ON THE COVER: In "Green Chemistry Decision-Making in an Upper-Level Undergraduate Organic Laboratory" (DOI: 10.1021/ed400639a), Landon J. G. Edgar, Katherine J. Koroluk, Mehrnaz Golmakani, and Andrew P. Dicks describe a self-directed, independent synthesis experiment for a third-year undergraduate organic laboratory. Students are provided with the CAS numbers of starting and target compounds and devise a synthetic plan to be executed over two, 4.5 h laboratory periods. They consult the primary literature to develop and carry out an azlactone synthesis and analysis, incorporating green chemistry principles and techniques without detailed guidance from course instructors. This well-received laboratory requires students to plan, make independent decisions, and apply their knowledge and understanding of green chemistry.

Editorial

947
JUL
John W. Moore*

dx.doi.org/10.1021/ed5004383

Commentary

951
Book and Media Recommendations: Our Changing Planet and the Impact of Words
Cheryl Baldwin Frech*

dx.doi.org/10.1021/ed500334u

954
Book and Media Recommendations: A New Flavia de Luce Novel, The Simpsons Math, Gödelian Puzzles, and Research
Defending Public Education
Hal H. Harris*

dx.doi.org/10.1021/ed500329u

958
Book and Media Recommendations: Proven Facts and Speculative Fiction
Brian P. Coppola*

dx.doi.org/10.1021/ed500315q
961
Differences in General Cognitive Abilities and Domain-Specific Skills of Higher- and Lower-Achieving Students in Stoichiometry
Ozcan Gulacar, Ingo Eilks, and Charles R. Bowman

969
Investigating the Effect of Complexity Factors in Stoichiometry Problems Using Logistic Regression and Eye Tracking
Hui Tang, John Kirk, and Norbert J. Pienta

976
Factors Contributing to Problem-Solving Performance in First-Semester Organic Chemistry
Enrique J. Lopez, Richard J. Shavelson, Kiruthiga Nandagopal, Evan Szu, and John Penn

982
Using Web-Based Video as an Assessment Tool for Student Performance in Organic Chemistry
John Tierney, Matthew Bodek, Susan Fredricks, Elizabeth Dudkin, and Kurt Kistler

987
Organic Chemistry in Action! Developing an Intervention Program for Introductory Organic Chemistry To Improve Learners' Understanding, Interest, and Attitudes
Anne O' Dwyer and Peter Childs

994
The Impacts of an "Organic First" Chemistry Curriculum at a Liberal Arts College
Steven M. Malinak, Jennifer Logan Bayline, Patricia A. Brletic, Mark F. Harris, Robbie J. Iuliucci, Michael S. Leonard, Nobunaka Matsuno, Linda A. Pallack, Thomas W. Stringfield, and Deborah Polvani Sunderland

1001
Using Green Chemistry Principles As a Framework To Incorporate Research into the Organic Laboratory Curriculum
Nancy E. Lee, Rich Gurney, and Leonard Soltzberg

1009
Dynamical Approach to Multi-equilibria Problems for Mixtures of Acids and Their Conjugated Bases
Rainer E. Glaser, Marco A. Delarosa, Ahmed Olasukanmi Salau, and Carmen Chicone

1017
Diagnosis of Enzyme Inhibition Using Excel Solver: A Combined Dry and Wet Laboratory Exercise
Albino A. Dias, Paula A. Pinto, Irene Fraga, and Rui M. F. Bezerra
Activities

1037 A Simple, Small-Scale Lego Colorimeter with a Light-Emitting Diode (LED) Used as Detector
Jonas Asheim, Eivind V. Kvittingen, Lise Kvittingen,* and Richard Verley

Laboratory Experiments

1040 Green Chemistry Decision-Making in an Upper-Level Undergraduate Organic Laboratory
Landon J. G. Edgar, Katherine J. Koroluk, Mehrnaz Golmakani, and Andrew P. Dicks*

1044 Tangential Flow Filtration of Colloidal Silver Nanoparticles: A “Green” Laboratory Experiment for Chemistry and Engineering Students
Kevin M. Dorney, Joshua D. Baker, Michelle L. Edwards, Sushil R. Kanel, Matthew O’Malley, and Ioana E. Pavel Sizemore*

1050 Synthesis and Migratory-Insertion Reactivity of CpMo(CO)₃(CH₃): Small-Scale Organometallic Preparations Utilizing Modern Glovebox Techniques
Matthew T. Whited* and Gretchen E. Hofmeister

1054 Ligand-Free Suzuki–Miyaura Coupling Reactions Using an Inexpensive Aqueous Palladium Source: A Synthetic and Computational Exercise for the Undergraduate Organic Chemistry Laboratory
Nicholas J. Hill,* Matthew D. Bowman, Brian J. Esselman, Stephen D. Byron, Jordan Kreitinger, and Nicholas E. Leadbeater

1058 Computation of Chemical Shifts for Paramagnetic Molecules: A Laboratory Experiment for the Undergraduate Curriculum
Benjamin P. Pritchard, Scott Simpson, Eva Zurek,* and Jochen Autschbach*
Molecular Orbitals of NO, NO⁺, and NO⁻: A Computational Quantum Chemistry Experiment
Renato P. Orenha and Sérgio E. Galembeck

Undergraduate Analytical Chemistry Experiment: The Determination of Formation Constants for Acetate and Mono- and Dichloroacetate Salts of Primary, Secondary, and Tertiary Methyl- and Ethylamines
Ronald P. D'Amelia, Stephanie Chiang, Stephanie Pollut, and William F. Nirode

Collaborative Student Laboratory Exercise Using FT-IR Spectroscopy for the Kinetics Study of a Biotin Analogue
Jhaque Leong, Nathan C. Ackroyd, and Karen Ho

Rapid and Adaptable Measurement of Protein Thermal Stability by Differential Scanning Fluorimetry: Updating a Common Biochemical Laboratory Experiment
R. Jeremy Johnson, Christopher J. Savas, Zachary Kartje, and Geoffrey C. Hoops

Technology Reports

FluSpec: A Simulated Experiment in Fluorescence Spectroscopy
Stephen W. Bigger, Andrew S. Bigger, and Kenneth P. Ghiggino

Communications

Teaching Green and Sustainable Chemistry: A Revised One-Semester Course Based on Inspirations and Challenges
Anne E. Marteel-Parrish

Waterless Condensers for the Teaching Laboratory: An Adaptation of Traditional Glassware
Erich W. Baum, John J. Esteb, and Anne M. Wilson

Supporting Information available via online article