

• Ismael García Serrano •

Uppsala, Sweden • +46 727724184 • ismael.garciaserrano@gmail.com •

 [linkedin.com/in/IsmaelGSerrano](https://www.linkedin.com/in/IsmaelGSerrano)

Researcher expert in Nanofabrication

Creative and passionate physicist with valuable experience in nanofabrication, superconductivity, electrical transport, instrumentation and prototyping. Extensive experience in laboratory and cleanroom environments. Equally effective performing independently or as a member of a research group. Knowledge in information technologies with a good portfolio in programming languages.

Areas of expertise

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|---------------------|--------------------------|--------------------------|
| • Condensed matter | • Lithography | • Data analysis |
| • Superconductivity | • Clean room | • Transport measurements |
| • Magnetism | • Flexible electronics | • FEM Simulation |
| • Spintronics | • Graphene | • Low temperature |
| • 3D printing | • Scientific programming | • Characterization |
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Professional Experience

UPPSALA UNIVERSITY – DEP. OF PHYSICS AND ASTRONOMY | Uppsala, Sweden
Post Doc August 2017 to August 2019

RESEARCH TOPIC: - nanoscience – spintronics – magnetic nanocomposites

- **Main research project:** Developing graphene spintronic devices on flexible substrates.
- **Amorphous magnetic nanocomposites:** nanofabrication of mask patterns for ion implantation.
- **Magnetoelastic properties on cobalt nanowires:** nanomagnets for spintronics on flexible substrates.
- **Graphene lamination techniques:** looking for methods of graphene transferring.

I. G. Serrano, et al. **Nano Lett.** 2019, 19, 2, 666-673.

(<http://doi.org/10.1021/acs.nanolett.8b03520>)

ARAGÓN NANOSCIENCE INSTITUTE | Zaragoza, Spain

PHD THESIS January 2014 to June 2017

RESEARCH TOPIC: - nanoscience – superconductivity – FIBID

- **Main research project:** Developing a Focused Ion Beam Induced Deposition (FIBID) thin film growth optimization of superconducting wolfram-based thin films. (ABENGOA RESEARCH Funding)
- **Collaborative work with groups in Spain and Belgium:** Simulation of vortex dynamics by solving Ginzburg Landau Equations.

I. G. Serrano, et al. **Beilstein J. Nanotechnology**, 7, 1698–1708 (2016).

(<http://doi.org/10.3762/bjnano.7.162>)

APPLIED MAGNETISM INSTITUTE | Madrid, Spain

RESEARCHER

June 2011 to December 2013

RESEARCH TOPIC: - magnetic microwires – applied magnetism – prototyping

- **Main research project:** Studying amorphous FeCoSiBCu magnetic microwires microstructure during nanocrystallization processes for GHz absorption applications (2011 AVANZA State funding)
- **Research project for TECNATOM, S. L. company:** design and simulation of the first prototype of rotating Eddy current sensor. Electromagnetic finite element method simulations with COMSOL Multiphysics.

I. G. Serrano, et al. **Journal of Applied Physics**, **115**, 033903 (2014).

(<https://doi.org/10.1063/1.4862540>)

ARIES, INGENIERÍA Y SISTEMAS, S. L. | Madrid, Spain

INTERNSHIP, RENEWABLE ENERGY

December 2007 to August 2009

- **Main task:** Assisting experts in wind resource data evaluation and participating in the development of renewable plants construction. Wind resource evaluation and development of a JAVA program for the analysis of meteorological towers data.

Education

PhD. Physics (Cum Laude) ✕ UNIVERSIDAD DE ZARAGOZA, Spain (12th July 2017)

M.Sc. Nanoelectronics ✕ UNIVERSIDAD COMPLUTENSE DE MADRID, Spain (2011)

B.Sc. Physics ✕ UNIVERSIDAD COMPLUTENSE DE MADRID, Spain (2010)

Languages

Spanish - Native

English – Full professional proficiency

Swedish - Basic

Relevant Trainings

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| 2016 | Machine Learning (11 weeks). Coursera - Stanford University |
| 2015 | Materials Physical Characterization and applications of equipment Physical Properties Measurement System (PPMS) (38 hours). <i>Servicio general de apoyo a la investigación (Universidad de Zaragoza)</i> |
| 2014 | Postgraduate Degree in Introduction to Scientific Research (750 hours). Universidad de Zaragoza |
| 2014 | Seminar on Safety in research laboratories (8 hours). <i>Instituto de Nanociencia de Aragón (Universidad de Zaragoza)</i> |
| 2014 | Advances in nanostructured superconductors: materials, properties and theory (1 week). <i>'La cristalera', Miraflores de la Sierra, Madrid (Universidad Autónoma de Madrid)</i> |
| 2013 | VI European School on Molecular Nanoscience (1 week). <i>Instituto de Ciencia Molecular (Universidad de Valencia)</i> |
| 2012 | Manufacturing Techniques for Scientific Instrumentation (10 hours). Universidad Autónoma de Madrid |
| 2012 | Course on Atomic Force Microscopy (AFM) (20 hours). <i>Nanotec Electrónica S. L.</i> |
| 2011 | IBERNAM Summer School, Microsystems and Nanotechnology (20 hours). <i>Universidad Rovira i Virgili</i> |