of mechanical properties and defects

Averback Bellon
Zuo

Research Professors
Materials Science and Engineering: G. Ehrlich, J. Greene

Affiliate Faculty:
Aerospace Engineering: S. White
Argonne National Laboratory: S. Bader
Chemical & Biomedical Engineering: C. Zukoski
Chemistry: Y. Lu, J. Moore, R. Nuzzo, K. Suslick
A. Wieckowski
ECE.: I. Adesida, S. Bishop, J. Coleman, B. Cunningham
G. Eden, K. C. Hsieh, K. Kim, X. Li, J. Lyding
Geology: J. Bass
Mechanical Sci. & Eng.: A. Beaudoin, P. Sofronis,
A. Wagoner Johnson
Materials Research Laboratory: I. Petrov
Physics: C. P. Flynn

MSE at Illinois

NOTE: Primary research areas are identified for each of the faculty. Their broader interests are emphasized by including them under more than one column.