



Dr. Daniel M. Martínez

Biographical Sketch:

Daniel received his B.S. in Chemical Engineering at the University of Rochester in western New York. He continued there to pursue a Ph.D., and after qualifying for entry into the program left for NASA's Goddard Space Flight Center in Maryland to conduct his graduate laboratory research. At Goddard he studied nucleation phenomenon, specifically vapor to particle conversion of metals in a gas evaporation condensation chamber. The goal of the work was to expand the database of metal and refractory condensation, which could then be applied to better understanding particle production from stellar outflows. At the end of his Ph.D. work, Daniel became active in a non-profit energy corporation, AHEAD Energy, whose mission is to increase energy access in the developing world. There he became interested in understanding energy use and impacts from the perspectives of both the developed and the developing worlds and worked as a postdoctoral fellow through AHEAD and the University of Rochester. Since joining USM in 2008, Daniel has continued to pursue research and teaching in sustainable development, energy policy, and renewable energy technologies.

Education:

Ph.D., Chemical Engineering, University of Rochester, Rochester, NY, 2007
M.S., Chemical Engineering, University of Rochester, Rochester, NY, 2002
B.S., Chemical Engineering, University of Rochester, Rochester, NY, 1999

Courses Taught at USM:

ESP 275 Sustainability and Global Energy Systems
CPD 602 Sustainable Communities

Research Interests:

Research interests include: global energy policy and planning; third world energy development; peak oil analysis; decentralized energy modeling; biogel engineering; nucleation science.

Representative Publications:

Ebenhack, B.W., and D.M. Martínez. 2009. Before the Peak: Impacts of oil shortages on the developing world. Chapter 7 in "From Curse to Blessing: Using Natural Resources to Fuel Development." International Social Science Journal Monograph Series. I. Khodeli, Editor. New Jersey: Wiley-Blackwell.

Ebenhack, B.W. and D.M. Martínez. 2008. What does sustainability mean to petroleum? Proceedings - SPE Annual Technical Conference and Exhibition 5, pp. 3589-3603.

Ebenhack, B.W., and D.M. Martínez. 2008. Old carbon vs. new carbon in climate change. Society of Petroleum Engineers - 9th International Conference on Health, Safety and Environment in Oil and Gas Exploration and Production 2008 - "In Search of Sustainable Excellence" 3, pp. 1179-1186.

Martínez, D.M., and B.W. Ebenhack. 2008. Understanding the role of energy consumption in human development through the use of saturation phenomena. Energy Policy 36 (4), pp. 1430-1435.

Martínez, D.M., F.T. Ferguson, R.H. Heist, and J.A. Nuth III. 2005. Experimental studies of the vapor phase nucleation of refractory compounds. VI. The condensation of sodium. J. Chem. Phys. 123 (5), pp. 1-6. 2

Heist, R.H., A. Bertelsmann, D. Martínez, and Y.F. Chan. 2003. Thermal diffusion cloud chamber: New criteria for proper operation. Atm. Res. 65 (3-4), pp. 189-209.

Martínez, D.M., F.T. Ferguson, R.H. Heist, and J.A. Nuth III. 2001. Application of scaled nucleation theory to metallic vapor condensation. J. Chem. Phys. 115 (1), pp. 310-316.

Email: daniel.m.martinez@maine.edu