

Physics

ALCÁNTARA ORTIGOZA



Research Fields:

- Electro- and heterogeneous catalysis: Materials rational design
- Chemical and thermodynamic stability of surfaces and nanoparticles
- Magnetic properties of nanoparticles and their dipolar interactions
- Homo- and heteroepitaxy
- Topological Insulators

Collaborations:

University of Central Florida:

- Prof. Talat S. Rahman
- Prof. Sergey Stolbov

Karlsruher Institut für Technologie:

- Dr. Klaus Peter Bohnen
- Dr. Rolf Heid

Max-Planck-Institute, Solid State Research:

- Dr. Christian Ast

Marisol Alcántara Ortigoza, Ph.D

Assistant Professor, Physics

College of Arts and Sciences

Email: malcantaraortigoza@tuskegee.edu

Website: <http://marisolalcantaraortigoza.info/>

Office Phone: 334-724-4206

Office Address: Chappie James, Rm. 106

Biographical Sketch:

Professor M. Alcántara Ortigoza received her Ph.D in Theoretical and Computational Condensed Matter from Kansas State University. She has been a Research Associate, PhD co-advisor, and Studio-Mode Physics Instructor at University of Central Florida, as well as a Visiting Scientist at the Karlsruhe Institut für Technologie (Germany) and the Donostia International Physics Center (Spain). She works on theoretical and computational physics and chemistry of surfaces and nanomaterials. One of her current focus areas is that of establishing and solving the multifactor problem that presents itself when designing synergistic complex and/or nanostructured materials, with applications in clean, inexpensive, and sustainable energy conversion. She is also working on new and simple avenues for mapping the shape, ordering and thermal properties of nanoparticles to their markedly discrete vibrational density of states.

Representative Publications:

1. **M. Alcántara Ortigoza** and S. Stolbov; “*Lattice perturbation: The missing key to understand gold "nobleness"*”; J. Chem. Phys. **142**, 194705 (2015).
2. **M. Alcántara Ortigoza**, et al.; “*Ab initio lattice dynamics and electron-phonon coupling of Bi(111)*”; Phys. Rev. B **90**, 195438 (2014).
3. **M. Alcántara Ortigoza**, et al.; “*Anomalously Soft and Stiff Modes of Transition-Metal Nanoparticles*”; J. Phys. Chem. C, **118**, 10335 (2014).
4. S. Stolbov and **M. Alcántara Ortigoza**; “*Rational Design of Competitive Electrocatalysts for Hydrogen Fuel Cells*”, J. Phys. Chem. Letts. **3**, 463 (2012).
5. **M. Alcántara Ortigoza**, et al., “*Nature of the Binding of a c(2x2)-CO Overlayer on Ag(001) and Surface Mediated Intermolecular Coupling*”; J. Phys. Chem. A, **115** (25), 7291 (2011).