

María M. Martínez-Iñesta

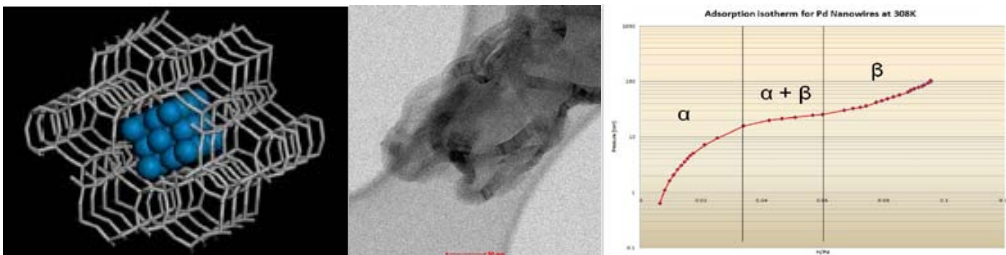
Nanoengineer

University of Puerto Rico, Mayagüez Campus



Biography

Prof. Martínez-Iñesta received her bachelor degree in Chemical Engineering at the [University of Puerto Rico, Mayagüez Campus](#) in 2000. After that she pursued her doctorate degree in Chemical Engineering at the [University of Delaware](#). In 2005 she decided to rejoin with her Alma Mater as Assistant Professor in Chemical Engineering where she is at the present time. In her short time there she has established a laboratory dedicated 1) to the experimental study of the structural changes undergoing during synthesis of supported metal catalysts using High Energy X-ray Scattering and 2) to the development of synthesis methods of metal nanoparticles and nanowires using zeolites as templates using experiments and simulations and its characterization for gas sensing applications.



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Education

- B.Sc. in Chemical Engineering, [University of Puerto Rico, Mayagüez Campus](#) (2000)
- Ph.D. in [Chemical Engineering, University of Delaware](#)

Appointments

2005–present Assistant Professor, UPR-Mayaguez, Mayaguez, Puerto Rico, Puerto Rico

Publications

1. J. A. Huertas-Miranda and M. M. Martínez-Iñesta, Monte Carlo Studies of the Effect of Temperature, Si/Al and metal loading on the Templated Synthesis of Pt nanowires in MOR- type zeolites, *Nanotech*, **2**, p. 633-636, 2010
2. J. Huertas, [M. M. Martinez-Inesta](#), Si/Al and Metal Loading Effects on the Templated Synthesis of Ni Nanowires in CAN and MOR Zeolite Frameworks, *Molecular Simulation*, **36** p.1004-1012, 2010
3. L. Quinones, J. Grazul, [M.M.Martinez-Inesta](#), Synthesis of platinum nanostructures in zeolite mordenite using a solid-state reduction method, *Materials Letters* **63** p. 2684–2686, 2009
4. J. Huertas, [M. M. Martinez-Inesta](#), Monte Carlo Simulation Studies for the Templated Synthesis of Ni Nanowires in Zeolites, *Sensors & Transducers*, **7** p.116-124, 2009
5. J. Huertas, [M.M. Martinez-Inesta](#), Molecular Simulation Studies for the Synthesis of Ni Nanowires in Zeolite Cancrinite, *Nanotech*, **3** (5) p.280-283,2009
6. [Martinez-Inesta, M.M.](#) and R.F. Lobo, "Pair Distribution Function Study of Platinum Nanoparticles in Zeolite Beta". *Journal of Physical Chemistry C*, **111** (24): p.8573-8579, 2007
7. [Martinez-Inesta, M.M.](#) and R.F. Lobo, "Investigation of the Negative Thermal Expansion Mechanism of Zeolite Chabazite Using the Pair Distribution Function Method". *Journal of Physical Chemistry B*, **109** (19):p.9389-9396, 2005
8. [Martinez-Inesta, M.M.](#), I. Peral, T. Proffen, and R.F. Lobo, "A pair distribution function analysis of zeolite beta". *Microporous and Mesoporous Materials*. **77**(1): p. 55-66, 2005
9. van Koningsveld, H., R.F. Lobo, and [M.M. Martinez-Inesta](#), "A reinvestigation of the disorder in zeolite UTD-1", in *Recent Advances in the Science and Technology of Zeolites and Related Materials, Pts A - C*. 2004. p. 1180-1187.
10. [Martinez-Inesta, M.M.](#) and R.F. Lobo, "Pair Distribution Function as a Probe for Zeolite Structures". *Proceedings of Materials Research Society Symposium*. **840**: p. Q1.4, 2004

Grants

- 1) "PR-EPSCoR Phase V Faculty Start-Up Funds: Synthesis and Characterization of Templated Pt Nanowires Using Zeolites" (PI) Awarded by NSF EPSCoR, \$245,546 June 1,2006 to May 31,2008
- 2) "MRI: Acquisition of an XRD Unit with in Situ DSC and Reaction Capabilities for Nanotechnology and Materials Science Research at the UPRM" (co-PI) Awarded by NSF, \$354,856 July 1,2006 to June 30,2008
- 3) "Seed Money: Synthesis of Templated Nanowires" (PI) Awarded by UPRM Department of Engineering, \$50,000 August 1, 2005 to July 31, 2008
- 4) "Synergistic Partnership for Research and Education on Nanostructured and Functional Materials" (Senior Personnel) Awarded by NSF, \$2,700,000 April 1, 2004 to March 31,2009
- 5) "REU: Research Experience for Undergraduates and Teachers in Functional and Nanostructures Materials at the University of Puerto Rico-Mayaguez" (Senior Personnel) Awarded by NSF, \$249,000 August 1, 2007 to July 31, 2010
- 6) "Material Characterization of Sodium Carboxymethylcellulose" (Co-PI) Awarded by OMJ Pharmaceuticals, Inc, \$10,000, June 1,2008 to July 31,2008
- 7) "NASA: Center for Nanoscale Materials NASA University Research Center (URC)" (Co-PI) Awarded by NASA, June 1,2009 to May 31,2014-\$6,500,000
- 8) "ACS PRF ND Proposal: Development of a Scattering Characterization Technique to Study the Nucleation and Growth Mechanism of Supported Metals" (PI) Awarded by ACS PR Fund June 30,2009 to August 31,2011,\$100,000

Presentations

1. November 15, 2010-L. Fonseca, R. Katiyar, G. Morell, W. Otano, M.M. Martinez-Inesta "NASA-CANM Non Carbon Based Sensors Progress" NASA External Advisory Board Meeting
2. November 11, 2010- L. Quinones, H. Mendez M. Martinez-Inesta, "Synthesis of Platinum and palladium Nanowires using Zeolites as templates" 2010 AIChE Annual Meeting
3. November 10, 2010 –L. Gamez, M. Martinez-Inesta, "Pair Distribution Function to Study the Nucleation and Growth of Metal Nanostructures in Zeolites" 2010 AIChE Annual Meeting
4. November 8, 2010 –J. Huertas, M. Martinez-Inesta, "Molecular Simulation Studies for the Synthesis of Metal Nanostructures in Zeolites" 2010 AIChE Annual Meeting
5. February 3, 2010-L. Fonseca, R. Katiyar, G. Morell, W. Otano, M.M. Martinez-Inesta "NASA-CANM Non Carbon Based Sensors Progress" NASA Technical Review Meeting
6. March 13, 2010 - Nichole Lugo,M.M. Martinez-Inesta "Synthesis of nanowires by solid-state ion exchange and solid reduction"- 30th Puerto Rico Interdisciplinary Scientific Meeting
7. November 12, 2009 – L. Quinones, J. Huertas, M.M. Martinez-Inesta "Investigation of Zeolite Mordenite as a Template for the Formation of Nanowires" AIChE Annual Meeting
8. July 22, 2009- F. Delgado, M.M. Martinez-Inesta, G. Hunter, NASA and University of Puerto Rico Collaboration Related to the UPR Center for Advanced Nano Materials 2009, HBCU/OMSI Aerospace Collaboration Symposium 2009
9. March 2009 - J. Huertas, M.M. Martinez-Inesta, Molecular Simulation Studies for the Synthesis of Ni Nanowires in Zeolite Cancrinite, Nanotech
10. December 3,2008- Maria M. Martinez-Inesta-"Synthesis and Characterization of Ni nanowires Using Zeolites as Templates"-2008 Materials Research Society Fall Meeting

11. July 30,2008-Maria M. Martinez-Inesta-“Synthesis and Characterization of Metallic nanowires Using Zeolites as Templates”-28th Latin American Chemical Congress
12. April 11, 2008- Javier Huertas-“Monte Carlo Simulations for the Adsorption of Precursors Inside Zeolite Pores during the Synthesis of Metal Nanowires”-AIChE Meeting-New Orleans
13. April 11,2008- Angel Santos-“Synthesis of Nanostructures in Microporous Materials”-AIChE Meeting-New Orleans
14. March 8, 2008- Pablo Duarte-“ Denitrification of Cancrinite for the Templated Synthesis of Puerto Rico, Arecibo Campus
15. March 10, 2007, Pablo Duarte- “Denitrification of Cancrinite for the Templated Synthesis of Nanostructures”- 27th Puerto Rico Interdisciplinary Scientific Meeting (PRISM 2007)- Inter American University Bayamon Campus, Puerto Rico
16. November 3, 2006 – Prof. Maria Martinez-Inesta – “Zeolite Structural Characterization Using the Pair Distribution Function” – XIII Chemical Engineering Symposium, Dorado, P.R.