Books Received

Quantum Systems in Chemistry and Physics. Volume 1: Basic Problems and Model Systems,Volume 2: Advanced Problems and Complex Systems, Granada, Spain (1997). Edited by Alfonso Hernández-Laguna (Estación Experimental del Zaidein, C.S.I.C., Granada, Spain), Jean Maruani (CNRS, Paris, France), Roy McWeeny (Università di Pisa, Italy) and Stephen Wilson (Rutherford Appleton Laboratory, Oxfordshire, UK). Kluwer (http://www.wkap.nl): Dordrecht. March 2000, 432 pp. NLG 345.00 / USD 182.00 / GBP 114.00. Hardbound Vol. 1, ISBN 0-7923-5969-0. 416 pp. NLG 335.00 / USD 178.00 / GBP 110.00. Hardbound Set of 2 volumes, ISBN 0-7923-5971-2

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These two volumes [1] are volumes 2 and 3 of the series *Progress in Theoretical Chemistry and Physics* [2,3]. They comprise forty papers coming from the most outstanding contributions to the Third European Quantum Systems in Chemistry and Physics Workshop held in Granada, Spain (1997). These books cover a very broad spectrum of scientific research work from quantum-mechanical many-body methods to important applications and computational developments, and from atoms and molecules to condensed matter.

The first volume is subtitled *Basic Problems and Model Systems*, and includes the following topics: density matrices and density functionals, electron correlation effects, relativistic formulations, valence theory, and nuclear motions.

The second volume is subtitled *Advanced Problems and Complex Systems* and covers the following topics: response theory, condensed matter, reactive collisions and chemical reactions, and computational chemistry and physics.

Contents: Preface. **1.** Density Matrices and Density Functionals. 3-Body Correlation Effects in Third Order Reduced Density Matrices; *C.Valdemoro, et al.* **2.** Electron Correlation Effects. Ab Initio Summation Over States/CI Singles for Static and Dynamic First Hyperpolarizabilities of Small

Molecules; *M. Spassova, et al.* Comparing (SC)²CAS-SDCI and Externally Corrected CCSD Methods; *G. Peris, J.P. Malrieu.* The Size-Consistent Self-Consistent SDCI Method for Excited States and Ionization Potentials; *J. Pitarch-Ruiz, et al.* Influence of Electron Correlation on the Electronic Structure of Superconducting Y-Ceramics; *I.G. Kaplan, et al.* **3.** Relativistic Formulations. Perspectives in Relativistic Thomas-Fermi Calculations for Atomic Systems; *I.Porras, A. Moya.* Expectation Values for Ground State Atoms from a Modified Thomas-Fermi-Diract Approach; *A. Moya, I. Porras.* Relativisitic oscillator strengths for excited-state transitions in halogen atoms. Regularities; *C. Lavin, et al.* Extension of the Relativistic Quantum Defect Orbital Method to the Tratment of Many-valence Electron Atoms. Atomic Transition in Ar II; *I. Martíin, et al.***4.** Valence Theory. **5.** Nuclear Motions. The Effect of the Pseudopotential on the Torsional Energy Levels of Hydrogen Peroxide and Deuterium Peroxide; *M.L. Senent,Y.G. Smeyers.* **6.** Response Theory. Duality in Two-ways Interferometers: The Symmetric Quanton-Detecton System; *J. Martínez-Linares, D.A. Harmin.* Atomic Resonances in External Field; *R. González-Ferez, W. Scheweizer.* **7.** Condensed Matter. Diffusion Monte Carlo Calculations of Quasibound States of Rare Gas-halogen Clusters: a Diabatic Approach; *G.García-Rizo, et al.* **8.** Reactive Collisions and Chemical reactions. Electronuclear Quantum Mechanics Beyond the Born-Oppenheimer Approximation. Towards a Quantum Electronic Theory of Chemical Reaction Mechanisms. **9.** Computational Chemistry and Physics. N-O and P-O Bond Nature in Hypervalent Compounds. Is Bader Analisys Basis Set and Geometry Independent? *J.A. Dobado, et al.* A Theoretical Study of the Radical Addition to the Xylenes; *V.-H.Uc, et al.* Theoretical Study of the Proton Affinities of Some Substituted Derivatives of Histamine and Homologous Compounds. Structure-Activity Relationships.

References and Notes

1. http://www.wkap.nl/book.htm/0-7923-5971-2.
2. Website http://www.wkap.nl/series.htm/PTCP.
3. Please contact Customer Services (services@wkap.nl) for set price information.