

Wilfredo Otaño

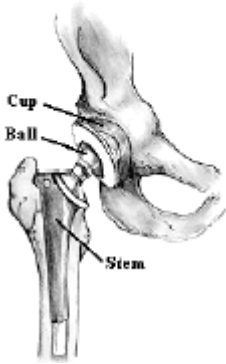
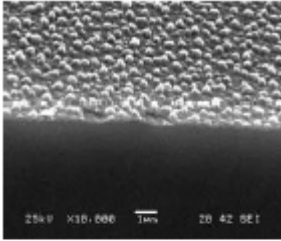
Nanotechnology Scientist

University of Puerto Rico, Cayey Campus

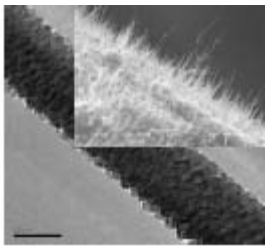


Biography

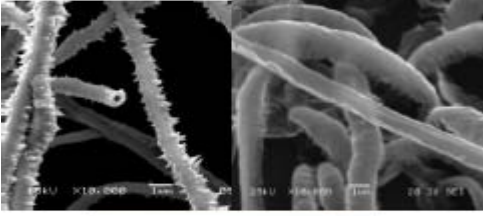
Otaño is a Full Professor in the [University of Puerto Rico, Cayey Campus](#) where he has been studying materials for more than twelve years. He has a master's degree in Physics from the University of Puerto Rico and a doctoral degree in Materials from the [Pennsylvania State University](#). Otaño convened a group of colleagues, including collaborators from the [University of Pennsylvania](#) in the United States and the [University of Granada](#) in Spain, to study the formation of materials with important biomedical, mechanical and electronic properties. In a research sponsored by the [National Institutes of Health](#), this team is testing biomedical coatings to be used in implants, e.g. in the stem of a hip implant, to increase their longevity. In another project sponsored by the [National Science Foundation](#), they are working with different metal oxides that are synthesized with shapes of nanowires to optimize their sensing capabilities or their electronic properties. A third project is studying how to control palladium nanostructures to improve their properties. This study demonstrates how very thin nanoshells to be used in sensitive, fast response hydrogen sensors, nanoribbons can be used as catalytic surfaces for chemical reactions, and nanothorns for electron field emitters in flat panel display applications. This last project is sponsored by [NASA](#) and the National Science Foundation. All these projects will use the facilities and the human enterprise of the Institute for Functional Nanomaterials (IFN) and its strategic partners to be successful in developing their potential commercialization.



Calcium phosphate coatings with nanograins for biomedical implant applications.



Metal oxide nanowires to be used as sensors and semiconductors.



Palladium nanostructures: the nanoshells are being tested for sensors and catalytic applications, and the nanothorns for electron emission to be used in flat panel displays.

Teams

[Educational Team](#), [Cluster II: Functional Nanostructures at the Interface](#), [Cluster III: Multifunctional Nanostructures](#)

Phone

+1-787-738-2161 ext. 3236

Fax

+1-787-263-1945

E-mail

wotano@cayey.upr.edu

Education

- Ph.D. in Materials, [Pennsylvania State University](#) (1998)
- M.Sc. in Physics, University of Puerto Rico

Appointments

2003– present Professor, University of Puerto Rico at Cayey, Cayey, Puerto Rico, Puerto Rico

Publications

1. G. Morell, C. Ortiz, W. Otaño, V. M. Pantojas, A. Rivera, D. Rodríguez-Vindas, and J. J. Santiago-Avilés, "Synthesis of palladium with different nanoscale structures by sputtering deposition onto fiber templates", *Journal of Nanophotonics*, 2, 021925 (2008)

Grants

1. F. M. Aliev, C. R. Cabrera, L. F. Fonseca, K. H. Griebenow, A. J. Hernández, Y. Ishikawa, R. S. Katiyar, M. M. Martínez, A. R. Mayol, G. Morell, W. Otaño, R. G. Raptis, and B. R. Weiner. Center for Advanced Nanoscale Materials (CANM) NASA University Research, National Aeronautics and Space Administration, URC, 5 years, October 2008, Multiple PIs, Approved, \$6,000,000.
2. O. Auciello, S. Bader, D. Bonnell, S. Desu, L. F. Fonseca, M. Gómez, S. Hong, Y. Ishikawa, R. S. Katiyar, V. Makarov, A. R. Mayol, G. Morell, W. Otaño, R. Palai, O. J. Perales, A. Petford-Long, R. Ramesh, A. Rastogi, R. Thomas, and M. S. Tomar. Development and Understanding of Multifunctional Nanostructures for Spintronics and Magnetoelectrics Applications, United States Department of Energy, EPSCoR, 3 years, September 2008, Multiple PIs, Approved, \$2,245,000.

Presentations

1. M. Arias, C. Ortiz, W. Otaño, V. M. Pantojas, D. Rodríguez-Vindas, and J. J. Santiago-Avilés (July 2008) "Control of Morphology and Crystalline Parameters in Palladium Nanostructures" in International Conference on Nanoscience and Technology.
2. C. Ortiz, W. Otaño, V. M. Pantojas, A. Rivera, and J. J. Santiago (July 2008) "Fabrication of Different Nanostructures Combining Electrospinning and Sputtering Techniques" in International Conference on Solid Films and Surfaces.