

Francisco Martin-Martinez, Ph.D.

Research Scientist, Civil and Environmental Engineering
Massachusetts Institute of Technology, 77 Massachusetts Ave. 1-178, Cambridge, MA 02139, USA
Phone: 617-258-8070, fmartinm@MIT.EDU, <http://web.mit.edu/fmartinm/www/>

Professional Preparation

Massachusetts Institute of Technology	Civil and Environmental Engineering	Postdoctoral Associate 2014-2016
North Carolina A&T State University	Civil and Environmental Engineering	Postdoctoral Associate 2014-2015
Vrije Unviversiteit Brussel, Belgium	Chemistry	Postdoctoral Associate 2011-2014
University of Granada, Spain	Chemistry	PhD, 2011
University of Granada, Spain	Chemical Engineering	M.S. 2005

Principal Research Interests: Bio-inspired materials, multiscale modeling, nanotechnology computational chemistry, biomass, hydrothermal liquefaction, 3D printing.

Key Appointments

Mar 2016- Research Scientist, MIT
May 2016- Vice-president, Association of Spanish Scientists in the USA (ECUSA)
2014-2016: Postdoctoral Associate, MIT
2014-2015: Postdoctoral Associate, North Carolina A&T State University
2011-2014: Postdoctoral Associate, Vrije Universiteit Brussel, Belgium
2008-2012: President of the Spanish Federation of Chemical Engineers (FEIQ)
2009: Visiting Scholar, University of Hamburg, Germany
2005-2011: Research Assistant, Department of Organic Chemistry, University of Granada, Spain

Key Publications (total # peer-reviewed publications: 15+, H-index=8 (ISI), H-index=8 (Google Scholar); i10 index=8; 150+ citations); 30+ invited/keynote/plenary talks across the world

1. M. Parambath, Q. S. Hanley, F.J. Martin-Martinez, T. Giesa, M.J. Buehler, C.C. Perry. "The nature of the silicophilic fluorescence of PDMPO", *Phys. Chem. Chem. Phys.*, 18, 5938, 2016
2. F.J. Martin-Martinez, E.H. Fini, M.J. Buehler. "Molecular asphaltene models based on Clar sextet theory", *RSC Advances* 5, 753, 2015
3. M. Alonso, T. Woller, F.J. Martin-Martinez, J. Contreras-García, P. Geerlings, F. De Proft. "Understanding the fundamental role of π/π , σ/σ and σ/π dispersion interactions in shaping carbon-based materials", *Chem. Eur. J.* 20, 4931, 2014 (COVER article and COVER Profile)
4. S. Pavletta, G. Absillis, F. De Proft, F.J. Martin-Martinez, R. Willem, T. Parac-Vogt. "Integrating 31P DOSY NMR Spectroscopy and Molecular Mechanics as a Powerful Tool for Unraveling the Chemical Structures of Polyoxomolybdate Based Amphiphilic Nano-Hybrids in Aqueous Solutions", *Chem. Eur. J.*, 20, 5258, 2014 (BACK COVER article)
5. E. Tylianakis, G. Dimitrakakis, F.J. Martin-Martinez, S. Melchor, J.A. Dobado, G. Froudakis. "Super Diamond: A Tetrahedral Nanoporous Architecture of Carbon Nanotubes for Hydrogen Storage", *Int. J. Hydrogen Energ.*, 39, 9825, 2014
6. F.J. Martin-Martinez, S. Fias, G. Van Lier, F; De Proft, P. Geerlings. "Tuning aromaticity patterns and electronic properties of armchair graphene nanoribbons with chemical edge functionalization", *Phys. Chem. Chem. Phys.* 15, 12637, 2013
7. F.J. Martin-Martinez, S. Fias, G. Van Lier, F; De Proft, P. Geerlings. "Electronic structure and aromaticity of graphene nanoribbons", *Chem. Eur. J.*, 18, 6183, 2012 (COVER article)

8. S. Melchor, F.J. Martin-Martinez, J.A. Dobado. "CoNTub v2.0 - algorithm for constructing C3-symmetric models of three-nanotube junctions", *J. Chem. Inf. Model.*, 51, 1492, 2011
9. B. Ritz, H. Heller, A. Myalitsin, A. Kornowski, F.J. Martin-Martinez, S. Melchor, J.A. Dobado, B. H. Juarez, H. Weller, C. Klinke. "Reversible attachment of platinum alloy nanoparticles to non-functionalized carbon nanotubes", *ACS Nano*, 4, 2438, 2010
10. F.J. Martin-Martinez, S. Melchor, J.A. Dobado. "Clar-kekulé structuring in armchair carbon nanotubes", *Org. Lett.*, 10, 1991, 2008

Books and book chapters

1. F. G. Calvo-Flores, J. A. Dobado, J. I. García, F. J. Martin-Martinez "Lignin and Lignans as Renewable Raw Materials: Chemistry, Technology and Applications". Wiley, 2015. ISBN: 978-1-118-59786-6.
2. S. Fias, F. J. Martin-Martinez, G. Van Lier, F. De Proft, P. Geerlings, "Inducing aromaticity patterns and tuning the electronic transport of graphene nanoribbons via edge design." *Nanotech.*, 1, 29-32, (2014), Edited by M. Laudon, B. Romanowicz. ISBN: 978-1-4822-5823-3.

Service and Leadership

Editorial Activities (selection)

- Review Editor, *Frontiers in Chemistry (Inorganic Chemistry)*

Committees and service (selection)

- Vice-president of the Association of Spanish Scientists in the USA (ECUSA) 2016-; Secretary of Spanish Scientists in USA - Boston (ECUSA – Boston) 2014 – 2016; President of The Spanish Federation of Chemical Engineers (FEIQ) 2008 – 2012; Chairman of the 13rd National Congress of Chemical Engineering. Madrid, Spain, 2010; President of Jury 1st RESPONSIBLE CARE Award to the Final Design Project in Chemical Engineering, 2010; President of the scientific committee of the 11th National Congress of Chemical Engineering. Granada, Spain, 2008; Vice-President of Association of Chemical Engineers of Granada (AGREIQ), 2003 – 2005; Member of Local Organizing Committee 4th European Congress of Chemical Engineering. Granada, Spain, 2003.

Outreach and Broader Impact: Broad interest in public outreach; research advisor for undergraduate and high school programs

Additional Education

Agriculture, innovation, and the environment, MIT, 2016; Multi-scale materials design, MIT, 2015; MSSC2013: Ab-Initio Modeling in Solid State Chemistry, Imperial College London, UK, 2013; SIESTA electronic structure calculations code - Catalonia's Supercomputing Centre, Spain, 2009; 5th Theoretical Chemistry School - University of Balears Islands, Spain, 2005.

Teaching and Education

Chemistry Instructor Interphase EDGE MIT program, 2015-; EIC Education Summer Program, 2016; Instructor of Organic Chemistry Laboratory Lectures, 2nd year of BSc in Chemical Engineering. University of Granada 2008-2010. Mentor in the International Mentorship Program (IMP), 2015-

Major Honors and Awards

Nomination for the "Andalusian of the Future" Award, 2015; Short Term Scientific Mission Grand from COST MP0901- NanoTP, 2012; Excellence PhD Fellowship from "Junta de Andalucía" Regional Government, 2006; Undergraduate Starting Research Fellowship from Spanish Ministry of Science, 2006; BSc Studies Scholarship from Spanish Ministry of Science, 1999–2005

Student and Postdoctoral Supervision Supervised 3 postdoctoral researchers, 5+ Ph.D. students, 5+ undergraduate students (Undergraduate Research Opportunities Program (UROP)).