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 • John O'Connell University of Virginia

• VICE CHAIR • C. Stewart Slater Rowan University

• MEMBERS •

Pedro Arce Tennessee Tech University

Lisa Bullard North Carolina State

Jennifer Curtis University of Florida

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

Lorenzo Saliceti University of Puerto Rico

David Silverstein University of Kentucky

Margot Vigeant Bucknell University

Chemical EngineeringEducationVolume 44Number 4Fall 2010

► OUTREACH

280 Engaging K-12 Students in the Engineering Classroom: A Creative Use of Undergraduate Self-Directed Projects Omolola Eniola-Adefeso

► CLASSROOM

- 246 Pilot-Scale Laboratory Instruction for Chemical Engineering: The Specific Case of the Pilot-Unit Leading Group Anne-Marie Billet, Séverine Camy, and Carole Coufort-Saudejaud
- 274 Versatile Desktop Experiment Module (DEMo) on Heat Transfer Adrienne R. Minerick
- 289 Design Project on Controlled-Release Drug Delivery Devices: Implementation, Management, and Learning Experiences *Qingxing Xu, Youyun Liang, Yen Wah Tong, and Chi-Hwa Wang*

► RANDOM THOUGHTS

- 287 Meet Your Students 3. Michelle, Rob, and Art Richard Felder
- ► SURVEY
 - 306 Ideas to Consider for New Chemical Engineering Educators: Part 2 (Courses Offered Later in the Curriculum) Jason M. Keith, David L. Silverstein, Donald P. Visco, Jr., and Lisa G. Bullard

► CURRICULUM

- 253 Heat Transfer in Glass, Aluminum, and Plastic Beverage Bottles William M. Clark, Ryan C. Shevlin, and Tanya S. Soffen
- 262 Drug Transport and Pharmacokinetics for Chemical Engineers Laurent Simon, Kumud Kanneganti, and Kwang Seok Kim
- 267 Introducing Decision Making Under Uncertainty and Strategic Considerations in Engineering Design Georgia Kosmopoulou, Chintamani Jog, Margaret Freeman, and Dimitrios V. Papavassiliou
- **299** Undergrad. Course in Modeling and Simulation of Multiphysics Systems *Estanislao Ortiz-Rodriguez, Jorge Vazquez-Arenas, and Luis A. Ricardez-Sandoval*
- **318** Evaluating the Performance of a Battery Using Temperature and Voltage Profiles and a Battery-Resistor Circuit Module
- Bryan Sawyer, Michelle Ji, Michael J. Gordon, and Galen J. Suppes **TEACHING TIP**
 - inside front cover Tips on Efficient, Effective, Student-Centered Teaching Lisa G. Bullard
- ► BOOK REVIEW

inside back cover Educating Engineers. Designing for the Future of the Field by Sheppard, S.D., K. Macatangay, A. Colby, and W.M. Sullivan Reviewed by Phillip C. 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 © 2010 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).