APPENDIX 8

QUANTUM CHEMISTRY LITERATURE REVIEW

This Appendix contains the following bibliographies

HISTORY
Quantum Chemistry – History

TEACHING OF IDEAS AND CONCEPTS
Quantum Chemistry - Teaching Concepts
  Interpretations
  Bonding & Structure
  Atoms
  Orbitals
  Mathematics
  Specific

Quantum Chemistry - Lecture Demonstrations & Laboratory
  Demonstrations
  Laboratory

Quantum Chemistry - Computational Ideas
  Curriculum Changes & Delivery
  Software Programs
  Wave Function Software
  Atomic Structure & Orbital Programs
  Web

EDUCATION RESEARCH
Quantum Chemistry - Educational Research
A8.1 QUANTUM CHEMISTRY – HISTORY


A8.2 QUANTUM CHEMISTRY – TEACHING CONCEPTS

Interpretations


**Bonding & Structure**


Lenox, R.S., (1979) Electrons, Bonding, Orbitals, and Light – A unified approach to the teaching of structure and bonding in organic chemistry courses, *Journal of Chemical Education, 59*(5), 298-300


**Atoms**


Schmidt, H., (1998) Does the Periodic Table refer to chemical elements?, *School Science Review*, **80**(290), 71-74


Orbitals


Mathematics


Specific


Dence, J.B., (1983) Note on a Simple Derivation of Planck’s Formula from Special Relativity, *Journal of Chemical Education, 60*(8), 645-646


Gutschick, V.P., (1975) Quantum Chemistry – Easing the paradox of the preferred axis for angular momentum, *Journal of Chemical Education*, 52(7), 432-433


Scerri, E.R., (1998) How Good is the Quantum Mechanical Explanation of the Periodic System?, *Journal of Chemical Education*, 75(11), 1384-1385


Teixeira-Dias, J.J.C., (1983) How to Teach the Postulates of Quantum Mechanics without Enigma, *Journal of Chemical Education*, 60(11), 963-965


**A8.3 QUANTUM CHEMISTRY – LECTURE DEMONSTRATIONS & LABORATORY**

**Demonstrations**


Knox, K., (1990) The H2 + Cl2 Explosion as a Chemical Analogue of the Photoelectric Effect: A True Quantum Mechanical Demonstration, *Journal of Chemical Education*, 67(10), 897


Laboratory


A8.4 QUANTUM CHEMISTRY – COMPUTATIONAL IDEAS

Curriculum Changes & Delivery


Software Programs


Janis, F.T., Davis, D.D, (1973) UNIQUE – An Interactive Quantum Mechanical Program, *Journal of Chemical Education, 50*(9), 622


Wave Function Software


Rioux, F., (1997) Enriching Quantum Chemistry with Mathcad (for Macintosh), *Journal of Chemical Education, 74*(8), 1016


**Atomic Structure & Orbital Programs**


**Web**


**A8.5 QUANTUM CHEMISTRY – TEXT BOOK DISCUSSION**

**Book Reviews**


**A8.6 QUANTUM CHEMISTRY – EDUCATION RESEARCH**


APPENDIX 8 ............................................................................................................................................. 223

QUANTUM CHEMISTRY LITERATURE REVIEW .......................................................................................... 223
A8.1 QUANTUM CHEMISTRY – HISTORY ................................................................................................. 224
A8.2 QUANTUM CHEMISTRY – TEACHING CONCEPTS ........................................................................... 224
  Interpretations ........................................................................................................................................... 224
  Bonding & Structure ................................................................................................................................. 225
  Atoms ....................................................................................................................................................... 225
  Orbitals ..................................................................................................................................................... 226
  Mathematics ............................................................................................................................................. 226
  Specific .................................................................................................................................................... 227
A8.3 QUANTUM CHEMISTRY – LECTURE DEMONSTRATIONS & LABORATORY .................................... 229
  Demonstrations ......................................................................................................................................... 229
  Laboratory............................................................................................................................................... 230
A8.4 QUANTUM CHEMISTRY – COMPUTATIONAL IDEAS ................................................................. 230
  Curriculum Changes & Delivery ................................................................................................................ 230
  Software Programs ................................................................................................................................. 231
  Wave Function Software ......................................................................................................................... 231
  Atomic Structure & Orbital Programs ...................................................................................................... 232
  Web ......................................................................................................................................................... 233
A8.5 QUANTUM CHEMISTRY – TEXT BOOK DISCUSSION ...................................................................... 233
  Book Reviews .......................................................................................................................................... 233
A8.6 QUANTUM CHEMISTRY – EDUCATION RESEARCH ..................................................................... 233