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**PROFESSIONAL EXPERIENCE****Since May11 Ramón y Cajal Researcher - Institut de Ciència de Materials de Barcelona.**

*In the group of Nanoparticles and Nanocomposites leaded by Dr. Anna Roig. I am leading a project involving the synthesis and evaluation of magnetic nanoparticles for drug delivery and contrast agents. This project is highly interdisciplinary and combines chemistry, materials science and bioengineering.*

**Since Sept11 Cofounder of OsmoBlue.**

*OsmoBlue is a company focused in the generation of energy based in a technological innovation based on osmosis.*

**2008-2011 Postdoctoral Researcher - Harvard University, Cambridge, USA.**

*Department of Chemistry and Biological Chemistry in the laboratory of Prof. George Whitesides, and the Wyss Institute of Bioinspired Engineering. Research focused in the development of a tridimensional platform for cell cultures using paper, lead and managed by myself.*

**2005-2008 Postdoctoral Researcher - Imperial College London, UK.**

*Biomedical Engineering Institute and Materials Department in the lab of Prof. Molly M. Stevens. I lead and developed new nanomaterials for medical applications, detection and drug delivery.*

**2008 Postdoctoral Researcher - Massachusetts Institute of Technology, Cambridge, USA.**

*Department of Materials Science and Engineering in the group of Prof. Francesco Stellacci. Investigation on the replication of surfaces with peptides and DNA for medical and electronic applications.*

**2006 (Oct) Visiting Researcher Korean Research Institute of Biomedical and Bioengineering (Daejeong, Korea).**

*Research on the interaction of carbon nanotubes and proteins. Collaboration with Dr. Bong Hyun Chung and Ms. Jin Young Jeong.*

**2000-2005 PhD in Chemistry Institut de Ciència de Materials de Barcelona.**

*in the Laboratory of Inorganic Materials and Catàlisis . Ph.D. Thesis tittle: "New derivatives of dicarba-closo-dodecaborane that include S, Se, N and P. Their catalytic and supramolecular properties. Supervisor: Prof. Clara Viñas. [Thesis manuscript](#) (abstract).*

**2003 Predoctoral Researcher Liège University (Belgium)**

*In the Macromolecular Chemistry and Organic Catalysis Lab. Centre for the education and research on Macromolecular Chemistry. Supervisor: Prof. Albert Demonceau.*





2001-2002 **Assistant high school teacher** in chemistry in the Menéndez y Pelayo Institute, Barcelona.

June-Sept99 **Research assistant** *Universidad de Girona*

*In the group of Catalysis and Bio-Inorganic Chemistry. Prof. Antoni Llobet. Project: "Activation of oxygen in macrocyclic complexes of copper".*

## EDUCATION

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2014 MBA at the University Pompeu Fabra, (graduation date April 2016)

2000-2005 **PhD Chemistry**, in the *Lab. Inorganic Materials and Catalysis at ICMAB*.

1996-2000 **Degree** in Chemistry, University of Girona.

## SCIENTIFIC PUBLICATIONS & PATENTS

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### Summary publications

Number of total citations, without auto-citations (30/11/2014) =558, h-index= 13.

Number of publications: 25

Impact index averaged of the journals (JCR2012): 5.17

Number of citations averaged for publication: 24

Number of citations of most cited publications: 122

### List of publications

1. **New Derivatives of [NHMe<sub>3</sub>][7-Me-μ-(9,10-HMeC)-7-nido-CB<sub>10</sub>H<sub>10</sub>]**. J.Bould, A. Laromaine, C.Viñas, F. Teixidor, L. Barton, N. P. Rath, R. E. K. Winter, R. Kivekäs, R. Sillanpää; *Organometallics*, **2004**, 23, 3335-3342. DOI: 10.1021/om030487v Impact factor:4.145, 6th/ 44 area of chemistry, inorganic & nuclear.

2. **Sulfur and tin derivatives of 1-(2'-pyridyl)-ortho-carborane, 1-R-2-X-1,2-C<sub>2</sub>B<sub>10</sub>H<sub>10</sub> (R = 2-pyridyl, X = SH or SnMe<sub>3</sub>)**, Andrei S. Batsanov, A. V. Churakov, M. A. Fox, T. G. Hibbert, Judith A.K. Howard R. Kivekäs, A. Laromaine, R. Sillanpää, F. Teixidor, C. Viñas, and K. Wade, (orden alfabético) *Dalton Transc.*, **2004**, 22, 3822-3828. DOI: 10.1039/B411099D Impact factor: 3.806, 8th/ 44 area of chemistry, inorganic & nuclear. Citations: 24.

3. **1,2-Bis(thiomethyl)-1,2-dicarba-closo-dodecaborane**. A. Laromaine, C. Viñas, F. Teixidor, R. Kivekäs, R. Sillanpää, *Acta Crys.*, **2004**, C60, o254-o256. DOI: 10.1107/S0108270104013423. Impact factor: 0.429. 21th/ 23 area of crystallography. Citations: 6

4. **Synthesis, reactivity and structural studies of Carboranyl thioethers and disulfides**. A. Laromaine, F. Teixidor, R. Kivekäs, R. Sillanpää, R. Benakki, B. Grüner, C. Viñas, *Dalton Transc.*, **2005**, 10:1785-1795. DOI: 10.1039/b502328a. Impact factor: 3.806, 8th/ 44 area of chemistry, inorganic & nuclear. Citations: 25.

5. **Carbon extrusion in 1,2-dicarba-closo-dodecaboranes: Regioselective Boron substitution in ten-vertex closo-monocarbaborane Anions**. A. Laromaine, F. Teixidor, C. Viñas, *Angew. Chem.* **2005**, 44: 2220-2222. DOI: 10.1002/anie.200462209. Impact factor: 13.734, 7th/ 152 area of chemistry, multidisciplinary. Citations: 16.

6. **Synthesis, Reactivity and Structural Studies of Selenide Bridged Carboranyl compounds.** A. Laromaine, F. Teixidor, R. Kivekäs, R. Sillanpää, M. Arca, V. Lippolis, E. Crespo, C. Viñas, *Dalton Transc.*, **2006**, 44, 5240-5247. DOI: 10.1039/b610944f. Impact factor: 3.806, 8th/ 44 area of chemistry, inorganic & nuclear. Citations: 16.
7. **Synthesis of small carboranylsilane dendrons as scaffolds for multiple functionalizations.** R. Núñez, A. Gonzalez-Campo, A. Laromaine, F. Teixidor, R. Sillanpää, R. Kivekäs, C. Viñas, *Org. Lett.*, **2006**, 8 (20), 4549-4552. DOI: 10.1021/ol061767k. Impact factor: 6.142, 6th/ 57 area of chemistry, organic. Citations: 17.
8. **Electrophoretic investigation of the boron cluster anion [7-(2'-pyridyl)-nido-7,8-dicarbaundecaborate](-) and its protonated zwitterionic product** R. Vespalec, A. Langauf, A. Laromaine, C. Viñas, H. Horakova, *J. of Sep. Science.*, **2007**, 30: 2733-2741. DOI: 10.1002/jssc.200700224. Impact factor: 2.591, 25th/ 75 area of chemistry, analytical. Citations: 1.
9. **Synthesis and investigation of the boron cluster anion [7(2'-pyridyl)-7,8-nido-dicarbaundecaborate] and its protonated form** F. Teixidor, R. Kivekäs, R. Sillanpää, A. Laromaine, C. Viñas, *Dalton Transc.*, **2007**, 31, 3369-3377. DOI: 10.1039/B411099D. Impact factor: 3.806, 8th/ 44 area of chemistry, inorganic & nuclear. Citations: 12
10. **Protease-triggered dispersion of nanoparticles assemblies.** A. Laromaine, L. Koh, M. Murugesan, R. V. Ulijn, M. M. Stevens, *J.Am.Chem.Soc.* **2007**, 129(14): 4156-4157. DOI: 10.1021/ja0706504. Impact factor:10.677, 11th/ 152 area of chemistry, multidisciplinary. C: 104. Highlighted in en Nature News doi:10.1038/news.2010.14.
11. **Fluorescent or not? Size-dependent fluorescence switching for polymer-stabilized gold clusters in the 1.1–1.7 nm size range** N. Schaeffer, B. Tan, C. Dickinson, M. J. Rosseinsky, A. Laromaine, D. W. McComb, M. M. Stevens, Y. Wang, L. Petit, C. Barentin, D. G. Spiller, A. I. Coope, R. Lévy. *Chem. Comm.*, 2008, 34, 3986 – 3988. DOI: 10.1039/b809876j. Impact factor:6.378, 19th/ 152 Field of chemistry, multidisciplinary. Citations: 48.
12. **Borane reaction chemistry. Alkyne insertion reactions into boron-containing clusters. Products from the thermolysis of [6,9-(2-HC≡C-C<sub>5</sub>H<sub>4</sub>N)<sub>2</sub>-arachno-B<sub>10</sub>H<sub>12</sub>]** J. Bould, A. Laromaine, N. J. Bullen, C. Viñas, M. Thornton-Pett, R. Sillanpää, R. Kivekäs, J. D. Kennedy, F. Teixidor *Dalton Trans.*, 2008, 12, 1552-1563. DOI: 10.1039/b715845a. Impact factor: 3.806, 8th/ 44 Field of chemistry, inorganic & nuclear. Citations: 8.
13. **Synthesis, reactivity and complexation studies of N,S exo-heterodisubstituted o-carborane ligands. Carborane as a platform to produce the uncommon bidentate chelating (pyridine)N-C-C-C-S(H) motif** F. Teixidor, A. Laromaine, R. Kivekäs, R. Sillanpää, C. Viñas, H. Horakova, R. Vespalec *Dalton Trans.*, 2008, 3: 345-354. DOI: 10.1039/b715362g. Impact factor: 3.806, 8th/ 44 Field of chemistry, inorganic & nuclear. Citations: 13.
14. **Paper-Supported 3D Cell Culture for Tissue-Based Bioassays**, R. Derda, A. Laromaine, Akiko Mamoto, S. Tang, T. Mammoto, D. Ingber, G. M. Whitesides. *Proc. Natl. Acad. Sci.* 2010, 106, 44, 18457-18462. DOI: 10.1073/pnas.0910666106. Impact factor:9.737, 4/ 56 Field of multidisciplinary sciences. Citations: 73.  
Highlighted in Nature Methods 2009, 6, 12, 865.

15. **Supramolecular Replication of peptide and DNA patterned arrays** A. Laromaine, O. Akbulut, F. Stellacci, M. M. Stevens, *J. Mater. Chem.* 2010, 1, 68-70. DOI: 10.1039/b915803k. Impact factor: 6.108, 20th/ 241 Field of materials science, multidisciplinary. Citations: 1 Journal cover
16. **Exploiting SERS Hot Spots for Disease-Specific Enzyme Detection** R. C. Maher, L. Koh, A. Laromaine, J. A.G. Dick, S. A. Maier, M. M. Stevens, L. F. Cohen- *J. Phys. Chem C*, 2010, 114, 7231- 7235. DOI: 10.1021/jp905493u. Impact factor: 4.814, 27th/ 241 Field of materials science, multidisciplinary. Citas: 15.
17. **Uncommon Coordination Behaviour of P(S) and P(Se) Units when Bonded to Carboranyl Clusters: Experimental and Computational Studies on the Oxidation of Carboranyl Phosphine Ligands.** A-R. Popescu, A. Laromaine, F. Teixidor, R. Sillanpää, R. Kivekäs, J. I. Llambias, C. Viñas *Chemistry A- European Journal*, 2010, 17, 16, 4429-4443. DOI: 10.1002/chem.201003330. Impact factor: 5.831, 21th/ 152 Field of chemistry, multidisciplinar. Citations: 10.
18. **Multizone paper platform for 3D cell cultures** R. Derda, S.K Tang\*, A. Laromaine \*, B. Mosadegh, E. Hong, M. Mwangi, Akiko Mamoto, D. Ingber, G. M. Whitesides. *Plos One*, 5(6): e18940. DOI: 10.1371/journal.pone.0018940. Impact factor: 3.730, 7th/ 56 Field of Multidisciplinary Sciences. C: 24. Highlighted in Biotechniques.com
19. **Measuring markers of liver function using a micropatterned paper device designed for blood from a Fingerstick** S. J. Vella, P. Beattie, R. Cademartiri, A. Laromaine, A. W. Martinez, S. T. Phillips, K. A. Mirica, G. M. Whitesides *Anal. Chem.* 2012, 84, 6, 2883-2891. DOI: 10.1021/ac203434x. Impact factor: 5.695, 3th/ 75 Field of chemistry. Citations: 45.
20. **A microfluidic device for whole-animal drug screening using electrophysiological measures in the nematode *C. elegans*** S. Lockery, E.S. Hulme, W. M. Roberts, K.J. Robinson, A. Laromaine, T.H. Lindsay, G. M. Whitesides *Lab on a chip*. 2012, 12, 12, 2211-2220. DOI: 10.1039/c2lc00001f. Impact factor: 5.697, 13th/ 69 Field of nanoscience and nanotechnology. Citations: 11.
21. **In vitro angiogenic Performance and in vivo brain Targeting of Magnetized Endothelial Progenitor Cells for Neurorepair Therapies** E. Carezza, V. Barceló, A. Morancho, L. Levander, C. Boada, A. Laromaine, A. Roig, J. Montaner, A. Rosell, *Nanomedicine* 2013,10, 1, 225-234. DOI: 10.1016/j.nano.2013.06.005. Impact factor: 5.260. 16th/ 69 Field of nanoscience and nanotechnology.
22. **Shifts in the Distribution of Mass Densities Is a Signature of Caloric Restriction in *Caenorhabditis elegans*** A. Reina, A. B. Subramaniam, A. Laromaine, A. D.T: Samuel, G. M. Whitesides. *Plos One*. 2013, 8, 7 e69651. DOI: 10.1371/journal.pone.0069651. Impact factor: 3.730, 7th/ 56 Field of Multidisciplinary Sciences.
23. **Enhanced stability of superparamagnetic iron oxide nanoparticles in biological media using a pH adjusted-BSA adsorption protocol** SM Yu, A. Laromaine\*, A. Roig\* *J. Nanoparticle Research* 2014, DOI: 10.1007/s11051-014-2484-1.
24. **Origami magnetic cellulose: controlled magnetic fraction and patterning of flexible bacterial cellulose** M. Zeng, A. Laromaine,\* W. Feng, P.I A. Levkin, A.Roig\* *J. Mat Chem C*, 2014, 2, 6312-6318. DOI: 10.1039/C4TC00787E.

25. . **Bacterial Cellulose Films: Influence of bacterial strain and drying route on film properties** M. Zeng, A. Laromaine,\* A. Roig\*. *Cellulose*, 2014. DOI: 10.1007/s10570-014-0408-y

### Patents

1. Patent with Imperial Innovations "Particle aggregate, useful for e.g. diagnosing disease or condition associated with enzyme, comprises particles linked to other particles via linkers that are capable of being cleaved by enzyme" Molly M. Stevens, R. Ulijn, A. Laromaine, L. Koh, Priority application no. 0524313.4 filling date 29/11/2005 and lapsed to PCT application no. PCT/GB06/004459 filling date 29/11/2006. WO 2007/063300A2
2. Patent with Harvard university, GM Whitesides, R. Derda, A. Laromaine "Paper-based cellular arrays" (HU-3231)-.2009. In proces to licence it to a start- up in Cambridge (MA).
3. Patent wiht Harvard university, GM Whitesides, C. Mace, A. Laromaine, J. Barber, R. Cademartiri "Alginate Hydrogel Fibers and Related Materials" (HU 3718)-2011.
4. Patent with Harvard university, GM Whitesides, A. Laromaine, C. Mace, A. Reina, R. Derda, E. Hulme, K. Mirica, "Density analysis of living organisms by magnetic levitation".
5. An Apparatus and Method for Generating Energy. E. Dahan, A. Laromaine. Suiza. 2011-CH1468. PCT. Licenced to OsmoBlue.
6. Patent with CSIC y FMNT. Microwave-assisted method for deposition of nano- and micro-particles on fibers. V. Reyes, A. Pariente, A. Laromaine, A. Roig.

### Book Chapters

- Organic Nanomaterials: Synthesis, Characterization and Device Applications. Authors: Edited by Tomas Torres and Giovanni Bottari. Wiley CH. Contribution by a chapter: Self-Assembled Monolayers as Model Biosurfaces. A. Laromaine, C. R. Mace. ISBN: 978-1-118-01601-J. DOI: 10.1002/978118354377.

### PROJECTS

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I have participated in more than 20 research projects international and national from as principal investigator or research participant. List below are active projects.

#### Projects as Principal Investigator

- "Three-dimensional *in vitro* environments of Nanoparticles & Cells" Ramon y Cajal startup, May2011-May2013. 15.000€ IP
- "Interactions in Three-dimensional (3D) *in vitro* environments of Nanoparticles and Cells" Marie Curie Career Integration Grants (CIG), Call: FP7-PEOPLE-2011-CIG. (100.000 €)

#### Projects as Participant Investigator

- Project COST Group of *C. elegans* New Investigators in Europe (GENIE).
- Marie Curie Iberian-Portugal chapter, co-founder. 1.500€ Sept. 2014- Sept 2015.

- “Advanced preparation techniques of nanoparticles and their biomedical and environmental assessment” (AdvancedNP) Responsible Dr. Anna Roig. MAT2012 35324. (Enero 2013- Diciembre 2016). 105.300 €
- “Rational design of hybrids organic- inorganic interfaces: the next step towards advanced functional materials” (Cost Action MP1202) Responsible Dr. Marie Helene Delville. (2013-2016).
  
- “Endothelial Progenitor Cells loaded with Superparamagnetic Iron Oxide Nanoparticles for Neurorepair Therapies” (2011120049) Mistral beam line. Responsible: Dr. Anna Roig and Dr. Anna Rosell.
  
- Member of the Emergent Research Group in the framework of Pla de Recerca de Catalunya – Generalitat de Catalunya. 2014-SGR-213. Responsible Dr. Anna Roig. 25.000 €

## RESEARCH DISSEMINATION

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Since 2001 I have participated in 40 international conferences and seminars at national and international level, explaining my research in the format of posters or oral presentations

## COORDINATION – TEACHING ACTIVITIES

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- Fall 2011-2013, Coordinator and Professor of the Nanomedicine and Biomaterials Section of the Master of Nanotechnology of the UAB (Barcelona).
  
- Fall 2014, Professor of the Nanomedicine and Biomaterials Section of the Master of Nanotechnology of the UAB (Barcelona).

## STUDENTS SUPERVISION - TEAM

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### Undergraduate Students

- Paul Schied, Supervision of undergraduate student in Harvard University- Sept 2009-Dec 2011.
- Supervisor of a project in the Idea Translation Laboratory in Harvard University “Light and Cellular phones” Nov 2009- June 2010.
- Veronika Kivenson, undergraduate student Summer and Fall 2010 at Harvard University.
- Eduard Masvidal Codina. Summer 2013 at ICMAB.
- Isabel Martinez Hausman, January- June 2014 (UAB- ICMAB)
- Olga Muntadas, January- June 2014 (UAB- ICMAB)
- Albert Vila Summer 2014 (ICMAB).
- Rita Salaver, Summer 2014 (ICMAB)
- Pablo Sánchez Ocal July 2014- July 2015. Master physics/ Mathematics (ICMAB)

### Master Students

- Sun Qi, Master in Nanotechnology, “Peptide Nanoparticles” Summer 2006. Imperial College London.
- Shoshanna Isaacson, Master in Nanotechnology, “Study of peptide-based gold nanoparticle bioconjugate assemblies” with distinction, year 2006-2007. Imperial College London.

- Zeynep Ergonenc, Master student from Univ. Viena, Erasmus, Sept. 2012-March 2013.
- Ilargi Napal, Master in Advanced Biotechnology, Dic2013-June 2014. UAB-ICMAB.

#### PhD Students

- Co-supervision Dr. Liling Koh. "Investigations of bio-responsive peptide inorganic nanomaterials" (Imperial College 2005-2008).
- Co-direction Muling Zeng, China Government fellowship, (Oct 2011-Sept2014). Excellent cum laude. "Bacterial cellulose: fabrication, characterization and biocompatibility studies"  
Currently: Postdoctoral researcher at the Univ. Leeds (Prof. F. Meldrum)
- Co-direction Siming Yu, China Government fellowship, (start ICMAB, Oct 2012).
- Supervision Laura González, Grant FPU (start ICMAB, April 2013).

#### PostDoctoral Researchers

- Dr. Maria Milla, (April 2013-Sept 2014). Currently Postdoctoral Researcher at the ETH.

#### HONORS

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March2014- Selected as Invited Promising Researcher in China (SCUT 2014). Travel bursary at the South China University during 2014.

Different fellowships from Sep 2000 to May11 from international and national funding agencies.

#### Awards

May2014, Winners of the Award ReachOut of science divulgation, the New Materials at your School, ReachOut Project from E-MRS Spring 2014.

March 2014 Award "Fem.talent" to the Emerging Talent.

Sep 2013 Best Flash Presentation in the "Biannual Chemistry conference" of the Royal Spanish Chemistry Society.

May 2012- Award "Fondo de Emprendedores" by Repsol to the "Osmoblu" Project.

Nov 2007 "Premio Extraordinario de Doctorado". Award to the best completed PhD thesis at the "Universitat Autònoma de Barcelona" in 2005.

#### ACTIVITIES OF SCIENTIFIC DIVULGATION

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- "CSIC a l'Aula. A researcher at your school" program. ICMAB researchers visit high schools to motivate students for science, more specifically for Materials Science and Nanotechnology. 2011 onwards.

- "ReachOut Project" awards from E-MRS Spring 2014. Mayo 2014.

- "Manuel Arroyo III" awards scientist speaker. February 2014.
- "Quèquicom" TV program at TV3 public regional channel. Participation to talk on paper.

### ACTIVITIES OF TECHNOLOGY TRANSFER

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- "Gold nanoparticles-Peptide Conjugates" patent from the Postdoctoral period at the Imperial College London. Currently on negotiations with a Nanotechnology specialized company. Consultant to advise on new applications for this patent.
- "Diagnostics for All" (DFA). Foundation created by Prof. G.M. Whitesides to develop new diagnostic methods for diseases touching undeveloped countries. Help to coordinate the optimization of a system for liver-related diseases. [www.dfa.org](http://www.dfa.org).
- Collaboration with VERTEX ([www.vrtx.com](http://www.vrtx.com)) pharmaceutical company on projects related with 3D cell culture papelón paper and the development of a microfluidic chip for the study of *C. elegans*.
- Wyss Institute member (Boston, MA), pioneering institution on multidisciplinary study between materials science and biology. <http://wyss.harvard.edu>
- "Science and Cooking" course at Harvard University. Fall 2010. Professors and famous catalan chefs gave lessons together. Collaboration in the organization of visits, at the public relations stage, with media, and Catalan to English translation during the visits.

### OSMOBLUE

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**OsmoBlue**  
ENERGY

OsmoBlue develops an innovative technology able to recover waste heat at low temperature (as low as 35°C) to electricity. Our target are large industries, as cement and paper plants as first customers in order to reduce their cooling costs and recover their waste heat.

OsmoBlue have won some prizes from Swiss and Spanish institutions.

Awards of OsmoBlue  
[www.osmoblue.com](http://www.osmoblue.com)

**Helbling Group**



**Fundación  
REPSOL**



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