

José Ramón MARTÍNEZ SAAVEDRA

Calle Jovellanos, 36
28522 Rivas-Vaciamadrid
Madrid - Spain

+34 609 962 044
jrmsaavedra@gmail.com
www.jrmsaavedra.net

PhD candidate in Photonics with a computational profile

Nov 2018 (expected)	PhD in Photonics	ICFO–The Institute of Photonic Sciences
Sep 2014	MSc in Photonics	UPC–Polytechnic University of Catalonia
Jun 2013	BSc in Physics	UCM–Complutense University of Madrid

Research

2013–present

ICFO–The Institute of Photonic Sciences (Barcelona, Spain)

As a PhD student in the Nanophotonics Theory Group, I

- Currently study the ultrafast optical response of molecules, and the effects of ultraintense pulses on their energy states and geometrical configuration.
- Derived and implemented a formalism to study the optical response of complex nanostructures, both in the linear and nonlinear regimes.
- Extended the previous formalism to study aggregates of atomic-scaled structures, each of them described through ab-initio simulations.
- Studied the effect of plasmon-phonon hybridization on both the optical response and electron energy-loss processes.
- Described the time-dependent behavior of plasmons and hot-electrons in metallic nanoparticles.

During most of this period I benefited from the FI-B PhD scholarship, provided by the Catalan Agency for Management of University and Research Grants (AGAUR).

Summer 2017

PARC, a Xerox Company (Palo Alto, California)

As an intern in the Metamaterials team, I

- Developed the embedded programming of wireless-powered RF receivers.
- Gave theoretical and numerical support for experiments on heat transport and elastodynamics.
- Collaborated with an startup (Metawave), giving theoretical support for enhancements on their products' performance.
- Participated on hiring committees for Metawave's team, and technology demos for Metawave's investors.

Computational Skills

Operating systems	I work comfortably with MacOS, Linux and Windows machines, either as workstations, basic servers or multiple servers in a cluster environment.
Programming	I routinely prototype (Mathematica, Matlab, Python) and implement (C/C++ and Intel MKL) the physical models I study.
Computational chemistry	For my ab-initio studies, I employ Quantum Chemistry suites such as Gaussian and NWChem.
Markup and design	For publications, I design most of my figures in Adobe Illustrator (2D) or Blender (3D). I also typically write my publications using \LaTeX .
Webpage development	As the designer and webmaster of the Nanophotonics Theory Group webpage, I have a basic knowledge of HTML, CSS, Javascript and Angular environments.

Languages

Spanish	Native language
English	Excellent fluency (daily interactions with research colleagues)
Catalan	Basic reading and listening competences (5 years in Catalonia)

Highlighted scientific contributions [\(full list can be found online\)](#)

[Publication]	<p>Peel-and-Stick Sensors Powered by Directed RF Energy David Schwartz, Clinton J. Smith, Joseph Lee, Shakthi P. Gowri, George Daniel, Christopher Lalau-Keraly, Quentin Baudenon and J. R. M. Saavedra ASME. J. Electron. Packag. (2018)</p> <p>Intrinsic plasmon-phonon interactions in highly doped graphene: A near-field imaging study F. J. Bezares, A. De Sanctis, J. R. M. Saavedra <i>et al.</i> Nano Letters, 5908-5913 (2017)</p> <p>Hot-Electron Dynamics and Thermalization in Small Metallic Nanoparticles J.R.M. Saavedra, Ana Asenjo-García, and F. J. García de Abajo ACS Photonics 3, 1637-1646 (2016)</p>
[Invited talk]	<p>Electron beams for nanophotonics in the atomic scale J. R. M. Saavedra and F. J. García de Abajo Optical Technologies for Society 2015, CSIC-British Council (Madrid, Spain)</p>
[Oral contribution]	<p>Graphene-plasmon lenses for enhanced harmonic generation J. R. M. Saavedra and F. J. García de Abajo SPIE Optics+Photonics 2017 (San Diego, United States)</p>

Teaching and outreach

2017–2018	<p>Science divulgation in Spanish Contributed with two chapters on the open-access book "Science, and I also understand it!", and one on its sequel "And I want to be..."</p>
2015–2016	<p>Bachelor co-advising Co-advised three visiting bachelor students during their internships in the Nanophotonics Theory Group at ICFO.</p>
2011–2012	<p>Teaching Assistant Tutoring and grading of first-year students at Complutense University of Madrid.</p>

Additional formation and experience

2008–2013	<p>IT assistant During this period, I took care of the design, setup and managing of computer networks for different companies</p>
2006–2008	<p>Cisco Certified Network Associate, Salesianos Atocha, Madrid Able to design, setup and manage computer networks with less than 100 computers.</p>