



Chemical Engineering

**Current Faculty
Research Summaries**
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Biomedical & Biotechnology



Energy



Materials



Environment & Sustainability



Math & Computational Systems



Transport & Thermodynamics



Catalysis & Reaction Engineering



Daniel Anderson

nano-based drugs,
personalized medicine,
cancer immunology



Robert Armstrong

polymers, rheology,
transport phenomena,
applied math



Paul Barton

dynamic modeling,
simulation &
optimization, systems



Martin Bazant

transport, systems,
microfluidics, applied
math, electrokinetics



Daniel Blankschtein

colloid & interface science,
thermodynamics,
statistical mechanics



Richard Braatz

systems & controls,
materials, systems
nanotech, applied math



Fikile Brushett

electrochemical energy
conversion & storage,
microfluidics



Arup Chakraborty

immunology, regulation
of transcription,
statistical mechanics



Kwanghun Chung

neuroscience, medical
imaging, brain mapping,
polymer science



Connor Coley

autonomous discovery,
machine learning,
molecular design



Clark Colton

biomedical engineering,
biochem engineering,
mass transfer



Brandon DeKosky

biotechnology, vaccines,
molecular immunology,
antibodies, t cells



Patrick Doyle

microfluidics, complex
fluids, polymer physics,
rheology & transport



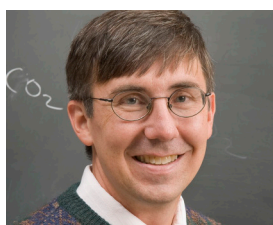
Ariel Furst

bioelectrochemistry,
clinical diagnostics,
biotechnology



Kate E. Galloway

synthetic biology,
systems biology,
genetic control systems



William Green

chemical kinetics,
molecular simulation,
free radical reactions



Paula Hammond

macromolecular design
& synthesis, nanoscale
assembly, drug delivery



T. Alan Hatton

transport phenomena,
separation processes,
microemulsions, colloids



Klavs Jensen

materials synthesis
& processing,
microsystems



Jesse Kroll

atmospheric chemistry,
particulate matter,
chemical kinetics



 Biomedical & Biotechnology Energy Materials Environment & Sustainability Math & Computational Systems Transport & Thermodynamics Catalysis & Reaction Engineering**Heather Kulik**

catalysis, transition-metal chemistry, electronic structure methods

**Robert Langer**

drug delivery, biotech, tissue engineering, biomedical engineering

**Doug Lauffenburger**

cell, tissue, & biomolecular engineering

**Christopher Love**

micro/nanofabrication & surface chemistries, cellular immunology

**Allan Myerson**

nucleation, polymorphism, & industrial applications of crystallization

**Bradley Olsen**

block copolymers, soft condensed matter physics, bioelectronics

**Kristala Prather**

metabolic engineering, biochem engineering, synthetic biology

**Qin (Maggie) Qi**

bio transport phenomena, biomechanics, complex fluids, microfluidics,

**Yuriy Román**

catalysis, biomass, biofuels, design of catalytic materials

**Gregory Rutledge**

soft condensed matter, polymer engineering, statistical mechanics

**Hadley Sikes**

biomolecular engineering, redox chemistry, clinical diagnostics

**Zachary Smith**

membrane separations, polymer physics, nanotechnology

**Greg Stephanopoulos**

metabolic & biochemical engineering, biotech, bioinformatics

**Michael Strano**

transport, exciton engineering for solar energy, nanosensors

**William Tisdale**

renewable energy, nanotech, nanomaterials, nonlinear spectroscopy

**Bernhardt Trout**

pharma manufacturing, biopharmaceuticals, nucleation & crystallization

**K. Dane Wittrup**

molecular bioengineering, protein engineering, biotechnology



These are just a few of our faculty's research interests; for more information, go to cheme.mit.edu.