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 I. 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 38

Number 3

Summer 2004

▶ DEPARTMENT

162 University of Oklahoma,

Robert L. Shambaugh, Edgar A. O'Rear, Lance L. Lobban

► EDUCATOR

168 Mike Doherty of the University of California, Santa Barbara, *Mary E. Howe-Grant*

► LARORATORY

- 174 A Quadruple-Tank Process Control Experiment, Effendi Rusli, Siong Ang, Richard D. Braatz
- **188** A Dust Explosion Apparatus Suitable for Use in Lecture Demonstrations, *Ronald J. Willey, Edward Shanley*
- 190 Compressible Flow Analysis: Discharging Vessels, S.E. Forrester, A.V. Nguyen, G.M. Evans, P.M. Machniewski
- 196 Investigation into the Propagation of Baker's Yeast: A Laboratory Experiment in Biochemical Engineering, Xuemei Li, Xiao Dong Chen, Matthew T. Hardin
- 204 Using the Evolutionary Operation Method to Optimize Gas Absorber Operation (A Statistical Method for Process Improvement), Jimmy L. Smart
- 212 Laboratory Experiment on Gene Subcloning for Chemical Engineering Students, *Claire Komives, Sabine Rech, Melanie McNeil*
- 228 An Integrated Chemical Reaction Engineering Lab Experiment, Adélio M. Mendes, Luis M. Madeira, Fernão D. Magalhães, José M. Sousa
- 236 PEM Fuel-Cell Test Station and Laboratory Experiment, Michael W. Fowler, Alfred Lam

► CURRICULUM

182 A Respiration Experiment to Introduce ChE Principles, Stephanie Farrell, Robert P. Hesketh, Mariano J. Savelski

► RANDOM THOUGHTS

200 How to Evaluate Teaching, Richard M. Felder, Rebecca Brent

► CLASS AND HOME PROBLEMS

216 Solvent Recovery by Condensation: An Application of Phase Equilibrium and Sensitivity Analysis, Ronald W. Missen

► CURRICULUM

- 222 Freshman Design in Chemical Engineering at Rose-Hulman Institute of Technology, *Sharon G. Sauer*
- 203 Book Review

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 © 2004 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.

Summer 2004 161