

## SUBJECT INDEX, VOLUME 3, 2002

### 0. GENERAL ISSUES IN SCIENCE EDUCATION

- Technology and tragedy (Guest Editorial). *J.W. Moore*: (1) 3-4.
- Research and research utilization in chemical education. *R. Kempa*: (3) 327-343.

### 1. METHODS AND ISSUES OF TEACHING AND LEARNING

- An approach in supporting university chemistry teaching. *G. Sirhan & N. Reid*: (1) 65-75.
- Teaching chemistry progressively: From substances, to atoms and molecules, to electrons and nuclei. *P.G. Nelson*: (2) 215-228.
- Teachers' continuing learning of chemistry: Some implications for science teaching. *A. Goodwin*: (3) 345-359.

### 2. CONCEPTS

- Students' errors in solving numerical chemical-equilibrium problems. *M. Kousathana & G. Tsaparlis*: (1) 5-17.
- The most well-known rearrangements in organic chemistry at hand. *S. Moulay*: (1) 33-64.
- The learning and teaching of the concepts 'amount of substance' and 'mole'. A review of the literature. *Furió, R. Azcona, and Y.J. Guisasola*: (3) 277-292.
- Pre-service primary teachers' mental models of kinetic theory. *N. Taylor & R.K. Coll*: (3) 293-315.
- Teachers' continuing learning of chemistry: Some implications for science teaching. *A. Goodwin*: (3) 345-359.

#### 2a. STRUCTURAL CONCEPTS

- PREFACE. *G. Tsaparlis*: (2) 107-112.
- Describing reactivity with structural formulas, or when push comes to shove. *P. Laszlo*: (2) 113-118.
- Understanding delocalization and hyperconjugation in terms of (covalent and ionic) resonance structures. *P. Karafiloglou*: (2) 119-127.
- Quantum-chemical concepts: Are they suitable for secondary students? *G. Tsaparlis and G. Papaphotis*: (2) 129-144.
- Conceptualizing quanta - Illuminating the ground state of student understanding of atomic orbitals. *K.S. Taber*: (2) 145-158.
- Compounding quanta - Probing the frontiers of student understanding of molecular orbitals. *K.S. Taber*: (2) 159-173.
- Mental models in chemistry: Senior chemistry students' mental models of chemical bonding. *K. Coll and N. Taylor*: (2) 175-184.
- Structural units and chemical formulae. *H.-D. Barke and H. Wirbs*: (2) 185-200.
- Students' corpuscular conceptions in the context of chemical equilibrium and chemical kinetics. *J.H. Van Driel*: (2) 201-213.
- Teaching chemistry progressively: From substances, to atoms and molecules, to electrons and nuclei. *P.G. Nelson*: (2) 215-228.

- Nuclear magnetic resonance (NMR) spectroscopy: Basic principles and phenomena, and their applications to chemistry, biology and medicine. *I. P. Gerotheranasis, A. Troganis, V. Exarchou, and K. Barbarossou*: (2) 229-252.
- Classical and quantum chemical rate constants in condensed phases. *R. Kapral and S. Consta*: (2) 253-268.

### **3. CONCEPT TEACHING AND LEARNING**

- Teaching chemistry progressively: From substances, to atoms and molecules, to electrons and nuclei. *P.G. Nelson*: (2) 215-228.
- Student teachers' problems in teaching 'electrolysis' with a key demonstration. *M. Ahtee, T. Asunta & H. Palm*: (3) 317-326.

### **4. PROBLEM SOLVING AND OTHER HIGHER-ORDER COGNITIVE SKILLS (HOCS)**

- Students' errors in solving numerical chemical-equilibrium problems. *M. Kousathana & G. Tsaparlis*: (1) 5-17.

### **5. ASSESSMENT. -**

### **6. SCIENCE-TECHNOLOGY-ENVIRONMENT-SOCIETY (STES)**

- Teaching *Biodiesel*: A sociocritical and problem-oriented approach to chemistry teaching, and students' first views on it. *I. Eilks*: (1) 77-85.
- The use of the Arrhenius equation in the study of deterioration and of cooking of foods - Some scientific and pedagogic aspects. *A.L. Petrou, M. Roulia, & K. Kampouris*: (1) 87-97.

### **7. NET. -**

### **8. ATTITUDES**

- The development of the chemistry attitudes and experiences questionnaire (CAEQ). *R.K. Coll & J. Dalgety*: (1) 19-32.

### **9. CHEMICAL EDUCATION IN EUROPE: CURRICULA AND POLICIES**

- Securing the future of chemistry: A case study of developments in chemical education in Ireland. *P.E. Childs*: (3) 361-369.

### **10. TEACHER TRAINING**

- Student teachers' problems in teaching 'electrolysis' with a key demonstration. *M. Ahtee, T. Asunta & H. Palm*: (3) 317-326.

### **11. EXPERIMENTS AND PRACTICAL WORK. -**