

EDITORIAL AND BUSINESS ADDRESS:

Chemical Engineering Education
Department of Chemical Engineering
University of Florida • Gainesville, FL 32611
PHONE and FAX : 352-392-0861
e-mail: cee@che.ufl.edu

EDITOR

Tim Anderson

ASSOCIATE EDITOR

Phillip C. Wankat

MANAGING EDITOR

Carole Yocum

PROBLEM EDITOR

James O. Wilkes, U. Michigan

LEARNING IN INDUSTRY EDITOR

William J. Koros, Georgia Institute of Technology

PUBLICATIONS BOARD**• CHAIRMAN •**

E. Dendy Sloan, Jr.
Colorado School of Mines

• MEMBERS •

Pablo Debenedetti
Princeton University

Dianne Dorland
Rowan University

Thomas F. Edgar
University of Texas at Austin

Richard M. Felder
North Carolina State University

Bruce A. Finlayson
University of Washington

H. Scott Fogler
University of Michigan

Carol K. Hall
North Carolina State University

William J. Koros
Georgia Institute of Technology

John P. O'Connell
University of Virginia

David F. Ollis
North Carolina State University

Ronald W. Rousseau
Georgia Institute of Technology

Stanley I. Sandler
University of Delaware

Richard C. Seagrave
Iowa State University

C. Stewart Slater
Rowan University

Donald R. Woods
McMaster University

Chemical Engineering Education

Volume 37**Number 4****Fall 2003****► LECTURES**

242 The Equations (of Change) Don't Change: But the Profession of Engineering Does,
W. R. Schowalter

284 Future Directions in ChE Education: A New Path to Glory,
Arvind Varma

► CURRICULUM

248 Mixing Writing with First-Year Engineering: An Unstable Solution?
Lisa Lebduska, David DiBiasio

► CLASSROOM

254 Sensitivity Analysis in ChE Education: Part 2. Application to Implicit Models,
William R. Smith, Ronald W. Missen

274 Particle Technology Demonstrations for the Classroom and Laboratory,
Simon M. Iveson, George V. Franks

290 Exceptions to the Le Chatelier Principle,
David S. Corti, Elias I. Franses

300 Development and Implementation of an Educational Simulator: GLUCOSIM,
Fetanet Ceylan Erzen, Gülnur Birol, Ali Çinar

316 Using Spreadsheets and Visual Basic Applications as Teaching Aids for a Unit Operations Course,
Juan P. Hinestroza, Kyriakos Papadopoulos

► LABORATORY

262 A Batch Fermentation Experiment for L-lysine Production in the Senior Laboratory,
David R. Shonnard, Edward R. Fisher, David W. Caspary

296 A Fluid-Mixing Laboratory for ChE Undergraduates,
Gabriel Ascanio, Robert Legros, Philippe A. Tanguy

306 Simulation and Experiment in an Introductory Process Control Laboratory Experience,
Kenneth R. Muske

► SURVEY

268 Factors Influencing the Selection of Chemical Engineering as a Career,
David C. Shalleross

► RANDOM THOUGHTS

282 Learning by Doing,
Richard M. Felder, Rebecca Brent

► LEARNING IN INDUSTRY

310 Returning as a Professor,
Gary Blau, Phillip Wankat

CHEMICAL ENGINEERING EDUCATION (ISSN 0009-2479) is published quarterly by the Chemical Engineering Division, American Society for Engineering Education, and is edited at the University of Florida. Correspondence regarding editorial matter, circulation, and changes of address should be sent to CEE, Chemical Engineering Department, University of Florida, Gainesville, FL 32611-6005. Copyright © 2003 by the Chemical Engineering Division, American Society for Engineering Education. The statements and opinions expressed in this periodical are those of the writers and not necessarily those of the ChE Division, ASEE, which body assumes no responsibility for them. Defective copies replaced if notified within 120 days of publication. Write for information on subscription costs and for back copy costs and availability. POSTMASTER: Send address changes to Chemical Engineering Education, Chemical Engineering Department, University of Florida, Gainesville, FL 32611-6005. Periodicals Postage Paid at Gainesville, Florida and additional post offices.