

BUSINESS ADDRESS:
Chemical Engineering Education
5200 NW 43rd St., Suite 102-239
Gainesville, FL 32606
PHONE: 352-682-2622
FAX: 866-CEE-0576
email: cee@che.ufl.edu

EDITOR

Phillip C. Wankat

ASSOCIATE EDITOR

Richard B. Dickinson

ASSISTANT EDITOR

Donald P. Visco, Jr.

MANAGING EDITOR

Lynn Heasley

PROBLEMS EDITOR

David Silverstein, University of Kentucky

LIFELONG LEARNING EDITOR

Lisa G. Bullard, North Carolina State University

PUBLICATIONS BOARD

• **CHAIR** •

C. Stewart Slater
Rowan University

• **VICE CHAIR** •

Milo Koretsky
Oregon State University

• **VICE CHAIR DESIGNATE** •

Adrienne R. Minerick
Michigan Technological University

• **MEMBERS** •

Pedro Arce
Tennessee Tech University

Taryn Bayles
University of Pittsburgh

Lorenz Biegler
Carnegie-Mellon University

David DiBiasio
Worcester Polytechnic Institute

Stephanie Farrell
Rowan University

Richard Felder
North Carolina State

Tamara Floyd-Smith
Tuskegee University

Marcel Liauw
Aachen Technical University

Matthew Liberatore
University of Toledo

Polly Piergiiovanni
Lafayette College

Uttandaraman Sundararaj
University of Calgary

Chemical Engineering Education

Volume 50 Number 3 Summer 2016

► **EDUCATOR**

- 161 Christine Grant of North Carolina State University
Tonya Peeples, Lisa Bullard, and Laura Thorp

► **DEPARTMENT**

- 154 Chemical Engineering at Purdue University
Arvind Varma and Cristina Farmus

► **LABORATORY**

- 202 Learning the Fundamentals of Kinetics and Reaction Engineering With the Catalytic Oxidation of Methane
Viktor J. Cybulskis, Andrew D. Smeltz, Yury Zvinevich, Rajamani Gounder, W. Nicholas Delgass, and Fabio H. Ribeiro

► **LIFELONG LEARNING**

- 193 A “Life Cycle” Approach to Education and Training For the Biopharmaceutical Industry
Gary L. Gilleskie, Baley Reeves, John H. van Zanten, John Balchunas, and Ruben G. Carbonell

► **CLASSROOM**

- 169 Solving L-L Extraction Problems With Excel Spreadsheet
Wittaya Teppaitoon
- 176 Evaluation of Student Reflection As a Route To Improve Oral Communication
Kenneth P. Mineart and Matthew E. Cooper

► **CLASS AND HOME PROBLEMS**

- 186 Identify-Solve-Broadcast Your Own Transport Phenomenon: Student-Created YouTube Videos to Foster Active Learning in Mass and Heat Transfer
Fei Wen and Eshita Khera

► **RANDOM THOUGHTS**

- 211 Why Students Fail Tests—2. Ineffective Teaching
Richard M. Felder and Rebecca Brent

► **OTHER CONTENTS**

- 175 Teaching Tips: Humanities and Social Relevance for Chemistry and Chemical Engineering Students—The Leonardo Project
John M. Prausnitz

CHEMICAL ENGINEERING EDUCATION [ISSN 0009-2479 (print); ISSN 2165-6428 (online)] is published quarterly by the Chemical Engineering Division, American Society for Engineering Education. Correspondence regarding editorial matter, circulation, and changes of address should be sent to CEE, 5200 NW 43rd St., Suite 102-239, Gainesville, FL 32606. Copyright © 2016 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 90 days of publication. Write for information on subscription costs and for back copy costs and availability. POSTMASTER: Send address changes to Chemical Engineering Education, 5200 NW 43rd St., Suite 102-239, Gainesville, FL 32606. Periodicals Postage Paid at Gainesville, Florida, and additional post offices (USPS 101900). www.che.ufl.edu/CEE