

**Name:** Miguel Fuentes-Cabrera  
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**Position Title:** R&D Staff  
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**Education:**

University of La Laguna, Spain, 1993 Physics  
University of La Laguna, Spain, Ph.D. 1998 Physics

**Professional Experience:**

2014-present Joint Faculty, Bredesen Center for Interdisciplinary Research and Graduate Education, University of Tennessee  
2010-present Adjunct Assistant Professor, Department of Materials Sciences and Engineering, University of Tennessee  
2009-present R&D Staff, Computer Science and Mathematics Division, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory  
2006–2009 Research Scientist I, Joint Institute for Computational Sciences, Computer Science and Mathematics Division, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory  
2002–2006 Postdoctoral Research Associate, Oak Ridge National Laboratory  
2001–2002 Postdoctoral Research Associate, North Carolina State University.  
1999–2001 Fulbright Postdoctoral Research Associate, Arizona State University

**Professional Activities, Honors, Awards:**

Fulbright postdoc, 1999-2001  
Active in scientific outreach to K-12 students

**Professional Memberships:**

Materials Research Society, American Chemical Society, American Society for Microbiology

**Selected Peer-Reviewed Publications: (total ~ 63)**

Wang, J.; Bonnese, P.; Rangel, E.; Vallejo, E.; Sanchez-Castillo, A.; Cleaves III, J.; Baddorf, A. P.; Sumpter, B. G.; Minghu, P.; Maksymovych, P.; Fuentes-Cabrera, M., “Supramolecular polymerization of a prebiotic nucleoside provides insights into the creation of sequence-controlled polymers”, *Sci. Rep.* **6**, 18891 (2016)  
Jesse, S.; He, Q.; Lupini, A. R.; Leonard, D. N.; Oxley, M. P.; Ovchinnikov, O.; Unocic, R. R.; Tselev, A.; Fuentes-Cabrera, M.; Sumpter, B. G.; Pennycook, S. J.; Kalinin, S. V.; Borisevich, A. Y., Atomic Level Sculpting of Crystalline Oxides: Toward Bulk Nanofabrication with Single Atomic Plane Precision Small, **11**, 5895 (2015)  
Horne, J. E.; Lavrik, N. V.; Terrones, H.; Fuentes-Cabrera, M., “Extrapolating Dynamic Leidenfrost Principles to Metallic Nanodroplets on Asymmetrically Textured Surfaces”, *Sci. Rep.* **5**, 11769 (2015)  
Boreyko, J. B.; Srijanto, B. R. Nguyen, T. D. Vega, C.; Fuentes-Cabrera, M.; Collier, C. P., “Dynamic Defrosting on Nanostructure Superhydrophobic Surfaces”, *Langmuir*, **29**, 9516 (2013)  
Brancolini, G.; Migliore, A.; Corni, S.; Fuentes-Cabrera, M.; Luque, F. J.; Di Felice, R. “Dynamical Treatment of Charge Transfer through Duplex Nucleic Acids Containing Modified Adenines”, *ACS Nano* **7**, 9396 (2013).  
Li, Q.; Owens, J. R.; Han, C. B.; Sumpter, B. G.; Lu, W. C.; Bernholc, J.; Meunier, V.; Maksymovych, P.; Fuentes-Cabrera, M.; Pan, M. “Self-organized and Cu-Coordinated Surface Linear Polymerization”, *Sci. Rep.* **3**, 2102 (2013).  
Campos-Delgado, J.; Baptista, D. L.; Fuentes-Cabrera, M.; Sumpter, B. G.; Meunier, V.; Terrones, H.; Kim, Y. A.; Muramatsu, H.; Hayashi, T.; Endo, M.; Terrones, M.; Achete, C. A., “Iron Particle Nanodrilling of Few Layer Graphene at Low Electron Beam Accelerating Voltages”, *Part. Part. Syst. Char.* **30**, 76 (2013)  
Li, Q.; Han, C.; Fuentes-Cabrera, M.; Terrones, H.; Sumpter, B.; Lu, W.; Bernholc, J.; Yi, J.; Gai, Z.; Baddorf, A. P.; Maksymovych, P.; Pan, M., “Electronic Control Over Attachment and Self-Assembly of Alkyne Groups on Gold,” *ACS Nano*, **6**, 9267 (2012).  
Fowlkes, J.; Horton, S.; Fuentes-Cabrera, M.; Rack, P.D., “Signatures of the Rayleigh-Plateau Instability Revealed by Imposing Synthetic Perturbations on Nanometer-Sized Liquid Metals on Substrates”, *Angew. Chem. Int. Ed.* **51**, 8768 (2012)

Li, Q.; Han, C. B.; Horton, S. R.; Fuentes-Cabrera, M.; Sumpter, B. G.; Lu, W. C.; Bernholc, J.; Maksymovych, P.; Pan, M., "Supramolecular Self-assembly of  $\pi$ -Conjugated Hydrocarbons via 2D Cooperative CH/ $\pi$  Interaction", *ACS Nano* **6**, 566 (2012).

**Collaborators (previous 4 years):**

H. Terrones, Rensselaer Polytechnic Institute  
J. Bernholc, North Carolina State University  
W. Lu, North Carolina State University  
V. Meunier, Rensselaer Polytechnic Institute  
E. Vallejo, Universidad Autónoma del Estado de Hidalgo, México  
A. Sanchez-Castillo, Universidad Autónoma del Estado de Hidalgo, México

E. Rangel, Universidad Autónoma del Estado de Hidalgo, México  
Lou Kondic, New Jersey Institute of Technology  
G. Brancolini, CNR Inst Nanosci, Italy  
R. Di Felice, University of Southern California  
H. J. Cleaves III, Tokyo Institute of Technology, Japan,  
J. Luque, Universitat de Barcelona, Spain

**Graduate and Postdoctoral Advisors:**

Graduate Advisor: Prof. Alfonso Muñoz-González (University of La Laguna)  
Postdoc Advisors: Otto F. Sankey (Arizona State University); Celeste Sagui (North Carolina State University); Don Nicholson and Jack C. Wells (ORNL)

**Students Advised (previous 5-years, Science Undergraduate Laboratory Internships program):**

Joseph Horton, Rensselaer Polytechnic Institute  
Kirsten Brown, Mercer University  
Gary Vestal, Clemson University  
Richard Dotktycz, University of Michigan  
John David Anderson, University of Tennessee