**Curriculum Vitae - Lucas Polo Fonseca**



**PERSONAL DATA**

*Name*: Lucas Polo da Fonseca

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*Birthday:* 04.10.1994 in Campinas – SP, Brazil

*Marital Status: Maried*

**ACADEMIC QUALIFICATIONS**

* 08.01.2017 – 10.01.2021:Ph.D. of chemistry at the University of Campinas (UNICAMP).
* 01.03.2012 – 07.01.2017: Bachelor’s degree in chemistry at the University of Campinas (UNICAMP).
* 01.02.2010 – 12/2011 Technician in Chemistry by Technical State School Conselheiro Antonio Prado, (ETECAP) (Campinas, Brazil).
* 01.02.2009 – 12/2011: High School at Technical State School Conselheiro Antonio Prado, (ETECAP) (Campinas, Brazil).

**RESEARCH ACTIVITIES**

**01.24.2022 – today:** Postdoctoral researcher in the group of professor Dr. Haritz Sardon at POLYMAT, University of the Basque Country UPV/EHU.

08.01.2017 – 10.01.2021: Ph.D. of chemistry with a scholarship of CAPES.

Title: Dynamic urea bond-mediated polymerization and its applications. University of Campinas (UNICAMP), Advisor: professor Maria Isabel Felisberti.

01.03.2017 – 03.21.2017: Winter research project.

Title: Photoactive Polystyrene Nanoparticles Size Control.

Charles University (CZ, Prague), Advisor: professor Jiří Mosinger.

01.01.2013 – 08.01.2017: Undergraduate research with a scholarship of PIBIC – CNPq.

Title: Responsive polyurethane hydrogels and their applications. University of Campinas (UNICAMP), Advisor: professor Maria Isabel Felisberti.

01.01.2012 – 05/2012 Summer Research project.

Title: Development of anti-corrosive inks based on Eco-resinas IQX

IQX-Inove Qualyx, Advisor: Dr. Silmara Neves.

**CONGRESS AND SYMPOSIUMS**

Several national and international conferences were attended and poster/oral presentations were performed from 2014 to 2023. The most recent ones are:

- Oral presentation entitled “Hindered ureas as precursors for polyurethanes” on the XV **Brazilian Polymer Congress** held in Bento Gonçalves, RS - Brazil, from 27 to 31 October **2019**.

- Poster presentation entitled “Dynamic urea bond mediated polymerization as a synthetic route for linear and telechelic polyurethanes” on the **European Polymer Congress** held at Heraklion Crete-Greece, from 9 to 14 June **2019**.

- Poster presentation entitled “Drug release and hydrolytic degradation of amphiphilic polyurethane hydrogels” on the XIV **Brazilian Polymer Congress** held in Águas de Lindóia, SP – Brazil, from 22 to 26 October **2017.**

**AWARDS**

Top 5 undergraduate research awarded at the XI Week of Pharmaceutical Sciences of the University of Campinas (Unicamp), **2016**, Campinas, SP – Brazil.

**PROFESSIONAL EXPERIENCE AND COMMUNITY WORK:**

- Synthesis of polyurethanes, synthesis of polyol-polyester polymers, dynamic urea bond mediated polymerization, synthesis of polyureas, polymeric composites, hydrogels, nanogels.

- Polymer chemistry, colloid and interface science.

- Experience in infra-red spectroscopy (FTIR), 1H and 13C nuclear magnetic resonance (NMR) including diffusion ordered NMR spectroscopy (DOSY), differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), size exclusion chromatography (SEC), thermomechanical analysis (TMA), dynamic mechanical analysis (DMA), X-ray diffraction (DRX), light scattering (DLS, SLS), cell viability assays, mechanical assays, kinetic modeling and simulation through Julia® language, etc.

*-* A research period abroad was planned during my Ph.D. studies but was canceled due to the COVID-19 pandemic.

- 08/2015 – 08/2019: Volunteer Professor of Chemistry at the Dandara dos Palmares preparatory school for teenagers under vulnerable financial conditions.

**HOBBIES AND INTERESTS**

Play electric and acoustic guitar, sing, read history books and romance novels.

**LANGUAGES**

* Portuguese: Native language
* English: Fluent

**LINKS**

**Google Scholar:** <https://scholar.google.com/citations?user=oSY5HyoAAAAJ&hl=en>

**5 SELECTED PUBLICATIONS**

Polo Fonseca L., Duval A., Luna E., Ximenis M., De Meester S., Avérous L., Sardon H.; Reducing the carbon footprint of polyurethanes by chemical and biological depolymerization: Fact or fiction?, *Current Opinion in Green and Sustainable Chemistry*, 41, 100802 **(2023)** <https://doi.org/10.1002/macp.202200129>

Polo Fonseca L., From nano to the macro: tuning hierarchical aggregation of thermoresponsive PEG/PCL-based polyurethanes via molar mass/composition control, *Macromolecular Research*, 31, 285-297 **(2023)** <https://doi.org/10.1002/macp.202200129>

Polo Fonseca L., Dynamic Urea Bond-Mediated Polymerization for Solvent-Free Low-Ð Linear Polyurethanes of Controlled Molar Mass: Hypothesis of Diffusion Control, *Macromolecular Chemistry and Physics*, 223, 2200129 **(2022)** <https://doi.org/10.1002/macp.202200129>

Polo Fonseca L., Zanata D. M., Gauche C., Felisberti M. I., A one-pot, solvent-free and controlled synthetic route for thermoresponsive hyperbranched polyurethanes, *Polymer Chemistry,* 11, 6295 **(2020)** <https://doi.org/10.1039/D0PY01026J>

Polo Fonseca L., Felisberti M. I., Dynamic urea bond mediated polymerization as a synthetic route for low molar mass dispersity telechelic polyurethanes and its block copolymers, *European Polymer Journal*, 118, 213-221 **(2019)** <https://doi.org/10.1016/j.eurpolymj.2019.05.052>

**PATENT APPLICATIONS**

Polo Fonseca, L.; Felisberti, M. I.; Process for obtaining polyurethanes: Polyurethanes with low molar mass dispersity, controlled molar mass and architecture, and their applications; National Institute of Industrial Property (INPI), Brazil, BR 10 2020 010991 0 **(2020)**.