MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES

CURRICULUM VITAE

Part A. PERSONAL INFORMATION

CV date	01/10/2025

First and Family name	ANNA LAROMAINE SAGUE		
ID number	77917303L	Age	47
Gender (*)	Female	Birth date	16/05/1978
Researcher numbers	Researcher ID	D-1964-2009	
	Orcid code	0000-0002-4764-0780	

A.1. Current position

Institution	INSTITUTO CIENCIA DE MATERIALS DE BARCELONA- CSIC		
Department	GRUPO NANOPARTICLES AND NANOCOMPOSITES		
Address and Country	CAMPUS UAB, Bellaterra, Spain		
Phone number	+34935801853	E-mail	alaromaine@icmab.es
Current position	Cientifica Titular	From	24/05/2021
Espec. cód. UNESCO	2303.04, 3312.99, 2301.02, 2302.24, 2211.28		
Palabras clave	nanoparticles, c. elegans, cellulose, in vitro, bio interfases, híbrids materials		

A.2. Previous professional status

Period	Position/Institution/Country/Interruption cause
May 2005- Feb 2008	Postdoctoral researcher Imperial College (Prof. Molly M. Stevens)
March- August 2008	Postdoctoral researcher MIT (Prof. Francesco Stellacci)
Sept 2008- March 2011	Postdoctoral researcher Harvard University (Prof. George W. Whitesides)
May 2011- June 2016	Ramon y Cajal researcher at the ICMAB-CSIC
Dec 2017- Jun 2018	Maternity leave
July 2016- May 2021	Investigadora distinguida ICMAB-CSIC

A.3. Education

Licenciatura Química	Universidad de Girona	2000
Doctorado en Química	Universidad Autónoma de Barcelona	2005
Master Business Administration	UPF Barcelona School of Management	2016

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Doctor in Chemistry from the Autonomous University of Barcelona with extensive international scientific experience (6 years abroad).

My PhD focused on the molecular synthesis of carboranes for catalysis and medical therapy at the Institute of Materials Science of Barcelona (ICMAB- Prof. Clara Viñas). Then I moved to Imperial College London – as a postdoctoral scientist with Prof. Molly Stevens (UK) (2005-2007), where I entered the nanotechnology disciplines, where I developed a colorimetric sensor for detecting proteases based on gold nanoparticles and peptides, fully funded by AGAUR. In my second stay at MIT- Prof. Francesco Stellacci (USA) (2007-2008), I studied the replication of surfaces with DNA and peptides using supramolecular interactions. The aim to develop biomaterials efficiently and in a high-throughput manner allowed me to work at Harvard – Prof. George Whitesides (USA) (2008-2011), where we produce cell cultures in innovative three-dimensional cellulose-based structures for biological assays and the use of *C.elegans* in microfluidic chips. In this last avenue, I was awarded a Fulbright scholarship. This background awarded me in 2011, the prestigious Ramon y Cajal researcher, and I joined ICMAB.

In 2021, I was established as a permanent Senior scientist at the CSIC. I combine materials science, chemistry, and biology for various applications in the Nanoparticles and Nanocomposites Group. We develop biocompatible biomaterials, based on cellulose and nanoparticles to create multifunctional compounds and materials that respond to a stimulus to be applied in biomedicine. The interaction of these materials is evaluated efficiently and in a high-throughput manner within 2D and 3D cells and the small model organism *C.elegans.* We optimize the physical-chemical properties of these materials using economical biocompatible approaches with low economic impact.

I have authored more than 79 publications with a total citation of 2723 (7March2025 (JCR)) and H-index of 32, with an average of 42 citations per item, which indicates a solid work that is well received by the community. The articles are published with many collaborators worldwide, indicating internationalization and a strong network. Additionally, I am the corresponding author of half of them over the last 5 years.

I have been invited to speak and keynote at key conferences, such as Bacterial Nanocellulose International BNCF8 (Shangai 2024) and the Spanish Worm meeting in Sevilla 2024, both of which are in my active research lines.

We are engaged in technology transfer activities and have active contact with companies where our work could be interesting (indicated by the 2 NDAs we signed annually at least). I want to highlight that Nagi Bioscience has selected our lab as a priority access lab and given us full access to their innovative equipment in recognition of our international and well-considered work in the *C. elegans* field. Additionally, I co-founded Osmoblue (2012-2018). This spin-off company allowed us to raise more 900kE, learn about the in-outs of the industrial sectors, and complete my background with a Master of Business Administration by the UPF (2016) fully funded by the UPF.

I consider mentoring researchers, transferring our development to society by working with industries, and disseminating our work to the general audience. Therefore, my activities in those sections are significant. I have mentored 9 PhD students and 34 master's and bachelor's students. I regularly participate in mentoring programs such as Joves I Ciència (La Pedrera), host students from the vicinities universities, and participate in the internal mentoring program at the ICMAB.

I disseminate our work using different media, including social networks, websites, and personal activities. I regularly participate in Dones I ciència, Science Day, European Researchers, and programs and visits organized by ICMAB. Twice per year, I visit a primary school to show our research, where I want to visualize our work. In particular, I would like to be a role model who reaffirms to young girls that they can work in science.

I participate in governing bodies such as the executive member of Conexión Nanomedicine—CSIC, a vocal member of the Specialized Group of Coloides y Interfaces (GECI), and an executive member of the AMIT-CAT. I was commissioner of the ANECA in 2018-2020. At the ICMAB, I am the coordinator of the health research line, Responsible for the BioService and Cell cultures lab, and a member of the Executive Board (SEB), and in commissions such as Training and Retention, Gender, and Sustainability. My work as a researcher and role model has been recognized in different awards, such as L Oreal-Unesco (2016) the fem.talent award to the Emergent Talent.

I have been certified with certificación I3 and awarded 3 Sexenios de Investigación and 3 Quinquenios**.**

Part C. RELEVANT MERITS

C.1. Publications (including books) 77 (10 selected from the last 5 years)

Publications: 79 + 3 preparation; Total citations: 3046; averaged citations per item: 42; all in Q1 journals. Patents:9; H=30 (JCR) H=32 (GoogleScholar); 2 Book chapters. Corresponding highlighted.

1. **Caenorhabditis elegans endorse bacterial nanocellulose fibers as functional dietary Fiber reducing lipid markers** A. Muñoz-Juan; A. ; A. Esteve-Codina; M. Gut; N. Benseny-Cases; B.S. Samuel; E. Dalfó; A. Laromaine* Carbohydr. Polym. 2024, 10.1016/j.carbpol.2024.121815
2. **Exploring the Role of Metal in the Biointeraction of Metallacarboranes with C. elegans Embryos A.** Muñoz-Juan; M. Nuez-Martínez; A. Laromaine*; C. Viñas* Chemistry - A European Journal 2024, 10.1002/chem.202302484
3. **Biosafety evaluation of etoposide lipid nanomedicines in C. elegans S.H.E.** Moukhtari; A. Muñoz-Juan; R. Del Campo-Montoya; A. Laromaine*; M.J. Blanco-Prieto* Drug Deliv. Transl. Res. 2024, 10.1007/s13346-023-01466-w
4. **Arrhytmic Effects Evaluated on Caernorhabditis elegans: The case of polypyrrole nanoparticles** S. Y. Srinivasan; P. Alvarez Illera; D. Kukhtar; N. Benseny-Cases; J. Cerón; J. Álvarez; R. I. Fonteriz; M. Montero; A. Laromaine, ACS Nano 2023, 10.1021/acsnano.3c05245
5. **Cell-Laden 3D Hydrogels of Type I Collagen Incorporating Bacterial Nanocellulose Fibers** N. Malandain; H. Sanz-Fraile; R. Farré; J. Otero*; A. Roig*; A. Laromaine* ACS Applied Bio Materials 2023, 10.1021/acsabm.3c00126
6. **Conductive Bacterial Nanocellulose polypyrrole patches promote cardiomyocyte differentiation** S. Y. Srinivasan; M. Cler; O.Zapata-Arteaga; B. Dörling; M. Campoy-Quiles; E. Martínez; E. Engel; S.Pérez-Amodio*; A. Laromaine*, ACS Applied Bio Materials 2023, 10.1021/acsabm.3c00303
7. **One-step double network hydrogels of photocurable monomers and bacterial cellulose fibers** S. Roig-Sanchez, D. Kam, N. Malandain, E. Sachyani-Keneth O. Shoseyov*, S. Magdassi*, A. Laromaine*, A. Roig* Carbohydrate Polymers 2022, 10.1016/j.carbpol.2022.119778

8. **Highly Aligned Bacterial Nanocellulose Films Obtained During Static Biosynthesis in a Reproducible and Straightforward Approach** N. Murugarren, S. Roig-Sanchez, I. Antón-Sales, N. Malandain, K. Xu, E. Solano, J. Sebastian Reparaz, A. Laromaine*, Adv. Science 2022,10.1002/advs.202201947
9. **One-Step Biosynthesis of Soft Magnetic Bacterial Cellulose Spheres with Localized Nanoparticle Functionalization** S.Roig-Sanchez, O.Torrecilla, J. Floriach-Clark, S.Parets, P. A. Levkin, A. Roig, and A. Laromaine* ACS Appl. Mater. Interfaces 2021, 10.1021/acsami.1c17752
10. **Bacterial nanocellulose as a corneal bandage material: a comparison with amniotic membrane** Anton-Sales, I.; D'Antin, J. Christopher, Fernandez-Engroba, J., Charoenrook, V., Laromaine,* A.*Michael, R*., Biomaterials Science 2020, 10.1021/acsbiomaterials.0c00492

Books (1 in the last 5 years)

Nanomaterials for Magnetic and Optical Hyperthermia Applications Editores Raluca M. Fratila and Jesús M. de la Fuente. Book Series: Micro & Nano Technologies, Chapter: Invertebrate Models for Hyperthermia: What We Learned From Caenorhabditis elegans and Hydra vulgaris By: Moros, Maria; Gonzalez-Moragas, Laura; Tino, Angela; Laromaine, Anna, Tortiglione, Claudia. Pp: 229-264, (2019)

C.2. Research projects and grants (last 5 years)

Projects as Principal Researcher

- *Engineering Bioactivity in Bacterial Cellulose (Bactive),* 140.k€, Ministerio de Ciencia e Innovacion,PID2024-157637OB-I00, IP:Anna Roig/Anna Laromaine, Sept 2025-Aug2028.
- *Valorización de biotintas basadas en celulosa conteniendo células mediante la produccion de demostradores para la regeneración epitelial y sensores fotónicos* (BIO-C-CHIP)/, 290K€ Ministerio de Ciencia e Innovación/PDC2023-145826-I00 IP: Anna Laromaine.Jan 2024-31Dec025.
- *Next Generation Integrated Sensing and Analytical System for Monitoring and Assessing Radiofrequency Electromagnetic Field Exposure and Health* (NEXTGEM)- Programme Horizon: Call HORIZON-HLTH-2021-ENVHLTH-02, Budget: €7.6M, (CSICBudget 450K€ IP: Anna Laromaine) 1-July2022-31 June2026.
- *-Frontier Interdisciplinary Projects, 2021, MINECO-ICMAB Título: Resynchronization of Cardiac beating using polypyrrole composites and in vivo C. elegans platform* BEAT 69K€ CEX2019-000917-S IP- Anna Laromaine Duration 1sept2020 -31 dec 2023.
- *-Frontier Interdisciplinary Projects*, 2017, MINECO-ICMAB SEV2015-0496 Title: PLANT NANOHEALING 69K€ IP: Anna Laromaine Oct 2018- Dec 2019
- Alba synchrotron2020094625 " *Investigation of bacterial nanocellulose on Caenorhabditis elegans by Synchrotron Fourier Transform Infrared Microscopy* ", beam line BL01 - MIRAS, graded A+ 2020.
- RTI2018-096273-B-I00- RISE-BC *Rising the impact of Selected Engineered Bacterial Cellulose Composites*- RETOS MiCyT Enero (Sept) 2019- Dic. 2021;IP: Anna Laromaine 217K€.2018-2021 (prorroga Sept 2022).

- Projects as Participant
- *-Miembro del Grupo de Investigación consolidado en el marco del Pla de Recerca de Catalunya* – Generalitat de Catalunya. Responsable Dr. Anna Roig.
- -PRODUCTE- AGAUR-Generalitat de Catalunya. Responsable Dr. Anna Roig. 200K€
- PID2021-122645OB-I00 *Nanocomposites blandos y funcionales a base de polimeros naturles para la regeneración de tejidos* (BIO-SOFTREGE), IP A. Roig- P. Guardia, Sept 2022- Agost 2025. 160K€

C.3. Technology Transfer activities

Patents (9) presenting the last 5 years

- Patente nº 202330086, (Feb 2023) "Inserto ocular de celulosa bacteriana y su uso en el tratamiento/prevención de enfermedades o condiciones oculares", Centro de Oftalmología Barraquer y CSIC A. Roig, T. Meslier, A. Laromaine, I. Anton-Sales, R. Barraquer, V. M. Charoenrook, J. Christopher D'Antin, R. Michael, G. Julio Solicitada

Spin-off creation

Founder of OsmoBlue (2012-2018), a company in the energy sector that developed innovative technology capable of converting low-temperature heat into high-power electricity.
OsmoBlue received several awards from Swiss and Spanish institutions and around €900K in funding. The company closed its activities in January 2018. This path allowed me to obtain a master's MBA from UPF.

C.5 Conferences- workshops organization

Invited to 19 international conferences as a speaker and one as keynote, and participated in more than 45 conferences with an oral contribution.

Organizing committee: EPNOE Junior,7-8th September 2022, Aveiro-Portugal, Spanish Worm Meeting, 27-28th March 2019, Castelldefels-Barcelona, Scientific Workshop on Materials for Biology, MATBIO2017 19-22 June 2017, ICMAB, Bellaterra, Scientific Workshop on Biomedical, Health and Bio-Related applications of Hybrid Materials- HINT BCN framed in the HINT COST, 8-9 June 2015, ICN2-ICMAB, Bellaterra.

C.6 Teaching activities

- Fall 2011- 2021,2023-2024 Teacher of the subject Nanomedicine and Biomateriales in the Master of Nanotechnology UAB (Barcelona) and section coordinator (2011-2013).
-15 May 2017. Invited professor to the class Biomaterials in the Biomedical Eng. Univ. Vic 2h).

C. 7 Students Supervision

Bachelor students: (23) students during 2009- 2024. Master students- (11) students during 2006-2024.
Contracted researchers: Carlos López 2024, Sergi Diaz 2024, Alexandre Moreno 2024.
PhD students (10) Co-dirección (7) Muling Zeng, beca Gobierno de China CSC, (2011-2014); Siming Yu, beca Gobierno de China CSC, (2012- 2015); Laura González, beca FPU (2013-2016); Irene Anton beca FPU (2016-2021), Soledad Roig beca FPI (2016-2021) Nanthilde Malandain (Oct 2020) Dirección(3): Zhongrui Luo beca Gobierno China CSC (2016-2020), Sumithra Yasaswini beca MarieCurie-DocFam (2018-2023), Amanda Muñoz (2019-2024), Elena Murillo MarieCurie-DocFam (2025-2028).
Postdoctoral Researchers (4): Dr.Maria Milla, Project CIG, (March 2013- Sept 2014). Dr.Agnese Rabisi, Contract project Llavor and FIP-Nanohealing (Oct 2017-April 2019), Dr Pol Alonso (Oct2022), Dr. Ana Iglesias BIOCCHIP (2024)

C. 8 Awards

March 2014 fem.talent award to the Emergent Talent.
Mayo2014, Winners of the ReachOut award for divulgation, the New Materials at your School, ReachOut Project from E-MRS Spring 2014.
Jun 2016 Winner of the Women in Science of l´Óreal Foundation.

C.9. Institutional Responsabilities and comissions (last 5 years)

Since June 2023- Executive commitee member of Conexión Nanomedicina- CSIC
Since Abril 2023- Coordinator of the health research line in the ICMAB
Since 2020- Responsible of the BioService, Cell cultures lab, at the ICMAB
Since 2019- Vocal del Grupo Especializado de Coloides y Interfases
Feb17- Institutional Representative of CSIC at the Nanotechnology Fair (Tokyo 15-17Feb17)
Miembro de distintos comités de evaluación de doctorado ICN2 (3), ICFO (2).
Frequent Reviewer for ACS Nano, Advanced Functional Materials, NanoLetters, Environmental Science, Small, Nanotoxicology, ACS Omega, etc since 2011.

C.10 Dissemination and outreach activities

Since 2011, participation in the program CSIC "A researcher at your school" organized at the ICMAB.
Since 2023, I have participated in the MAGNET and FAIG program from the Bofill Foundation, which allied with Echegaray School (Martorell) to transform it and reverse school segregation through science.
-Participation in the activity "Madame Chatelet y sus seguidoras en Instagram" (Feb 2017-2019)
-2017-up to now active in the Association Mujeres Investigadoras y Tecnólogas, executive member and treasurer (2017-2019).