

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
Lynn Heasley

PROBLEM EDITOR
Daina Briedis, Michigan State

LEARNING IN INDUSTRY EDITOR
William J. Koros, Georgia Institute of Technology

PUBLICATIONS BOARD

- **CHAIR** •
C. Stewart Slater
Rowan University
- **VICE CHAIR** •
Jennifer Curtis
University of Florida
- **PAST CHAIR** •
John O'Connell
University of Virginia
- **MEMBERS** •
Pedro Arce
Tennessee Tech University
Lisa Bullard
North Carolina State
Stephanie Farrell
Rowan University
Jim Henry
University of Tennessee, Chattanooga
Jason Keith
Michigan Technological University
Milo Koretsky
Oregon State University
Suzanne Kresta
University of Alberta
Steve LeBlanc
University of Toledo
David Silverstein
University of Kentucky
Margot Vigeant
Bucknell University

Chemical Engineering Education

Volume 45 Number 1 Winter 2011

► **DEPARTMENT**

- 2 Chemical Engineering at The University of Arizona
*Paul Blowers, Jim A. Field, Kimberly Ogden, A. Eduardo Sáez,
and Reyes Sierra*

► **EDUCATOR**

- 8 Purdue's Doraiswami (Ramki) Ramkrishna: A Population of One
Phil Wankat and Arvind Varma

► **CLASS AND HOME PROBLEMS**

- 15 Modeling an Explosion: The Devil Is in the Details
Peter W. Hart and Alan W. Rudie

► **RANDOM THOUGHTS**

- 37 How to Stop Cheating (Or At Least Slow It Down)
Richard Felder

► **LABORATORY**

- 53 Project-Based Learning in Education Through an Undergraduate Lab Exercise
*Donald D. Joye, Adam Hoffman, Jacqueline Christie, Mayo Brown,
and Jennifer Niemczyk*

► **CLASSROOM**

- 59 Solution of Nonlinear Algebraic Equations in the Analysis, Design, and Optimization of Continuous Ultrafiltration
Greg Foley

► **CURRICULUM**

- 21 A Simplified Model of Human Alcohol Metabolism That Integrates Biotechnology and Human Health Into a Mass Balance Team Project
Allen H.J. Yang, Kathryn Dimiduk, and Susan Daniel
- 30 CFD Modeling of Water Flow Through Sudden Contraction and Expansion in a Horizontal Pipe
V.V.R. Kaushik, S. Ghosh, G. Das, and P.K. Das
- 39 Integration of Biological Applications Into the Core Undergraduate Curriculum: A Practical Strategy
Claire Komives, Michael Prince, Erik Fernandez, and Robert Balcarcel
- 47 Drug Design, Development, and Delivery: An Interdisciplinary Course on Pharmaceuticals
Mark R. Prausnitz and Andreas S. Bommarius
- 65 Experience Gained During the Adaptation of Classical ChE Subjects to the Bologna Plan in Europe: The Case of Chemical Reactors
Sergio Ponsá and Antoni Sánchez
- 73 Journal Club: A Forum to Encourage Graduate and Undergraduate Research Students to Critically Review the Literature
Adrienne R. Minerick

► **OTHER CONTENTS**

- 58 Book Review, *Lisa Bullard*
inside front cover Teaching Tip, *Matthew W. Liberatore*

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 © 2011 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 (USPS 101900).