



What a difference five years makes.

It takes time, resources and hard work from outstanding faculty members to be recognized as a top academic program. The Department of Chemical Engineering at Auburn University is on its way to meeting this significant accomplishment.

In the past five years, the program has increased in size and strength, allowing Auburn Chemical Engineering to provide opportunities and advantages to its students, and to produce cutting-edge research.

- 385 undergraduate and 85 graduate students, including 65 doctoral students
- \$7 million in research expenditures in the past year
- 26th in research expenditures among chemical engineering departments in 2006
- \$27.5 million in facility renovations of Ross Hall and Wilmore Laboratories

We proudly introduce our newest faculty additions since 2003, six all-star, internationally recognized academicians, who have joined our renowned faculty of 21.

Cell-material interactions; cardiovascular biomaterials for intravascular device endothelialization; directed stem cell differentiation; and creation and electrophysiological characterization of engineered cardiac tissue

Elizabeth Lipke
Assistant Professor
Appointed in 2008
Ph.D. – Rice University, 2005



Fault detection and diagnosis; control performance monitoring; manufacturing process modeling, monitoring and control; dynamic modeling of metabolic networks; and early cancer detection

Jin Wang
Assistant Professor
Appointed in 2006
Ph.D. – The University of Texas-Austin, 2004



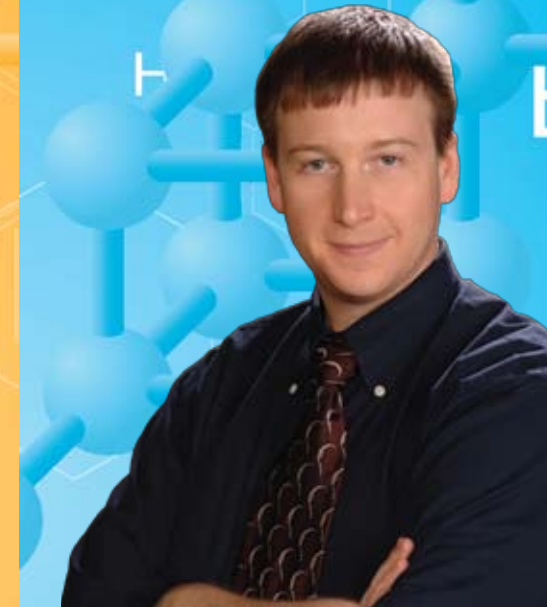
Nanorod liquid crystals; macroscopic applications of single-walled carbon nanotubes (SWNTs); structure-processing-property relationships in polymer nanocomposites; and rheological characterization of nanomaterials

Virginia A. Davis
Assistant Professor
Appointed in 2005
Ph.D. – Rice University, 2005



Micro- and nano-electromechanical systems design, fabrication and reliability; micro- and nano-tribology; molecularly thin film synthesis and design; novel thin film processing; surface science; and semiconductor materials processing

Bob Ashurst
Assistant Professor
Appointed in 2004
Ph.D. – University of California-Berkeley, 2003



Process systems engineering; computer-aided process engineering; process integration and optimization; process and product design; sustainable and environmentally benign technologies; optimization of integrated biorefineries; and logistical fuel processing systems

Mario R. Eden
Associate Professor
Appointed in 2004
Ph.D. – Technical University of Denmark, 2003



Drug delivery; bio (mimetic, inspired and hybrid) materials; therapeutic and diagnostic biomedical devices; cognitive networks for sensing drug delivery; functional intelligent polymeric films and networks; and bionanotechnology

Mark E. Byrne
Associate Professor
Appointed in 2004
Ph.D. – Purdue University, 2003





Christopher B. Roberts
 Uthlaut Professor and
 Department Chair
 Ph.D. – University of
 Notre Dame, 1994
 Supercritical fluid
 (SCF) and tunable
 solvent technologies;
 nanomaterials synthesis
 in tunable solvents;
 heterogeneous and
 homogeneous reactions
 in SCFs; fuel synthesis;
 and gas-to-liquids
 technologies



Robert P. Chambers
 Professor
 Ph.D. – University of
 California-Berkeley,
 1965
 Biochemical
 engineering; biofuels;
 bioresource engineering;
 biomedical engineering;
 pharmaceutical
 and environmental
 biotechnology.



Harry T. Cullinan
 Professor and Director
 of Alabama Center for
 Paper and Bioresource
 Engineering
 Ph.D. – Carnegie
 Institute of Technology
 1965
 Pulp and paper;
 bioresource engineering;
 biorefining and biofuels



Steve R. Duke
 Alumni Associate
 Professor
 Ph.D. – University
 of Illinois-Urbana-
 Champaign, 1996
 Alternative fuels; polymer
 processing; multiphase
 flow visualization
 methods; environmental
 and industrial
 separations; particle
 and bubble interactions;
 transport phenomena



Ram B. Gupta
 Philpott-Westpoint
 Stevens Professor and
 Graduate Program
 Chair
 Ph.D. – University of
 Texas-Austin, 1993
 Biofuels; hydrogen
 fuel; nanomedicine;
 nanotechnology;
 supercritical fluids



Thomas Hanley
 Professor
 Ph.D. – Virginia
 Polytechnic Institute
 and State University,
 1972
 Reactive mixing;
 chemical, biochemical
 and biomedical process
 analysis involving
 reaction coupled with
 transport phenomena;
 simulation using
 computational fluid
 dynamics (FLUENT);
 viscosity analysis of
 multiphase and other
 non-Newtonian systems



**Gopal A.
 Krishnagopalan**
 Professor
 Ph.D. – University of
 Maine-Orono, 1976
 Integrated biorefining;
 biomass fractionation;
 value prior to pulping;
 pulp and paper
 engineering in-situ liquor
 analysis



William Josephson
 Visiting Assistant
 Professor
 Ph.D. – Auburn
 University, 1995
 Efficiency improvements
 in paper recycling
 operations; energy
 reductions in pulp
 processing; millwide
 process control methods;
 engineering education;
 development of teaching
 methods; K-12 outreach



Yoon Y. Lee
 Alumni Professor
 Ph.D. – Iowa State
 University, 1972
 Bioprocessing of
 lignocellulosic materials
 for production of fuels
 and chemicals; bioreactor
 development for enzyme
 and microbial process
 technology; pretreatment/
 delignification of
 biomass for enzymatic
 saccharification and
 co-fermentation



Glennon Maples
 Professor
 Ph.D. – Oklahoma State
 University, 1966
 Design of phase-cooling
 systems for power
 plants; design of wood-
 burning equipment;
 reducing pollution from
 combustion systems;
 development of methods
 to reduce energy
 consumption



David R. Mills
 Lab Manager
 M.S. – Washington State
 University, 1995
 Technology for
 engineering instruction;
 plant cell culture;
 bioenergy



Ronald D. Neuman
 Professor
 Ph.D. – The Institute of
 Paper Chemistry, 1973
 Surface science and
 interfacial phenomena;
 surface characterization
 of pharmaceutical and
 biorelevant particles,
 fibers and solid surfaces



Timothy D. Placek
 Assistant Professor
 and Undergraduate
 Program Chair
 Ph.D. – University of
 Kentucky, 1978
 Process design and
 engineering education



Ronald A. Putt
 Assistant Research
 Professor
 M.S. – Massachusetts
 Institute of Technology,
 1975
 Systems for microalgae
 cultivation and
 harvesting; catalyst
 development;
 electrochemical
 technology; product and
 process development;
 technology startups



Bruce J. Tatarchuk
 Professor and Director
 of Center for
 Microfibrous Materials
 Manufacturing
 Ph.D. – University
 of Wisconsin, 1981
 Microfibrous materials
 manufacturing;
 heterogeneous reactive
 systems and catalysis;
 fuel reforming/processing;
 fuel cell systems;
 electrochemical systems
 and electrode materials