**CURRICULUM VITAE (CVA)**

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| **CV date** | 17/01/2023 |

**Part A. PERSONAL INFORMATION**

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| --- | --- |
| First name | Silvina |
| Family name | Cerveny Murcia |
| Gender (\*) | Female |  Birth date  |  |
| Social Security, Passport, ID number | 72546503H | Web https://sites.google.com/view/silvina-cerveny |
| e-mail | silvina.cerveny@ehu.es |  |
| Open Research and Contributor ID (ORCID)(\*) | 0000-0001-7727-8156 |

**A.1. Current position**

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| Position | Cientifica Titular   |
| Initial date | 01/08/2008  |
| Institution | Consejo Superior de Investigaciones Científicas (CSIC)    |
| Department/Center | Centro de Física de Materiales CSIC-UPV/EHU |
| Country | Spain | Teleph. number | 647 543 656 |
| Key words | Water remediation, water dynamics, proteins, dielectric spectroscopy |

**A.2. Previous positions (research activity interruptions, art. 45.2.b))**

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| --- | --- |
| **Period** | **Position/Institution/Country/Interruption cause** |
| 2007-2008  | I3P-CSIC, post-doctorado, Centro de Física de Materiales (San Sebastián) |
| 2004-2007 | Postdoc, Donostia International Physics Center (DIPC) (San Sebastián) |
| 2002-2004 | Postdoc, Chalmers University of Technology (Goteborg, Suecia) |
| 2001-2002 | Postdoc, Universidad de Buenos Aires, Depto. Física, Ayudante de primera, exclusiva  |
| 2000-2001 | Jefe de trabajos prácticos dedicación exclusiva, Universidad de Buenos Aires- Facultad de Ciencias Exactas, Depto. Física.  |
| 1996-2000 | Estudiante de doctorado, Universidad de Buenos Aires, Depto. Física,  |

**A.3. Formación Académica**

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| **PhD, Licensed, Graduate** | **University/Country** | **Year** |
| Licensed in Physics | Universidad de Buenos Aires/Argentina |  1995 |
| PhD in Physics | Universidad de Buenos Aires/Argentina |  2001 |

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

After earning a PhD in Physics from Universidad de Buenos Aires, Argentina, in 2001, Silvina has spent significant periods in Gothenburg (Sweden) and San Sebastian (Spain), as well as shorter stays in Grenoble, Israel, Germany, Argentina, USA, and UK. She is currently a PI in the *Polymers and Soft Mater group* at the Centro de Física de Materiales (CFM, CSIC).

Silvina's research focuses on the experimental area of soft matter physics. She has a publication record of around 86 publications and 3 book chapters, with important contributions to the study of complex polymeric systems and their relationship with water. Her work has focused on the glass transition and the fragile-strong transition of supercooled water and properties of polymers, biopolymers and glasses under hydration. She has been invited to write several articles, including a Chemical Review 2016 (impact factor = 62 and now with 301 citations) and a JPC-Cond. Matter review in 2015 (89 citations). In 2021, she published an article on the dynamics of peptides, which was considered a hot topic by the PCCP editors.

In addition to her work on water, Silvina has also begun researching water remediation technologies as a new line of research. She has already published some results, including two articles in the Chemical Engineering Journal (high impact factor 15.5) in 2023 and one article on the same topic on the Chemical Engineering Research and Design, which was in the Cover in 2022. In this line, she has also been issued a patent of a new adsorbent in 2023.

Regarding *international collaborations*, she has collaborated with many scientists around the world including Prof. Jan Swenson (Sweden), Prof. Michael Vogel (Germany), Prof. Nicolas J Alvarez (USA), and Prof. Silvia Goyanes (Argentina), Yuri Feldman (Israel), among others. Her scientific production includes around 100 contributions to conferences, including invited talks (27), tutorials (1), and seminars at international conferences (20). Silvina is a member of the "International Dielectric Society" Board of Directors and belongs to the Editorial Board of two international journals (Scientific Reports, IF= 4.6 and Materials, IF = 5.7). She chaired the "11th Broadband Dielectric Spectroscopy and its Applications" conference in San Sebastian, September 4-9, 2022, with 120 participants worldwide. In addition, she also chaired the "IDS-online meeting" conference in 2021 (~100 participants) and the workshop on "water remediation" in San Sebastian (Sep 2001). She has also been on the organizing committee of several international conferences, including "Science of Cement and Related Complex Materials" (2019), "5th Baskrete Open Days to Industry" (206), in "GdRi 2014," in San Sebastian, as well as in the Mestizajes Conference (2017 and 2011). Finally, she has recently been a Visiting Professor at the University of Buenos Aires, delivering a course on polymers, and taught courses on dielectric spectroscopy ("Laboratory Course on Dielectric Spectroscopy" (for ten years)).

Regarding *supervision*, Silvina was the supervisor of 7 PhD theses and currently supervises three more students. She has also directed three Master's theses and three TFG. Silvina was also the supervisor of 10 postdocs. All her Ph.D. students have got permanent positions in industry or academia.

Silvina's work also involves *collaborations with industry and the private sector*. She was the IP of four contracts in the rubber sector with Goodyear (Luxembourg) and Fate (Argentina). Her research has also contributed to solving the problem of water distribution in cement materials, which is crucial information for understanding their nanostructure. She is part of two initiatives, *Red Internacional de* *Tecnología del Caucho* (RITC) and BASKRETE, which promote the transfer of high technical knowledge to industrial companies. Moreover, she has a recent patent on water remediation adsorbents at EU level.

Regarding the *financing obtained*, she has received funding from Argentina, Bask Country, the European Union, the Ministry of Science and Innovation, and private companies. She was the coordinator IP of *Generacion del Conocimiento* 2020 (PID2019-104650GB-C21, € 169.000) and participated in these projects of 2018 with responsibility on WP5, 2013 (WP3), and 2007. She is IP-CSIC of the EU project "RIANA," which brings together 7 European networks of top-level RIs to cover the most advanced techniques relevant to nanofabrication, synthesis, characterization, and analytic and simulation capacity. In addition, she has also participated in two EU networks, Soft-Comp and EUSMI, and was the IP of an INTERREG (ETC) VC, interregional cooperation (Aquitania-Euskadi-Navarre). At the national level, she was the IP of i-link and i-coop projects (CSIC), and IP of several projects at the Basque country level (Elkartek, Etortek, and Saiotek programs).

**Part C. RELEVANT MERITS**

**C.1. Most important publications in books and journals with "peer review" and in conferences***-* **Total Number of Publications: 89**.Some of the most relevant for this proposal:

1. *Complexity of confined water vitrification and its glass transition temperature.* Melillo, J. H.; Cangialosi, D.; Di Lisio, V.; Steinrücken, E.; Vogel, M.; Cerveny, S., *Proceedings of the National Academy of Sciences* **2024,** *121* (41), e2407030121. **IF: 9.9**
2. *Dual crosslinking of low-methoxyl pectin by calcium and europium for the simultaneous removal of pharmaceuticals and divalent heavy metals*. Martínez-Sabando, J.; Coin, F.; Raposo, J. C.; Larrañaga, A.; Melillo, J. H.; **Cerveny, S.**, *Chemical Engineering Journal* **2023,** *475*, 146162 **IF: 15.5**
3. *A Review of Pectin-Based Material for Applications in Water Treatment.* Martínez-Sabando, J.; Coin, F.; Melillo, J. H.; Goyanes, S.; **Cerveny, S**., *Materials* **2023,** *16* (6), 2207. **IF: 5.7**
4. *An in situ approach to entrap ultra-small iron oxide nanoparticles inside hydrophilic electrospun nanofibers with high arsenic adsorption.* Torasso, N.; Vergara-Rubio, A.; Pereira, R.; Martinez-Sabando, J.; Baudrit, J. R. V.; **Cerveny, S**.; Goyanes, S., *Chemical Engineering Journal* **2023,** *454*, 140168 (2023). **IF: 15.5**
5. [*Bio-inspired membranes for adsorption of arsenic via immobilized L-Cysteine in highly hydrophilic electrospun nanofibers*](https://scholar.google.com/citations?view_op=view_citation&hl=th&user=d0pF0CMAAAAJ&cstart=20&pagesize=80&citation_for_view=d0pF0CMAAAAJ:p2g8aNsByqUC). D. Picón, N. Torasso, JRV Baudrit, **S. Cerveny**, S. Goyanes. Chemical Engineering Research and Design 185, 108-118 (2022). **JOURNAL COVER. IF: 6.5**
6. *Enhancing arsenic adsorption via excellent dispersion of iron oxide nanoparticles inside poly(vinyl alcohol) nanofibers.* N. Torasso, A. Vergara-Rubio, P. Rivas-Rojas, C. Huck-Iriart, A. Larranaga, A. Fernandez, **S. Cerveny**, S. Goyanes. Journal of Environmental Chemical Engineering, 9, 104664 (2021). **IF: 7.7**
7. *Dynamics of aqueous peptide solutions in folded and disordered states examined by dynamic light scattering and dielectric spectroscopy.* JH. Melillo, JP Gabriel, F Pabst, T Blochowicz and **S. Cerveny**. Phys. Chem. Chem. Phys., 2021, 23, 15020-15029- **PCCP HOT Articles and back cover of PCCP. IF = 3.6**
8. *On the microscopic origins of relaxation processes in aqueous peptide solutions undergoing a glass transition.* M. Weigler, I. Combarro Palacios, **S. Cerveny**, and M. Vogel. *Journal of Chemical Physics,* 2020**,** 152 (23), 234503-234503. **IF = 4.4**

8) Water dynamics in the hydration shells of biological and non-biological polymers. Special Issued on supercooled water.**S. Cerveny** and J. Swenson, 2019, J. Chem. Phys. 150, 234904.

9) *Evidence of Coupling between the Motions of Water and Peptides.* **S. Cerveny**, I. Combarro-Palacios, J. Swenson, 2016, *J. Phys. Chem. Letters* **7**, 4093*.* **IF =5.7**

10) *Confined Water as Model of Supercooled Water*. **S. Cerveny**, F. Mallamace, J. Swenson, M. Vogel, L. Xu***,*** 2016, *Chemical Review 116(*13), pp 7608–7625. **IF =62.1**

**C.2. Congress.** All the talks below are invited conferences, 148 (Tutorials 1, Invited = 27, Oral = 20, Poster = +100)

1. ***The calorimetric glass transtion of confined water* (Invited).** 9th International Discussion Meeting on Relaxation in Complex Systems (9 IDMRCS), 12-18 AUGUST 2023, Chiba (Japan).
2. ***Invisible pollution on surface waters – pharmaceuticals*****(Invited).**Workshop on sustainable water management - ILSI-Lanotec, November 9, 2022, San José, Costa Rica.
3. ***Arsenic Adsorption Using Iron Oxide Nanoparticles inside Poly (Vinyl Alcohol) Nanofibers* (oral)***.* 3rd International Congress on Advanced Materials Sciences and Engineering (AMSE-2022). 21-25 July 2022, Opatija, Croatia.
4. ***Isotope effects on the water dynamics in solutions studied by broadband dielectric spectroscopy* (Invited)**.American Chemical Society Fall 2022 - Sustainability in a changing world. 21-25 August 2022, Chicago, US.
5. ***Isotope effect on the dynamics of hydrophilic solutions at supercooled temperatures (Invited).*** Online IDS 2020 Workshop. 28-30 September 2020, online meeting.
6. ***Generalization of the slaving phenomenon to non-biological aqueous solutions (Invited).***Workshop on Dynamics in Disordered Materials, Dortmund, Alemania, 25-29 de Agosto de 2019.
7. ***Dynamics of raw and vulcanized rubber. What can we learn from dielectric spectroscopy studies?*** *10th international conference on Broadband dielectric spectroscopy and its applications- BDS2018. August 27 -31 2018, Brussels, Belgica.*
8. **Tutorial Lectures of the Dielectric Society:** “Dynamics of water Case study: molecular relaxation in aqueous solutions of synthetic and biological materials” *August* 26 2018, Brussels, Belgic.

**C.3. Research projects**. In the last 10 years I have participated in 15 research projects, 5 of them as a IP and 10 as researcher. Some of them are:

1. AQUACARE- Adsorbentes avanzados basados en nanotecnología e IA para la limpieza de los recursos acuáticos y el aire (PID2023-146348NB-I00). Funding €165.000 Date: 01/09/2024 - 01/09/2027
2. RIANA - HORIZON-INFRA-2023-SERV-01-01 / RIANA - Research Infrastructure Access in NAnoscience & nanotechnology. **IP- consortium: Michael Stuckelberger; IP-CSIC: Silvina Cerveny.** Funding €24.000 Institution: EU Date: 01/03/2024 - 01/03/2027
3. ARSENIC-FREE, new nano-structured multifuncional materials to remove arsenic in groundwater COOPB20502– Funding €22.500 – CSIC (I-coop program) | Period 01/01/2021- 31/12/2022| **PI Silvina Cerveny**.
4. BRIDGE - Bridging the gap between synthetic polymers and biopolymers physical and chemical properties. Proyecto coordinado. PID2019-104650GB-C21. Total Funding coordinated € 169.000 – Minister | Period 1/06/2020- 30/06/2023 | **PIs Silvina Cerveny** (coordinator) / Gustavo Ariel Schwartz
5. DINaMO-FiVe - Durabilidad de Infraestructuras en ambiente marino: NAno-Materiales Optimizados como Fibras Verdes. INTERREG (ETC) VC, interregional cooperation AECT, Aquitania-Euskadi-Navarre projects 2017 - Funding € 39.475,00 | Period 01/04/2018 - 31/03/2021| **PI Silvina Cerveny**
6. NEXTWATER-ilink, Referencia del proyecto: LINKB20012. Funding € 22.748– CSIC (I-LINK program) | Period 01/01/2019- 31/12/2020 | **PI Silvina Cerveny.**
7. INVESTIGACION COLABORATIVA EN SISTEMAS DE MONITORIZACION PORTABLE EN NANOCIENCIA Y NANOTECNOLOGIA. Referencia del proyecto: NG17 KK-2017/00012 | Funding € 52.831.11 | Gobierno Vasco- Programa Elkartek | Period 01/01/2017 - 30/12/2018 | **PI Silvina Cerveny**
8. DINAMICA DE SOLUCIONES BIOLOGICAS A BAJAS TEMPERATURAS. Referencia del proyecto. Referencia del proyecto: S-PE13IV001, Gobierno Vasco | Funding € 45 000| Period 01/01/2013 - 31/12/2013| **PI Silvina Cerveny**
9. Etortek 2014 – Bakrete (Bask Country Innitiative for cement and concrete research). Gobierno Vasco. Etortek. NanoIker on Cements. Funding € 43 173,74| Period 01/07/2011 - 31/12/2015| **PI Silvina Cerveny**
10. iNanogune (nanoIker 2013) – Bakrete (Bask Country Innitiative for cement and concrete research) Referencia del proyecto: ETORTEK2009-IE09-243. | Gobierno Vasco. Etortek | Funding € 125 000 euros | Period 01/07/2011 - 30/06/2014| **PI Silvina Cerveny**

**C.4. Contracts, technological or transfer merits**.

**Research Projects with Industry Partners** (3 PI and 1 participant)

1. *Chain dynamics in crosslinked filled polymers blends of different miscibility* – Funding €117.000 – Goodyear Innovation Center at Luxembourg | Period 2015-2019 | **PIs** Gustavo Ariel Schwartz / **Silvina Cerveny**
2. *Influencia de la formulación en las propiedades físicas de compuestos vulcanizados de caucho natural cargados con sílice y negro de humo* – Funding €54.000 – FATE (Tire Factory) | Period 2015-2017 | **PIs Silvina Cerveny** / Gustavo Ariel Schwartz
3. *Bulk and surface chain dynamics under external constrains –* Funding € 48.000 – Goodyear Innovation Center at Luxembourg | Period 2012-2014 | **PIs** Gustavo Ariel Schwartz / **Silvina Cerveny**
4. *Bulk and surface chain dynamics under external constrains –* Funding €137.600 - Goodyear Innovation Center at Luxembourg | Period 2010-2012 | PI Gustavo Ariel Schwartz | **Silvina Cerveny,** part of the research group

**Patent**

“*Composition for removing pharmaceuticals and heavy metals from polluted water*”

Inventors: J. Martinez Sabando, F. Coin, G.A. Schwartz, **S. Cerveny**. Submission number 300466912. Application number EP22383090.2, 11 November 2022. Priority countries: EU.