

## Elena Pazos – *curriculum vitae*

### Contact information

Name: Elena Pazos Chantrero  
Work address: Ed. CICA, As Carballeiras s/n  
Campus de Elviña  
15071 A Coruña - Spain  
E-mail: elena.pazos@udc.es  
Phone: +34 881 015 590

### Academic background

16/02/2012 **PhD, Organic Chemistry** ("Apto cum laude"; "Extraordinary PhD Award"). *Universidade de Santiago de Compostela, Spain. "Luminescent probes of proteins involved in cancer"*.  
2008 **Master in Organic Chemistry**. *Universidade de Santiago de Compostela, Spain. "Development of fluorescent peptides to study protein-protein interactions in cell cycle regulation."*  
2006-2007 **Certificate of pedagogical aptitude (CAP)**. *Universidade de Santiago de Compostela, Spain.*  
2001-2006 **BS Degree in Chemistry** – "Chemistry of bioactive compounds". *Universidade de Santiago de Compostela, Spain.*

### Research and teaching experience

2018-present Assistant Professor (tenure track) of the Master in Advanced Biotechnology, Master in Chemical Research and Industrial Chemistry and Degree in Chemistry at *Universidade da Coruña, Spain*.  
2017-present July 1, 2017, **InTalent Researcher** at Advanced Scientific Research Center (CICA) and Chemistry Department, *Universidade da Coruña, Spain*.  
2015-2017 December 1, 2015 – June 30, 2017, **TECNIOspring & Marie Curie Fellow** at *Centro Tecnològic de la Química de Catalunya (CTQC), Spain*.  
2014-2015 October 1, 2014 – November 30, 2015, research officer at *Medcom Advance, Spain*.  
2015 October 28, 2015, Accreditation "*Profesor Contratado Doctor*", "*Profesor Ayudante Doctor*", and "*Profesor de Universidad Privada*".  
2012-2014 November 5, 2012 – September 30, 2014, postdoctoral researcher with **Prof. Samuel Stupp** at the Simpson Querrey Institute for BioNanotechnology (SQI), *Northwestern University, USA*. **Postdoctoral fellowship** funded by Fundación Barrié.  
2012 February 17 – September 30, postdoctoral researcher with **Prof. José L. Mascareñas and Prof. M. Eugenio Vázquez** at the Department of Organic Chemistry and Center for Research in Biological Chemistry and Molecular Materials (CIQUS), *Universidade de Santiago de Compostela, Spain*.  
2010 June 15 – October 15, research internship with **Prof. Scott K. Silverman** at the Department of Chemistry, *University of Illinois at Urbana-Champaign, USA*, working on the development of novel biophysical tools for site-specific labeling of RNA using "small-molecule DECAL".  
2008 June 15 – October 15, research internship with **Prof. Thorfinnur Gunnlaugsson** at the Department of Chemistry, *Trinity College of Dublin, Ireland*, working on the development of novel lanthanide luminescent supramolecular self-assembly structures.  
2008-2010 Teaching assistant at the Organic Chemistry Department, *Universidade de Santiago de Compostela, Spain*.  
2006-2007 October 1, 2006 – April 30, 2007, teaching assistant fellowship funded by the Department of Organic Chemistry, *Universidade de Santiago de Compostela, Spain*.  
2006-2012 October 1, 2006 – February 16, 2012, PhD student with **Prof. José L. Mascareñas and Prof. M. Eugenio Vázquez** at the Department of Organic Chemistry and Center for Research in Biological Chemistry and Molecular Materials (CIQUS), *Universidade de Santiago de Compostela, Spain*. **FPU PhD Fellowship** funded by the *Spanish Ministry of Education and Science* from May 2, 2007 to May 1, 2011.  
2005-2006 October 1, 2005 – June 30, 2006, **research assistant fellowship** funded by the *Spanish Ministry of Education and Science* at the Department of Organic Chemistry, *Universidade de Santiago de Compostela, Spain*.

## Publications and patents

### Publications

- Pablo Iglesias, Cristina Penas, **Elena Pazos**<sup>\*</sup>, Jose A. Costoya<sup>\*</sup>. "Hypoxia sensing based on bio-inspired sensors." *Submitted*.
- **Elena Pazos**, Paula Novo, Carlos Peinador, Angel E. Kaifer, Marcos D. García. "CB[8]-Based Supramolecular Switches." *Angew. Chem. Int. Ed.* **2018**, 10.1002/anie.201806575.
- **Elena Pazos**, Manuel García-Algar, Cristina Penas, Moritz Nazarenius, Arnau Torruella, Nicolas Pazos-Perez, Luca Guerrini, M. Eugenio Vázquez, Eduardo García-Rico, Jose L. Mascareñas, Ramon A. Alvarez-Puebla. "SERS surface selection rules for the proteomic liquid biopsy in real samples. Efficient detection of the oncoprotein c-MYC." *J. Am. Chem. Soc.* **2016**, *138*, 14206-14209.
- Carme Catala, Bernat Mir-Simon, Xiaotong Feng, Celia Cardozo, Nicolas Pazos-Perez, **Elena Pazos**, Sara Gómez-de Pedro, Luca Guerrini, Alex Soriano, Jordi Vila, Francesc Marco; Eduardo García-Rico, Ramon A. Alvarez-Puebla. "Online SERS quantification of *Staphylococcus aureus* and the application to diagnostics in human fluids." *Adv. Mat. Tech.* **2016**, *1*, 1600163.
- Nicolas Pazos-Perez, **Elena Pazos**, Carme Catala, Bernat Mir-Simon, Sara Gómez-de Pedro, Juan Sagalés, Carlos Villanueva, Jordi Vila, Alex Soriano, F. Javier García de Abajo, Ramon A. Alvarez-Puebla. "Ultrasensitive multiplex optical quantification of bacteria in large samples of biofluids." *Sci. Rep.* **2016**, *6*, 29014.
- **Elena Pazos**, Eduard Sleep, Charles M. Rubert Pérez, Sungsoo S. Lee, Faifan Tantakitti, Samuel I. Stupp. "Nucleation and Growth of Ordered Arrays of Silver Nanoparticles on Peptide Nanofibers: Hybrid Nanostructures with Antimicrobial Properties." *J. Am. Chem. Soc.* **2016**, *138*, 5507-5510.
- **Elena Pazos**, José L. Mascareñas, M. Eugenio Vázquez. "Identification of Cyclin A binders with a fluorescent peptide sensor." In *Cyclin-Dependent Kinase (CDK) Inhibitors: Methods and Protocols, Methods in Molecular Biology*; Mar Orzáez et al., Eds.; Springer: New York, **2016**; Vol. 1336, 67-83.
- **Elena Pazos**, Cecilia Portela, Cristina Penas, M. Eugenio Vázquez, José L. Mascareñas. "Peptide-DNA conjugates as tailored bivalent binders of the oncoprotein c-Jun." *Org. Biomol. Chem.* **2015**, *13*, 5385-5390.
- **Elena Pazos**, M. Eugenio Vázquez. "Advances in lanthanide-based luminescent peptide probes for monitoring the activity of kinase and phosphatase." *Biotechnol. J.* **2014**, *9*, 241-252.
- Luca Guerrini, **Elena Pazos**, Cristina Penas, M. Eugenio Vázquez, José L. Mascareñas, Ramon A. Alvarez-Puebla. "Highly sensitive SERS quantification of the oncogenic protein c-Jun in cellular extracts." *J. Am. Chem. Soc.* **2013**, *135*, 10314-10317.
- Cristina Penas, **Elena Pazos**, José L. Mascareñas, M. Eugenio Vázquez. "A folding-based approach for the luminescent detection of a short RNA hairpin." *J. Am. Chem. Soc.* **2013**, *135*, 3812-3814.
- **Elena Pazos**, Marko Goličnik, José L. Mascareñas, M. Eugenio Vázquez. "Detection of phosphorylation states by intermolecular sensitization of lanthanide-peptide conjugates." *Chem. Commun.* **2012**, *48*, 9534-9536.
- Adrián Jiménez-Balsa, **Elena Pazos**, Borja Martínez-Albardonedo, José L. Mascareñas, M. Eugenio Vázquez. "Temporary Electrostatic Impairment of DNA Recognition: Light-Driven DNA Binding of Peptide Dimers." *Angew. Chem. Int. Ed.* **2012**, *51*, 8825-8829.
- **Elena Pazos**, Miguel Pérez, Hugo Gutiérrez-de-Terán, Mar Orzáez, Tatiana Guevara, José L. Mascareñas, M. Eugenio Vázquez. "Rational design of a Cyclin A fluorescent peptide sensor." *Org. Biomol. Chem.* **2011**, *9*, 7629-7632.
- **Elena Pazos**, Adrián Jimenez-Balsa, José L. Mascareñas, M. Eugenio Vázquez. "Sensing Coiled-Coil Proteins through Conformational Modulation of Energy Transfer Processes. Selective Detection of the Oncogenic Transcription Factor c-Jun." *Chem. Sci.* **2011**, *2*, 1984-1987.
- **Elena Pazos**, Jesús Mosquera, M. Eugenio Vázquez, José L. Mascareñas. "DNA Recognition by Synthetic Constructs." *ChemBioChem* **2011**, *12*, 1958-1973.
- **Elena Pazos**, Olalla Vázquez, José L. Mascareñas, M. Eugenio Vázquez. "Peptide-based fluorescent biosensors." *Chem. Soc. Rev.* **2009**, *38*, 3348-3359.
- **Elena Pazos**, Daniel Torrecilla, Miguel Vázquez, Luis Castedo, José L. Mascareñas, Anxo Vidal, M. Eugenio Vázquez. "Cyclin A Probes by Means of Intermolecular Sensitization of Terbium-Chelating Peptides." *J. Am. Chem. Soc.* **2008**, *130*, 9652-9653.

### Patents

- N. Pazos-Perez, **E. Pazos**, C. Català, B. Mir-Simon, S. Gomez-de Pedro, J. Sagales, C. Villanueva, R. A. Alvarez-Puebla. "A method for detection of presence or absence of analytes in fluids and an optical detection system for carrying out the method" – Patent number: US 20180217069 A1 (02/08/2018), EP 3329258 A1 (06/06/2018), WO 2017020936 A1 (09/02/2017).
- **E. Pazos**, A. Vidal, J. L. Mascareñas, M. E. Vázquez. "Fluorescent substrates for detection of cyclin-dependent kinase inhibitors or cyclins and their use in drug screening" – Patent number: ES 2331286 B2 (25/10/2010), WO 2009156541 A1 (30/12/2009).

### Research grants as principal investigator

- Peptide-based tools for biological applications: smart sensors for studying protein nitration and nanomaterials with tunable functionalities, 2018-2019, 47 K€, *Research State Agency*, Spain, **PI**.
- InTalent UDC-Inditex Programme, 2017-2020, 210 K€, *Universidade da Coruña*, Spain, **PI**.
- TECNIOSpring Programme Incoming Fellowship, 2015-2017, 130 K€, *ACCIÓ*, Spain, **co-PI**.

### Communications in meetings

**Invited speaker:** CORBI Citizen Science, A Coruña, Spain, 01/03/2018 • INIBIC Seminar Programme – Institute for Biomedical Research of A Coruña, A Coruña, Spain, 28/12/2017 • Multidisciplinary Seminar Program – Universitat Rovira i Virgili, Tarragona, Spain, 12/05/2017 • Nanotechnology Applications. Current Challenges: Seeking Strategies and Solutions Meeting, Tarragona, Spain, 29/11/2016.

**Oral communications:** XXXVI RSEQ Biannual Meeting, Sitges, Spain, 25-29/06/2017 • 100th Canadian Chemistry Conference and Exhibition, Toronto, Canada, 28/05-01/06/2017 • XXXV RSEQ Biannual Meeting, A Coruña, Spain, 19-23/07/2015 • IV Galician Young Researchers Meeting, A Coruña, Spain, 26/12/2013 • XXXIV RSEQ Biannual Meeting, Santander, Spain, 15-18/09/2013 • XXXIII RSEQ Biannual Meeting, Valencia, Spain, 25-28/07/2011 • 240th ACS National Meeting and Exposition, Boston, USA, 22-26/08/2010 • XI Iberian Peptide Meeting, Santiago de Compostela, Spain, 6-7/03/2008.

**Poster:** Participation in 16 national and international meetings.

### Reviewing activities

- 2017 expert evaluator for the H2020 FET OPEN RIA 2016-2017.  
2017 scientific referee for the US-Israel Binational Science Foundation.  
2014-present scientific referee for the Agencia Nacional de Evaluación y Prospectiva (ANEP), Spain.

### Memberships of scientific societies

- 2017-present Marie Curie Alumni Association.  
2016-present Chemical Biology Group of the Spanish Royal Society of Chemistry (RSEQ).  
2007-present Young Researchers Chemistry Group of the Spanish Royal Society of Chemistry (RSEQ).  
2007-present Member of the Spanish Royal Society of Chemistry (RSEQ).

### Students supervision

- 2018 September 3 – November 30, Karolina Dworzak – Erasmus+ Traineeship Programme. *Universidade da Coruña*, Spain.  
2018 September 3 – November 30, Pawel Suchan – Erasmus+ Traineeship Programme. *Universidade da Coruña*, Spain.  
2018 January 1 – July 17, Irem Duman – Erasmus+ Programme. *Universidade da Coruña*, Spain.  
2017-2018 Paula Novo Valencia – Master thesis: “*Supramolecular assemblies of peptide- viologen conjugates as tools for chemical biology applications*”. *Universidade da Coruña*, Spain.  
2017-2018 Pablo Cortón Debén – Bachelor’s final year project: “*Viologen-peptide conjugates in supramolecular chemistry*”. *Universidade da Coruña*, Spain.  
2017-2018 Francisco J. Ferreiro Rey – Bachelor’s final year project: “*Application of coordination compounds as optical sensors*”. *Universidade da Coruña*, Spain.  
2017-2018 Alba Mayo Rey – Bachelor’s final year project: “*Preparation of silver nanoparticles conjugated with siderophores and evaluation of their application on bacteria detection*”. *Universidade da Coruña*, Spain.

### Teaching activities

- 2018-2019 Chemistry Laboratory, 60 h – Degree in Chemistry, *Universidade da Coruña*, Spain.  
2017-2018 Molecular materials, 9 h – Master in Chemical Research and Industrial Chemistry, *Universidade da Coruña*, Spain.  
2017-2018 Biomolecules chemistry, 9 h – Master in Chemical Research and Industrial Chemistry, *Universidade da Coruña*, Spain.  
2017-2018 Applied techniques in biotechnology, 4 h – Master in Advanced Biotechnology, *Universidade da Coruña*, Spain.  
2009-2010 Chemistry for Biology, 60 h – Degree in Biology, *Universidade de Santiago de Compostela*, Spain.  
2008-2009 Chemistry, 60 h – Degree in Biology, *Universidade de Santiago de Compostela*, Spain.  
2006-2007 Teaching assistant, 180 h – Department of Organic Chemistry, *Universidade de Santiago de Compostela*, Spain.