

Contents

Section I

Special Issue

Current Trends in Nanotechnology Education

Guest Editors

Wei-Fan Chen and Tony Jun Huang—The Pennsylvania State University, USA

Ahmad Ibrahim	991–992	Editorial
Wei-Fan Chen and Tony Jun Huang	993–994	Guest Editorial
Santosh Devasia and Jim L. Borgford-Parnell	995–1005	Integrating Nanopositioner Design Issues into an Existing Automatic Controls Course through Homework
Charles Xie and Hee-Sun Lee	1006–1018	A Visual Approach to Nanotechnology Education
Alejandra J. Magana, Sean P. Brophy and George M. Bodner	1019–1032	An Exploratory Study of Engineering and Science Students' Perceptions of nanoHUB.org Simulations
Alejandra J. Magana, Sean P. Brophy and George M. Bodner	1033–1045	Student Views of Engineering Professors Technological Pedagogical Content Knowledge for Integrating Computational Simulation Tools in Nanoscale Science and Engineering
Deepa Chari, Paul Irving, Robert Howard and Brian Bowe	1046–1055	Identifying Knowledge, Skill and Competence for Nanoscience and Nanotechnology Research: A Study of Postgraduate Researchers' Experiences
Eva Erdosne Toth and J. Kasi Jackson	1056–1067	Pedagogical Challenges for Nanotechnology Education: Getting Science and Engineering Students to Examine Societal and Ethical Issues
Beth Rajan Sockman, John Ristvey and Christine S. Jones	1068–1077	Student Understanding of Nanoscience through the Gecko's Surface to Surface Interactions
Tzy-Ling Chen, Horn-Jiunn Sheen, Hsiu-Ping Yueh, Feng-Kuang Chiang and Po-Wei Chang	1078–1087	Designing Nano-biotechnology Summer Camp with Experiential Learning Theory
Christopher Moraes	1088–1094	Pop Culture: A Soap Bubble-based Framework for Nanoeducation Outreach

Section II

Contributions in: Education Research, Outreach, Mobile Learning, Educational Technology, Mechatronics, Bioprocess, Problem Based Learning, Active Learning, Teaching Grant Proposal Writing, Fluid Mechanics, Mechanical Training, Civil Engineering, Simulation, Soft Skills, International Perspective

Cynthia J. Atman, Sheri D. Sheppard, Jennifer Turns, Robin S. Adams, Ken Yasuhara and Dennis Lund	1095–1108	The Center for the Advancement of Engineering Education: A Review of Results and Resources
Kerry L. Meyers, Victoria Goodrich and Jay Brockman	1109–1118	I2D2: Imagination, Innovation, Discovery, and Design
Kimiko Ryokai, Alice M. Agogino and Lora Oehlberg	1119–1126	Mobile Learning with the Engineering Pathway Digital Library
Zeljka Mihajlovic and Marko Cupic	1127–1140	Software Environment for Learning and Knowledge Assessment Based on Graphical Gadgets
Rajwardhan Patil, John Wagner, Todd Schweisinger, Randy Collins, Anand Gramopadhye and Moira Hanna	1141–1149	A Multi-Disciplinary Mechatronics Course with Assessment—Integrating Theory and Application through Laboratory Activities
Richard R. Williams, Stacy Klein-Gardner, Loren Limberis and Stephanie T. Sullivan	1150–1160	The Implementation of a Challenge-Based Curriculum into a Bioprocess Engineering Program
Alias Masek and Sulaiman Yamin	1161–1167	A Comparative Study of the Effect of Problem Based Learning and Traditional Learning Approaches on Students' Knowledge Acquisition
Ning Fang	1168–1176	A Student-Centered Active Learning Approach to Teaching Grant Proposal Writing in a Ph.D. in Engineering Education Program
Veda Duman and Sule Ergun	1177–1187	Fluid Mechanics Experimental Set-up Designed and Built by Graduate Student for Undergraduates

Miguel Torres Garcia, Fco José Jiménez-Espadafor Aguilar, Elisa Carvajal Trujillo and José Antonio Becerra Villanueva	1188–1198	Educational Software for Diesel Engine Simulation Performance and Parametric Analysis
M. L. Wang, Q. Y. Dai, Ray Y. Zhong and George Q. Huang	1199–1212	RFID-enabled Real-time Mechanical Workshop Training Center
Sami W. Tabsh, Akmal Abdelfatah, Mohammad Alhamaydeh and Sherif Yehia	1213–1220	Comparison of Civil Engineering Curricula in the Arab World
Hoda Baytiyeh	1221–1231	Disparity between College Preparation and Career Demands for Graduating Engineers
Abdul Ghani Kanesan Abdullah, Sim Hock Keat, Aziah Ismail, Mohamad Hanif Abdullah and Miduk Purba	1232–1242	Mismatch between Higher Education and Employment in Malaysian Electronic Industry: An Analysis of the Acquired and Required Competencies
Hossein Motahhari-Nejad, Nader G. Ghourchian, Parivash Jafari and Mahmood Yaghoubi	1243–1252	Global Approach for Reforming Engineering Education in Iran
	1253	Guide for Authors