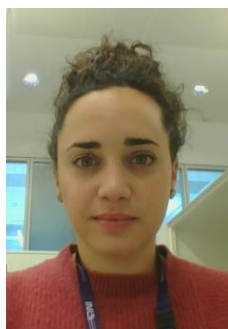


SARA ABALDE-CELA (1985, Spanish)**PhD in Chemistry****CONTACT DETAILS**

Address Dr Sara Abalde-Cela
International Iberian Nanotechnology Laboratory, INL
Avda. Mestre José Veiga s/n, 4715-330
Braga, Portugal

Contact details

Email: sara.abalde@inl.int (Work)

sara.abalde.cela@gmail.com (Permanent)

Phone: + 351 253 140 112 – 2356 (Work)

+34 669317721 (personal)

[Linkedin](#)

[ORCID](#)

[Researcher ID](#)

[Google Scholar](#)

[Researchgate](#)

EDUCATION

| | | |
|-----------|---------------------------------|---------------------------|
| 2008-2013 | PhD Thesis | University of Vigo, Spain |
| 2008-2010 | Advanced Studies Diploma (~MSc) | University of Vigo, Spain |
| 2008-2009 | Graduate Thesis | University of Vigo, Spain |
| 2003-2008 | BSc Chemistry | University of Vigo, Spain |

TEACHING EXPERIENCE

| DATE | SUBJECT | PLACE |
|-----------|---|--|
| 2017 | Lecturer | Integrated master in Physics Engineering, Universidade de Minho, Portugal |
| 2015 | Lecturer | Graduate Student Series- University of Cambridge, UK |
| 2015 | Supervisor | Master Student – University of Cambridge, UK |
| 2014 | Supervisor | Visiting Master Student – 4 months, U. Cambridge, UK |
| 2013-2014 | Supervisor: Chemistry | Lucy Cavendish College, University of Cambridge, UK |
| 2013 | Supervisor: High-resolution molecular spectroscopy | King's College, University of Cambridge, UK St. John's College, University of Cambridge, UK |
| 2012 | Chemistry I | University of Vigo, Spain |
| 2012 | Chemical Oceanography | University of Vigo, Spain |

PROFESSIONAL EXPERIENCE

| | | |
|---------------------|---|---|
| 2017-Now | Marie Curie COFUND Research Fellow | International Iberian Nanotechnology Institute, Portugal |
| Apr. 2016-Dec. 2016 | Senior Researcher Advanced Materials | AIMEN Centro Tecnológico, Spain |
| 2013-2016 | Postdoctoral Research Associate | University of Cambridge, UK |
| 2008-2013 | PhD - Colloid Chemistry Group | University of Vigo, Spain |
| 2008-2010 | Advanced Studies Diploma (~MSc) | University of Vigo, Spain |
| 2008-2009 | Graduate Thesis | University of Vigo, Spain |
| Jun. 2007-Sep.2007 | Summer Studentship | Biomedical Foundation-Vigo |

RESEARCH INTERESTS/SCIENTIFIC KNOWLEDGE

- **Vibrational spectroscopies** (IR, Raman, RS, **SERS**, and **SERRS**) and fluorescence.
- **Synthesis and characterization of metallic nanostructures and nanocomposites:** size-shape tuning of gold and silver nanoparticles, hybrid materials, ...
- **Fabrication and applications of microfluidic devices:** Synthesis of microdroplets, on-line microfluidics set-up for Raman measurements, LIF, droplet sorting and pico-injection...
- **Biological culture:** Microalgae and bacteria, bulk culture, microdroplets culture, biological operations in microdroplets and microfluidics.

- Hybrid nanosensors for biosensing and high-throughput screening.
- **Surface chemistry:** surface functional groups characterization, adsorption-desorption phenomena, synthesis and characterization of thin films, LbL functionalization techniques (films and microparticles), silica coating and (bio)functionalization.

INSTRUMENTAL TECHNIQUES

- **Raman, fluorescence and UV-vis spectroscopy:**
 - Micro-Raman: visible (488, 532, 633) and infrared (785 nm, 830 nm)
 - SERS, SERRS, Raman imaging and mapping
 - Fluorescence imaging, LIF, FADS.
- Scanning and transmission **electron microscopy** (SEM, TEM, STEM)
- **Photolithography** for microfluidic chips masters production
- Molecular modelization (Gaussian'03): Molecular mechanics, molecular dynamics, semi-empirical methods and *ab initio* methods (Hartree-Fock and Density Functional Theory).

OTHER SKILLS

| LANGUAGE | SPEECH | READING | WRITING |
|--------------------|--|---------|---------|
| Spanish | Mother language | | |
| English | Advanced | | |
| Portuguese | Intermediate | | |
| Italian | Intermediate | | |
| Galician | Mother language | | |
| INFORMATICS | Windows, Office, Mac OS, Spectral Software (Wire, Grams, Omnic, Origin), Photoshop, 3D Studio Max, EndNote, ChemBioDraw, AutoCad | | |

INVOLVEMENT IN RESEARCH PROGRAMS (8)

TITLE: A portable plasmonic sensor for the real-time and online characterisation of cancer cells.

FUNDS: H2020-MSCA-COFUND-2015

DATE: 2017-2019

PI: International Iberian Nanotechnology Institute

TITLE: **FaiERA – Fostering AIMEN reserach potential in laser technology for material processing**

FUNDS: FP7 - UE

DATE: 2016

PI: AIMEN Centro Tecnológico

TITLE: **Development of a microfluidic device for high-throughput analysis of genetic circuits in plant protoplasts**

FUNDS: SynBio Fund, University of Cambridge

DATE: 2016

PI: Dr. Sara Abalde-Cela, Dr. S. J. Burgess, Dr. Ivan Llo, Dr. W.P. Bennett, Dr. C.R. Boehm

TITLE: **Direct Ethanol from Microalgae (DEMA)**

FUNDS: Seventh Framework Programme from the European Union-FP7

DATE: 2013-2015

PI: Prof. Chris Abell

TITLE: **Detección universal de proteínas mediante sistemas de sensores ópticos de reactividad cruzada.**

FUNDS: Ministry of Economy and Competitivity- Spanish Government

DATE: 2012-2014

PI: R.A. Álvarez-Puebla

TITLE: **Fabrication of metallodielectric micro-composites with applications in ultrafast disease diagnosis.**

FUNDS: Ministry of Science and Innovation- Spanish Government

PERIOD: 2011-2013

PI: L.M. Liz-Marzán

TITLE: **Fabricación, optimización y aplicación de nuevos “optical enhancers” para SERS.**

FUNDS: Ministry of Science and Innovation- Spanish Government

DATE: 2007-2012

PI: R.A. Álvarez-Puebla

TITLE: **Ultrasensitive nanobiosensors based in SERS for diagnosis and biodetection.**

FUNDS: General Department for R&D- Galician Government

DATE: 2008-2011

PI: R.A. Álvarez-Puebla

TITLE: **SERS and SEF application of hybrid microparticles (SiO₂/Nanoparticle) to the discovering of new drugs with biological activities, diagnosis and high-throughput screening.**

FUNDS: Ministry of Science and Innovation-Spanish Government

DATE: 2008-2011

PI: R.A. Álvarez Puebla

TITLE: **Rational design of (bio)sensors based on metallic nanoparticles.**

FUNDS: Ministry of Science and Innovation- Spanish Government

DATE: 2007-2010

PI: L. M. Liz Marzán

TEMPORARY STAYS ABROAD (2)

PROJECT: Nanoparticle assembly in microdroplets for SERS detection.

HOST INSTITUTION: **University of Cambridge**
(Prof. Chris Abell - Microdroplets Group)

COUNTRY: Cambridge (United Kingdom)

PERIOD: September 2011-December 2011

PROJECT: Nanoparticle synthesis in microfluidic systems.

HOST INSTITUTION: **University of Cambridge**
(Prof. Chris Abell - Microdroplets Group)

COUNTRY: Cambridge (United Kingdom)

PERIOD: September 2009-December 2009

PUBLICATIONS (11)

AUTHORS: R. Best, J. J. Lyczakowski, **S. Abalde-Cela**, Z. Yu, C. Abell, A. G. Smith
TITLE: [Label-free analysis and sorting of microalga and cyanobacteria in microdroplets by native chlorophyll fluorescence](#)
REF.: Anal. Chem, **(2016)**, 88(21):10445-10451

AUTHORS: R. Best, **S. Abalde-Cela**, C. Abell, A. G. Smith
TITLE: [Applications of microdroplet technology for algal biotechnology](#)
REF.: Current Biotechnology, (2016), 5 (2): 109-117

AUTHORS: **S. Abalde-Cela**, S. Carregal-Romero, J.P. Coelho, A. Guerrero-Martínez
TITLE: [Recent progres son coloidal metal nanoparticles as signal enhancers in nanosensing](#)
REF.: Advances in Colloid and Interface Science, **(2016)**, 233:255-270

AUTHORS: **S. Abalde-Cela**, A. Gold, X. Liu, E. Kazamia, A.G. Smith, C. Abell.
TITLE: [High-throughput detection of etanol-producing cyanobacteria ethanol in a microdroplet platform](#)
REF.: *JRSI* , **12**: 2015.0216

AUTHORS: **S. Abalde-Cela**, R.A. Álvarez-Puebla, C. Abell, L.M. Liz-Marzán.
TITLE: [Real-time dual-channel multiplex SERS ultradetection.](#)
REF.: *J. Phys. Chem. Lett.*, **(2014)**, 5(1), 73-79
[ACS LiveSlides](#)

AUTHORS: V. López-Puente, **S. Abalde-Cela**, P.C. Angelomé, R.A. Álvarez-Puebla, L.M. Liz-Marzán.
TITLE: [Plasmonic mesoporous composites as molecular sieves for SERS detection.](#)
REF.: ***J. Phys. Chem. Lett.***, **(2013)**, 4, 2715-2720 .
[Featured in C&EN 'Molecular sieves for SERS'](#)
[ACS LiveSlides](#)

AUTHORS: Rafael Contreras-Cáceres[‡], **Sara Abalde-Cela**[‡], Pablo Guardia-Girós, Antonio Fernández-Barbero, Jorge Pérez-Juste, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán.

[‡] These authors have contributed equally to this work

TITLE: [Multifunctional microgel magnetic/optical traps for SERS ultradetection.](#)

REF.: **Langmuir**, (2011) 27, 4520-4525

AUTHORS: **S. Abalde-Cela**, J.M. Hermida-Ramón, P. Contreras-Carballada, L. De Cola, A. Guerrero-Martínez, R.A. Álvarez-Puebla, L.M. Liz-Marzán.

TITLE: [SERS Chiral Recognition and Quantification of Enantiomers through Cyclodextrin Supramolecular Complexation.](#)

REF.: **ChemPhysChem**, (2011) 12,1529-1535

AUTHORS: **S. Abalde-Cela**, B. Auguié, M. Fischlechner, W.T.S. Huck, R.A. Álvarez-Puebla, L.M. Liz-Marzán, C. Abell.

TITLE: [Microdroplet fabrication of silver-agarose nanocomposite beads for SERS optical accumulation.](#)

REF.: **Soft. Matter.**, (2011) 7, 1321-1325

AUTHORS: **Sara Abalde-Cela**, Paula Aldeanueva-Potel, Cintia Mateo-Mateo, Laura Rodríguez-Lorenzo, Ramón A. Álvarez-Puebla and Luis M. Liz-Marzán.

TITLE: [Surface-enhanced Raman scattering biomedical applications of plasmonic colloidal particles.](#)

REF.: **J. Roy. Soc. Interface.** (2010), 7, S4335-S450.

AUTHORS: **Sara Abalde-Cela**, Peter Ho, Benito Rodríguez-González, Miguel A. Correa-Duarte, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán, Nicholas A. Kotov,

TITLE: [Loading of exponentially grown LBL films with Ag nanoparticles and their application for generalized SERS detection.](#)

REF.: **Angew. Chem. Int. Ed.** (2009) 48, 5326 –5329.

CONFERENCE PROCEEDINGS / DISSEMINATION (22)

- AUTHORS: **S. Abalde-Cela**, R. Best, J. J. Lyczakowski, Z. Yu, C. Abell, A. G. Smith.
 TITLE: Novel tools for biotechnology: label-free analysis and sorting of microalgae and cyanobacteria in microdroplets by native chlorophyll fluorescence
 MEETING: Microfluidics Congress
 REF.: London (UK), 2015
-
- AUTHORS: P. Taladriz-Blanco, **S. Abalde-Cela**, C. Abell.
 TITLE: Highly controllable synthesis of gold nanostars in microdroplets
 MEETING: Microfluidics Congress
 REF.: London (UK), 2015
-
- AUTHORS: **S. Abalde-Cela**, A. Gould, X. Liu, E. Kazamia, C. Abell, A. G. Smith.
 TITLE: High-throughput detection of ethanol-producing cyanobacteria in a microdroplet platform
 MEETING: Phyconet Annual Conference
 REF.: London (UK), 2015
Best oral presentation award
<https://twitter.com/PHYCONET/status/636528239092084737>
-
- AUTHORS: A. R. Salmon, R. Esteban, R. W. Taylor, J. T. Hugall, **S. Abalde-Cela**, O. A. Scherman, J. Aizpurua, C. Abell, J. J. Baumberg
 TITLE: Real-time Monitoring of Plasmonics and SERS in Microfluidic Droplets: Towards the Artificial Selection of Microalgae for Biofuel Production
 MEETING: SPP7 Conference
 REF.: Jerusalem (Israel), 2015
-
- AUTHORS: **S. Abalde-Cela**, R.A. Álvarez-Puebla, C. Abell, L.M. Liz-Marzán
 TITLE: Real-time dual-channel multiplex SERS ultradetection.
 MEETING: Lab-on-a -chip Asia 2014
 REF.: Nanyang Technological University (Singapore), 2014
Best poster Award
-
- AUTHORS: **S. Abalde-Cela**, A. Gold, X. Liu, E. Kazamia, A.G. Smith, C. Abell.
 TITLE: High-throughput analysis of cyanobacteria ethanol producers as means of fluorescence in a microdroplet platform
 MEETING: Lab-on-a -chip Asia 2014
 REF.: Nanyang Technological University (Singapore), 2014
 AUTHORS: **S. Abalde-Cela**.

-
- TITLE: Microdroplets: Tiny lab toys with enormous potential
MEETING: **Open graduate day admissions – Dpt. Chemistry – Dissemination talk**
REF.: University of Cambridge (UK), 2014
-
- AUTHORS: **S. Abalde-Cela.**
TITLE: Microdroplets: Tiny lab toys with enormous potential in applied materials and biological science
MEETING: **INVITED TALK**
REF.: Universidade de Vigo (Spain), 2014
-
- AUTHORS: **S. Abalde-Cela.**
TITLE: Nanotecnología: promesas y riesgos
MEETING: **INVITED TALK – Instituto Cañada Blanch**
REF.: London (UK), 2014
-
- AUTHORS: Elena Kazamia, **Sara Abalde-Cela**, Chris Abell and Alison G. Smith.
TITLE: Designing consortia to increase productivity of ethanol-producing cyanobacteria.
MEETING: 4th International Bielefeld-CeBiTec Research Conference: Prospects and challenges for the development of algal biotechnology
REF.: Bielefeld University (Germany), 2014
-
- AUTHORS: Vanesa López-Puente, **Sara Abalde-Cela**, Paula C. Angelomé, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán.
TITLE: Plasmonic mesoporous composites as molecular sieves for SERS. (Poster and oral contribution).
MEETING: 1st SAVVY Workshop
REF.: San Sebastián (Spain), 2012
-
- AUTHORS: **Sara Abalde-Cela**, Rafael Contreras-Cáceres, Pablo Guardia-Girós, Antonio Fernández-Barbero, Jorge Pérez-Juste, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán
TITLE: Polymer hybrid magnetic/optical traps for SERS ultradetection of pollutants.
MEETING: XIX Escuela Internacional de Verano Nicolás Cabrera-International Summer School on Fluorescent Nanoparticles in Biomedicine.
REF.: Madrid (Spain), 2012
-

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- AUTHORS: D. Tsoutsi, **S. Abalde-Cela**, R. A. Álvarez-Puebla, L. M. Liz Marzán.
- TITLE: Novel strategies for generalized SERS detection.
- MEETING: V Workshop de Nanociencia y Nanotecnología Analítica
- REF.: Toledo (Spain), 2011
-
- AUTHORS: **S. Abalde-Cela**, J. M. Hermida-Ramón, P. Contreras-Carballada, L. De Cola, A. Guerrero-Martínez, R.A. Álvarez-Puebla, L.M. Liz-Marzán.
- TITLE: SERS Chiral Recognition and Quantification of Enantiomers through Cyclodextrin Supramolecular Complexation
- MEETING: 4th Iberian Meeting on Colloids and Interfaces (RICI4)
- REF.: Oporto (Portugal), 2011
-
- AUTHORS: **Sara Abalde-Cela**, Rafael Contreras-Cáceres, Pablo Guardia-Girós, Antonio Fernández Barbero, Jorge Pérez-Juste, Ramón A. Álvarez-Puebla, and Luis M. Liz-Marzán.
- TITLE: Multifunctional microgel magnetic/optical traps for ultrasensitive SERS detection.
- MEETING: International Workshop on Nanoplasmonics for energy and the environment.
- REF.: Sanxenxo (Spain), 2011
-
- AUTHORS: **Sara Abalde-Cela**, Martin Fischlechner, Baptiste Auguie, Chris Abell, Ramón A. Álvarez-Puebla, Luis Liz-Marzán.
- TITLE: Fabrication of ultrasensitive SERS substrates with microdroplets.
- MEETING: International Workshop on Molecular Materials.
- REF.: Sanxenxo (Spain), 2010
-
- AUTHORS: **Sara Abalde-Cela**, Peter Ho, Benito Rodríguez-González, Miguel A. Correa-Duarte, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán, Nicholas A. Kotov.
- TÍTULO: Exponentially grown LBL films with silver nanoparticles as SERS optical accumulators for ultrasensitive detection.
- MEETING: 23rd Conference of the European Colloid and Interface Society
- REF.: Antalya (Turquía), 2009
-
- AUTHORS: C. Mateo-Mateo, **S. Abalde-Cela**, R. Álvarez-Puebla, L. Liz-Marzán.
- TITLE: Fabrication of magnetite coated micron-sized polymer beads.
- MEETING: Reunión Ibérica de Coloides e Interfases (RICI)
- REF.: Granada (Spain), 2009

AUTHORS: R.A. Álvarez-Puebla, L. Rodríguez-Lorenzo, **S. Abalde-Cela**, M. Sanles-Sobrido, P. Aldeanueva-Potel, C. Mateo-Mateo, L.M. Liz-Marzán.

TITLE: Design of hybrid materials for SERS direct and indirect sensing.

MEETING: Reunión Ibérica de Coloides e Interfases (RICI)

REF.: Granada (Spain), 2009

AUTHORS: **Sara Abalde-Cela**, Marcos Sanles-Sobrido, Miguel A. Correa-Duarte, Ramón A. Álvarez Puebla, Luis M. Liz-Marzán.

TITLE: Micron-sized beads coated with silver nanoparticles as discrete substrates for ultrasensitive analysis via SERS.

MEETING: Reunión Ibérica de Coloides e Interfases (RICI)

REF.: Granada (Spain), 2009

AUTHORS: C. Mateo-Mateo, **S. Abalde-Cela**, M. Correa-Duarte, R. Álvarez-Puebla, L. Liz-Marzán.

TITLE: Magnetic functional microbeads for bioapplications.

MEETING: II Workshop on nanomedicine research.

REF.: Santiago de Compostela (Spain), 2009

AUTHORS: **Sara Abalde-Cela**, Marcos Sanles-Sobrido, Miguel A. Correa-Duarte, Ramón A. Álvarez Puebla, Luis M. Liz-Marzán.

TITLE: Silver nanoparticle-coated microspheres as discrete substrates for ultrasensitive analysis via SERS.

MEETING: II Workshop on nanomedicine research

REF.: Santiago de Compostela (Spain), 2009

OTHERS

➤ Peer-reviewer:

- [Journal of Nanomaterials](#)
- [Sensors](#)
- [Toxicology Reports](#)
- [Analytica Chimica Acta](#)
- [Langmuir](#)

➤ Featured in news:

- January 2014-[Faro de Vigo](#)- 'Premio a las horas de biblioteca y laboratorio'
- September 2013-[Faro de Vigo](#)- 'Gallegos en la cima-Sara Abalde-Cela'
- December 2012-[Faro de Vigo](#) - 'Una apuesta por la investigación y la cultura'
- December 2012-[La Voz de Galicia](#)-'La Diputación premia a investigadores y artistas'

-
- **START-UP.** Participant in **ViaGalicia 2015** startup competition with the project NanoSmarTech. Among the 20 finalists.
 - **START-UP. i-Teams – Commercialising creativity scheme for marketing assessment- Colour-changing materials**, University of Cambridge, UK (2014)
 - **2013 Extraordinary PhD Award** of the University of Vigo
 - **FCE Cambridge ESOL Certificate.** Score: 75% (2012)
 - **Award from the ‘Diputación de Pontevedra ‘ -Best Project of Science and Technology :** ‘Ultra-detection of biomarine toxins through Surface Enhanced Raman Scattering Spectroscopy (SERS)’, April 2011, Pontevedra (Spain)
 - ‘Multivariate analysis of sensitive data’ CAMO Course. 10th-12th March, 2010. Madrid (Spain)
 - Ministry of Science and Education **PhD Fellowship (FPU Fellowship)**, 2010-2014, University of Vigo. Colloid Chemistry Group
 - Ministry of Science and Education **Studentship** for the study of a foreign language., 1 month-June 2008, Toronto (Canada)
 - Ministry of Science and Education **Studentship** for department collaboration on the last year of the BSc. Chemistry. 2007-2008, University of Vigo. Organic Chemistry Department
 - ‘Implantación de un Sistema de Calidad según La Norma ISO 9000:2000’, February 2007 – 40 hours – University of Vigo
 - ‘Leonardo da Vinci’ **Studentship** - Intensive English Language Course - July 2003., International House Dublin. Dublin (Ireland)

REFERENCES

- For references about Sara Abalde-Cela, you can contact with:
 - Prof. Chris Abell
ca26@cam.ac.uk
 - Prof. Luis Liz-Marzán
llizmarzan@cicbiomagune.es
 - Prof. Alison Smith
as25@cam.ac.uk