

## Curriculum Vitae

### PERSONAL INFORMATION

Family name, First name: Laura Rodriguez Lorenzo

Researcher unique identifier(s): <http://orcid.org/0000-0002-0315-7981>

Date of birth: 23.02.1984

URL for web site: <http://ami.swiss/about/people/staff/laura-rodriguez-lorenzo>



### • EDUCATION

- 22/04/2013 – 06/05/2013 Postdoctoral Mobility  
TNT group (Prof. Miguel Correa-Duarte), University of Vigo, Vigo /Spain
- 25/07/2009 – 31/07/2012 PhD Thesis  
Chemistry/ Physical Chemistry department, University of Vigo/ Spain  
*Thesis defence date: 25th April 2012 (Apto Cum Lauden)*  
*Awarded Extraordinary Mention in Chemistry on the 12th November 2012*
- 29/07/2009 – 29/11/2009 PhD FPU Mobility  
NanoChemistry group (Prof. Mathias Brust), University of Liverpool, Liverpool /UK
- 01/02/2011 – 31/07/2011 PhD FPU Mobility  
Stevens Group (Prof. Molly Stevens), Imperial College London, London /UK
- 16/10/2007 – 24/07/2009 Master (Advanced Studies Diploma)  
Chemistry/ Physical Chemistry department, University of Vigo/ Spain
- 16/10/2007 – 5/11/2008 Graduate Thesis  
Chemistry/ Physical Chemistry department, University of Vigo/ Spain
- 14/10/2002 – 15/07/2007 Graduate Student  
Chemistry/ University of Vigo/ Spain  
*Awarded Extraordinary Mention on the 23th January 2008*
- 05/09/2010 – 20/03/2011 Postgrade ISO 9000  
ECOL on-line/ Universidad Autónoma de Barcelona/ Spain
- 01/05/2012 – 31/03/2013 Postgrade Video Edition and Fitting  
Fundación CPASALDUIE (Grupo SanValero)/ University of Zaragoza/ Spain

### • PREVIOUS POSITIONS AND ACTIVITIES

- 16/10/2007 – 14/09/2008 Predoctoral Position  
Chemistry/ Physical Chemistry department, University of Vigo/ Spain
- 15/09/2008 – 31/07/2012 Training programme for Academic Staff (FPU) Fellow  
Chemistry/ Physical Chemistry department, University of Vigo/ Spain
- 01/08/2012 – 31/12/2014 Postdoctoral Researcher  
BioNanomaterials Group / Adolphe Merkel Institute / University of Fribourg / Switzerland
- 22/04/2013 – 06/05/2013 Postdoctoral Mobility  
TNT group (Prof. Miguel Correa-Duarte), University of Vigo, Vigo /Spain
- 01/01/2015 – 31/06/2016 Senior Postdoctoral Researcher  
BioNanomaterials Group / Adolphe Merkel Institute / University of Fribourg / Switzerland
- 01/07/2016 – 30/11/2017 Senior Researcher (Maitre assistante)  
BioNanomaterials Research Group / Adolphe Merkel Institute / University of Fribourg / Switzerland

### • CURRENT POSITION(S)

- 04/12/2017 – Marie-Curie COFUND Research Fellow  
Department of Life Science / INL / Portugal

**Activity keywords:** Nanoparticles; Biosensors; nanosensor, Analyses screening; Hybrid metal-organic compounds; Monolayers; Chemisorptions; Double layer; Nanoparticles Dissolution reactions; Macromolecular ligand interactions; Nanoparticle-cell interaction; Autoassembly; Colloids; Dissolutions; Spectroscopy (Emission and absorbance, Raman, Infrared); Surface enhanced spectroscopy; ICP-OES; QCM; ITC.

- **FELLOWSHIPS AND AWARDS**

01/02/2006 – 15/09/2006 Bolseiro de colaboración e de enlace na realización enquisas de avaliación docente, Chemistry, University of Vigo, Spain.

15/09/2006 – 15/07/2007 Beca colaboración para universitarios en el último curso de segundo ciclo, Chemistry, Physical Chemistry Department, University of Vigo, Spain.

16/09/2008 – 31/08/2012 Training programme for Academic Staff (FPU) , Chemistry, Physical Chemistry Department, University of Vigo, Spain.

31/12/2013 – 31/12/2014 Award received from L'Oreal Switzerland and UNESCO's fellowship program "For Women in Science 2013".

07/05/2015 Award "100 most influential young people at the francophone Swiss zone" received from L'Hebdo journal.

- **SUPERVISION OF GRADUATE STUDENTS**

15/09/2014 –15/12/2014 1 PhD student from University of Vigo (short stay project "Synthesis of nanocapsules for detection of emerging contaminants") BioNanomaterial Research Group/ Adolphe Merkle Institute/ University of Fribourg/ Switzerland

01/09/2014 –15/12/2017 1 PhD student from University of Fribourg (project "Sensory responsive nanoelements to detect individual cancer cells") BioNanomaterial Research Group/ Adolphe Merkle Institute/ University of Fribourg/ Switzerland

15/06/2016 –7/09/2016 1 undergraduated student from Undergraduate Summer Research Internship Program of the NCCR bio-Inspired Materials (project "How does hydrophilicity of fluorescent labels on nanoparticles impact cellular interaction?") BioNanomaterial Research Group/ Adolphe Merkle Institute/ University of Fribourg/ Switzerland

- **TEACHING ACTIVITIES**

2010 – 2011 course FPU scholarship student – **Química 1**, Facultad de Ciencias del Mar. University of Vigo.

2010 – 2011 course FPU scholarship student – **Experimentación en Química Física**. Escuela Universitaria de Ingeniería Técnica Industrial. University of Vigo.

2011 – 2012 course FPU scholarship student – **Química Física II**. Facultad de Química. University of Vigo.

2011 – 2012 course FPU scholarship student – **Química**. Escuela Universitaria de Ingeniería Técnica Industrial. University of Vigo.

2011 – 2012 course FPU scholarship student – **Química II**. Facultad de Ciencias del Mar. University of Vigo.

- **EXPERIENCE RESEARCHER**

**Publications**

*Articles & Reviews in Periodical Journals (2009-2017):* 36 (Web-of-Science; Scopus and Google Scholar)

- Total Citation: 2193.

- h-index: 20

*Book Chapter: 1 (Included in Scopus and Google Scholar).*

**Patents**

De la Rica, R., Rodriguez-Lorenzo, L., Stevens, M.M., and Liz-Marzan, L.M. (2012). Enzyme-guided Ag crystal growth for inverse sensitivity assay (London Imperial College (UK)).

**Researching projects (principal researcher): 1**

*Name of the project:* Surface-Enhanced Raman Scattering (SERS)-based Imaging and Ultrasensitive-detection of Biomarkers in Biological Samples.

*Name principal investigator (PI, Co-PI,...):* Laura Rodriguez-Lorenzo.

*Name of the programme:* L'Oreal Switzerland and UNESCO's fellowship program "For Women in Science 2013".

*Start-End- date:* 01.09.2013-31.01.2015

*Total amount:* 60.000 euros.

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**Researching projects (non-principal researcher): 7**

*Name of the project:* Sensoresponsive nanoelements to detect and eliminate individual cancer cells

*Name principal investigator (PI, Co-PI,...):* Curzio Rüegg

*Name of the programme:* National Center of Competence in Research (NCCR Switzerland)

*Start-End- date:* 01.01.2014-31.12.2017

*Total amount:* 10.900.000 CHF.

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*Name of the project:* Nanotechnology: Implications for the wood preservation industry

*Name principal investigator (PI, Co-PI,...):* Alke Petri-Fink

*Name of the programme:* Programmes division National Research Programmes (NRP-66) (136976)

*Start-End- date:* 31.12.2011-31.12.2014

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*Name of the project:* Biomedical Nanoparticles as immune-modulators

*Name principal investigator (PI, Co-PI,...):* Barbara Rothen-Rutishauser

*Name of the programme:* Programmes division National Research Programmes (NRP-64) (PP00P2-123373/1)

*Start-End- date:* 01.12.2010-31.12.2014

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*Name of the project:* Molecular-Level Understanding and Tailoring of Nanostructured Materials for Environmental Uses

*Name principal investigator (PI, Co-PI,...):* Luis Liz Marzan

*Start-End- date:* 2009-2012

*Total amount:* 40.000 euros.

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*Name of the project:* Fabricación, optimización y aplicación de nuevos "optical enhancers" para SERS

*Name principal investigator (PI, Co-PI,...):* Ramon Alvarez Puebla

*Start-End- date:* 2007-2012

*Total amount:* 189.000 euros.

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*Name of the project:* Aplicación de espectroscopias aumentadas por superficies (SERS Y SEF) y micropartículas compuestas (SiO<sub>2</sub>/nanopartícula) al descubrimiento de nuevos fármacos con actividad biológica, diagnosis y exploración de alto rendimiento

*Name principal investigator (PI, Co-PI,...):* Ramon Alvarez Puebla

*Start-End- date:* 2009-2011

*Total amount:* 72.600 euros.

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*Name of the project:* Nanobiosensores ultrasensibles basados en SERS para diagnosis y biodetección

*Name principal investigator (PI, Co-PI,...):* Ramon Alvarez Puebla

*Start-End- date:* 2008-2011

*Total amount:* 83.950 euros.

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**Temporary stay: 3**

Chemistry group (Prof. Mathias Brust), Liverpool (UK) for 4 months.

Stevens group (Prof. Molly Stevens), London (UK) for 6 months.

TNT group (Prof. Miguel Correa-Duarte), Vigo (Spain) for 2 weeks.

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**Conference Proceedings (oral presentation and poster): 26**

**Peer reviewer in:** ACS (Lagmuir, Analytical Chemistry); Wiley (Small, Advanced Healthcare Materials); Royal Society of Chemistry (Biomaterial Science); Elsevier (Biomaterials, Sensor & Actuator: B. Chemical); Hindawi (Journal of Nanomaterials); BioMed Central (Journal of Nanobiotechnology); Beilstein Journal of Nanotechnology.

**• EXPERIENCE WITH INSTRUMENTAL**

Raman spectroscopy (FT-Raman, Micro-Raman and surface-enhanced vibrational spectroscopy (e.g. SERS).

Infrared spectroscopy (IR).

Fluorescence spectroscopy and SEFS.

UV-Vis spectroscopy (transmission and diffuse reflectance).

Dynamic (Depolarized) Light Scattering.

Microscopy: Scanning electron microscopy (SEM), Transmission electron microscopy (TEM), Dark field microscopy (Cytoviva), Laser scanning microscopy (LSM).

Analytical techniques: ICP-OES, Quartz Crystal Microbalance (QCM), Isothermal Titration Calorimetry (ITC).

Molecular modelization (Gaussian'03): Molecular mechanics, molecular dynamics, semi-empirical methods and *ab initio* methods (Hartree-Fock and Density Functional Theory).

- **OTHER ACTIVITIES/ACHIEVEMENTS**

**Courses**

03/03/2008 – 14/03/2008 39th IFF Spring School 2008: Soft Matter- From Synthetic to Biological Materials, Jülich, Germany.

14/07/2008 – 18/07/2008 Nanotecnologies en Biomedicina, Barcelona, Spain.

12/07/2006 – 14/07/2006 Israel e Europa, Rivadavia (Ourense), Spain.

25/10/2005 – 27/10/2005 Formación Básica de Voluntariado, Vigo, Spain.

**Voluntary action in the Universidad de Vigo**

Sensibilización na universidade de Vigo

Coordinator: OSIX-Campus de Vigo

Hours: 30

Reciclaxe e doazón de ordenadores a asociacións e entidades sen animo de lucro

Coordinator: OSIX-Campus de Vigo

Hours: 30

- **LANGUAGE**

Spanish – mother tongue

English – good (written and spoken)