List of Publications and Theses
Richard M. Martin

January, 2013

Books

- Richard M. Martin, "Electronic Structure: Basic theory and practical methods," Cambridge University Press, 2004, Reprinted 2005, and 2008. Japanese translation in two volumes, 2010 and 2012.
- Richard M. Martin, Lucia Reining and David M. Ceperley, "Interacting Electrons," – in progress -- to be published by Cambridge University Press.

Theses Directed

- Beaudet, Todd D., 2010, "Quantum Monte Carlo Study of Hydrogen Storage Systems"
- Yu, M., 2010, "Energy density method for solids, surfaces, and interfaces."
- Vincent, Jordan D., 2006, "Quantum Monte Carlo calculations of the optical gaps of Ge nanoclusters"
- Das, Dyutiman, 2005, "Quantum Monte Carlo with a Stochastic Poisson Solver"
- Romero, Nichols, 2005, "Density Functional Study of Fullerene-Based Solids: Crystal Structure, Doping, and Electron-Phonon Interaction"
- Tsolakidis, Argyrios, 2003, "Optical response of finite and extended systems"
- Mattson, William David, 2003, "The complex behavior of nitrogen under pressure: ab initio simulation of the properties of structures and shock waves"
- Wilkens, Tim James, 2001, "Accurate treatments of Electronic Correlation: Phase Transitions in an Idealized 1D Ferroelectric and Modelling Experimental Quantum Dots"
- Souza, Ivo Nuno Saldanha Do Rosário E, 2000, "Theory of electronic polarization and localization in insulators with applications to solid hydrogen"
- Kim, Yong-Hoon , 2000, "Density-Functional Study of Molecules, Clusters, and Quantum Nanostructures: Developement of Nonlocal Exchange-Correlation Approximation"
- Rao, Vivek, 1998, "Wavelets and wavelet optimized-finite differences for electronic structure calculations"
- Kwon,Yongkyung, 1994, "A quantum Monte Carlo study of the two-dimensional electron gas"
- Natoli, Vincent Dominic, 1994, "A quantum Monte Carlo study of the high pressure phases of solid hydrogen"
- Grumbach, Matthew Philip, 1993, "First principles molecular dynamics simulation of carbon at high pressures and temperatures"
- Shirley, Eric Lawrence, 1991, "Quasiparticle calculations in atoms and many-body core-valence partitioning"

- Chetty, Nithayanathan, 1990, "First principles energy density and its applications to selected polar surfaces and interfaces"
- Van de Walle, Chris Gilbert, 1986 , "Theoretical studies of structure and band alignment at semiconductor interfaces", (Stanford University)

Publications

Papers in preparation:

- T. D. Beaudet, J. Kim and R. M. Martin, "Hydrogen adsorption on Ti complexes studies by Quantum Monte Carlo Simulations"

Papers in Journals

194. Y. Min, D. Trinkle and R. M.Martin, "Energy density in density functional theory: Application to crystalline defects and surfaces", Phys. Rev. B 83, 115113 (2011).
193. N. Chetty, R. M. Martin and S. Scandolo, "Material progress in Africa", Nature Physics 6, 1 (2010).
192. F. Lin, M. A. Morales, K. T. Delaney, C. Pierleoni, R. M. Martin, and D. M. Ceperley, "Electrical Conductivity of High-Pressure Liquid Hydrogen by Quantum Monte Carlo Methods," Phys. Rev. Lett. 103, 256401 (2009)
191. M. Holzmann, B. Bernu, V. Olevano, R. M. Martin, and D. M. Ceperley, "Renormalization factor and effective mass of the two-dimensional electron gas," Phys. Rev. B 79, 041308 (2009).
190. Z. S. Popović, S. Satpathy, and R. M. Martin, "Origin of the Two-Dimensional Electron Gas Carrier Density at the LaAlO3 on SrTiO3 Interface", Phys. Rev. Lett. 101, 256801 (2008).
189. T. D. Beaudet, M. Casula, J. Kim, S. Sorella and R. M. Martin, "Molecular hydrogen adsorbed on benzene: insights from a quantum Monte Carlo Study", J. Chem. Phys. (2008).
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187. N. Romero, J. Kim, and R. M. Martin, "Electronic Structures and Superconductivity of Endohedrally-Doped C_{28} Solids from First-principles", Phys. Rev. B **76**, 205405 (2007).
186. B. Lee, X. Cartoixa, N. Trivedi, R. M. Martin, "Disorder-enhanced spin polarization in diluted magnetic semiconductors, Phys. Rev. B **76**, 155208 (2007)
185. J. Vincent, J. Kim, and R. M. Martin, "Quantum Monte Carlo calculations of optical gaps of Ge Nanoclusters using Core-Polarization Potentials", Phys. Rev. B **75**, 045302 (2007)
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182. X. Luo and R. M. Martin, "Jahn-Teller distortion and ferromagnetism in the dilute magnetic semiconductors GaAs:Mn and cubic GaN:Mn", Phys. Rev. B **72**, 035212 (2005) [6 pages]
181. A. Tsolakidis and R. M. Martin, "Comparison of the optical response of hydrogen-passivated germanium and silicon clusters", Phys. Rev. B 71, 125319 (2005) [8 pages]

180. D. Sanchez-Portal, S. Riikonen, and R. M. Martin. Role of spin-orbit splitting and dynamical fluctuations in the Si(557)-Au surface. Phys. Rev. Lett. **93**, 146803-1-4 (2004).
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