

Chemical Engineering Education

VOLUME XXIV

NUMBER 1

WINTER 1990

EDITORIAL AND BUSINESS ADDRESS:

Chemical Engineering Education
Department of Chemical Engineering
University of Florida
Gainesville, FL 32611

EDITOR: *Ray W. Fahien* (904) 392-0857

ASSOCIATE EDITOR: *T. J. Anderson*

CONSULTING EDITOR: *Mack Tyner*

MANAGING EDITOR: *Carole Yocum* (904) 392-0861

PUBLICATIONS BOARD

• CHAIRMAN •

E. Dendy Sloan, Jr.
Colorado School of Mines

• PAST CHAIRMEN •

Gary Poehlein
Georgia Institute of Technology

Lee C. Eagleton
Pennsylvania State University

• MEMBERS •

South

Richard M. Felder
North Carolina State University

Jack R. Hopper
Lamar University

Donald R. Paul
University of Texas

James Fair
University of Texas

Central

J. S. Dranoff
Northwestern University

West

Frederick H. Shair
California Institute of Technology

Alexis T. Bell
University of California, Berkeley

Northeast

Angelo J. Perna
New Jersey Institute of Technology

Stuart W. Churchill
University of Pennsylvania

Raymond Baddour
Massachusetts Institute of Technology

Northwest

Charles Sleicher
University of Washington

Canada

Leslie W. Shemilt
McMaster University

Library Representative

Thomas W. Weber
State University of New York

DEPARTMENT

2 University of Arizona,
G. K. Patterson

EDUCATOR

8 Edwin N. Lightfoot,
by his Colleagues

AWARD LECTURE

12 From Molecular Theory to Thermodynamic Models:
Part 1. Pure Fluids,
Stanley I. Sandler

CURRICULUM

20 Chemical Engineering in the Spectrum of Knowledge,
Davor P. Sutija, John M. Prausnitz

ELECTRONIC MATERIALS PROCESSING

26 Chemical Processing of Electrons and Holes,
Timothy J. Anderson

34 Thermal Oxidation of Silicon,
Dennis W. Hess

38 Working in the Integrated Circuit Industry,
Carol M. McConica

42 Chemical Vapor Deposition Epitaxy on Patternless and
Patterned Substrates,
Christos G. Takoudis

48 The Impedance Response of Semiconductors: An
Electrochemical Engineering Perspective,
Mark E. Orazem

CLASSROOM

56 Stochastic Modeling of Chemical Process Systems:
Part 1. Introduction,
R.O. Fox, L.T. Fan

RANDOM THOUGHTS

7 Meet Your Students: 2. Susan and Glenda,
Richard M. Felder

33 *Book Reviews*

33 *Books Received*

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. Advertising material may be sent directly to E.O. Painter Printing Co., PO Box 877, DeLeon Springs, FL 32130. Copyright © 1990 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 CEE, Chem. Engineering Dept., University of Florida, Gainesville, FL 32611.*