

Contents

Editors:

Associate Professor Mike King
School of Development and
Learning
Faculty of Education
The University of Sydney
NSW 2006
m.king@edfac.usyd.edu.au

Associate Professor Mary Peat
Director
UniServe Science
The University of Sydney
NSW 2006
mary.peat@bio.usyd.edu.au

Dr Tom Hubble
School of Geosciences
Faculty of Science
The University of Sydney
NSW 2006
hubble@mail.usyd.edu.au

Physics

- The enlightenment of science education in the Western universities 1
Bing Teng, Qingdao University
Reflection on modern teaching theory and practice in physics 5
Li Yunfang, Qingdao Technology University
Improving the teaching and learning in *Modern Physics* with contemporary strategies 10
Yanfang Ding, East China Normal University
Application of student-centred strategies in teaching a university Physics course in Sichuan
University 15
Zhang Hong, Sichuan University

Chemistry

- Comparison of the chemistry practical work at The University of Sydney and Zhejiang
University 17
Qunfang Lei, Zhejiang University
Applying contemporary education strategies to motivate the students' interests in studying
Physical Chemistry and to develop their lifelong learning skills 23
Yuqiu Huo, Northeast University
What I observed, learnt and thought about tertiary education at The University of Sydney:
Comparing, thinking, and planning in science teaching and learning 27
Jian Wan, Central China Normal University
How to increase active learning in *Structural Chemistry* 33
Shuwei Xia, Ocean University of China

Information Technology and Computer Science

- The application of contemporary teaching approaches to teaching a course in *Java*
Programming Language 37
Ding Jihong, Jilin University
Applying methods of formative and summative assessment to problem-based learning in
computer courses 42
Feng Yin, Donghua University
Improving teaching in *Computer Programming* by adopting student-centred learning
strategies 46
Hu Xiaohui, Ocean University of China
The introduction of contemporary teaching approaches to improve student learning in
Fundamentals of C Programming 52
Jie Wu, Guangzhou University
Using student-centred teaching strategies to carry out bilingual teaching in a *Data Structure*
course 58
Lu Pengli, Lanzhou University of Technology
Applying a hybrid problem-based learning method to the teaching of computer
programming 63
Yakun Wu, Liaoning University
Exploring effective approaches in teaching *Principles of Compiler* 67
ZhaoHui Li, Guangzhou University
Student-centred pedagogy in *Computer Technology Application* course design 73
Zhiyun Chen, East China Normal University

Mathematics and Statistics

- Applications of problem-based learning in teaching *Numerical Analysis* 78
Liuxiao Guo, Southern Yangtze University
Establishing a Mathematics Learning Centre at Donghua University 82
Min Chen, Donghua University
Using formative assessment to improve teaching and learning in *Linear Algebra* 88
Xuyan Huang, Shanghai Institute of Technology
Some ideas on how to trigger students' interest in learning calculus 92
Zhisong Jiang, East China University of Science and Technology