

Juliana da Silva Bernardes

Brazilian Nanotechnology National Laboratory (LNNano) at
National Center for Research in Energy and Materials (CNPEM)

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1) Education/Training

Period	Duration (months)	Title or activity	Institution Supervisor
2000-2003	48	Undergraduate degree	University of Campinas
2004-2008	54	Graduate degree (DR, PhD)	University of Campinas/Lund University Prof. Watson Loh/Prof. Lennart Piculell
2009-2012	36	Post-Doctoral	University of Campinas Prof. Fernando Galembeck
2017-2017	3	Post-Doctoral	University of Stockholm Prof. Aji Mathew

2) Professional experience, service, and academic distinctions and prizes

2012: Brazilian Nanotechnology Laboratory, Principal Investigator of Biobased Nanomaterials.

2018: Federal University of ABC (Associated Professor)

Prizes

2024: Cover, ACS Applied Nano Materials.

2023: Best Pitch Presentation at Nanocellulose Summit (c/ Oliveira, MC, Nascimento, DM e Ferreira, ES), ABTCP.

2022: CRQIV Award (c/ Daiane Batista da Silva), CRQIV.

2022: Cover Nanoscale, RSC.

2022: Best Poster Award at AutoOrg 2022, Journal of Colloid and Interface Science (c/ Pomin, BM; Siva, DB e Gouveia, RF), Elsevier, Elsevier.

2020: Best poster at the TAPPI Nano 2020 Virtual Conference, TAPPI Nano (c/ Silva EP e Loh W), TAPPI.

2019: ACS Editor's Choice, American Chemical Society (c/ Otoni, CO; Capeletti, L; Cardoso, MB e Loh, W), ACS.

2019: Best Poster Award at XXVII Congresso de Iniciação Científica da UNICAMP (c/ Otoni, CO e Loh, W), UNICAMP.

2018: Best Poster Award at AutoOrg 2018, ACS Omega (c/ Silva EP e Loh W), ACS.

2009: Cover, Soft Matter

2008: Best Poster Award at 30a. RA da SBQ (c/ Percebom AM e Loh W), Sociedade Brasileira de Química., SBQ

3) List of up to 5 of the most relevant and highest impact scientific results

Licensed patent

1. Silva, D. B.; Massucato, B. P.; Gouveia, R. F.; **Bernardes, J. S.** Composition and coating process of cellulosic materials, INPI, BR BR10202202488, Filed: 06/12/2022 and Licensed: 22/11/2023.

Scientific papers

2. Silva, D. B.; Nascimento, D. M.; Claro, P. I. C.; Gouveia, R. F.; **Bernardes, J. S.*** Enhancing Water Resistance in Cationic Cellulose Nanofibril Adhesive with Natural Rubber Latex. *ACS Applied Nano Materials*, v.7, p.195–204, 2024.
3. Nascimento, D. M.; Colombari, F. M.; Focassio, B.; Schleder, G. R.; Costa, C. A. R.; Biffe, C. A.; Ling, L. Y.; Gouveia, R. F.; Strauss, M.; Rocha, G. J. M.; Leite, E.; Fazzio, A.; Capaz, R. B.; Driemeier, C.; **Bernardes, J.S.*** How lignin sticks to cellulose-insights from atomic force microscopy enhanced by machine-learning analysis and molecular dynamics simulations. *Nanoscale*, v. 14, p. 17561-17570, 2022.
4. Souza, S. F.; Mariano, M.; De Farias, M. A.; **Bernardes, J. S.*** Effect of depletion forces on the morphological structure of carboxymethyl cellulose and micro/nano cellulose fiber suspensions. *Journal of Colloid and Interface Science*, v. 538, p. 228-236, 2019.

5. Pinto, L. O.; **Bernardes, J. S.***; Rezende, C. A.* Low-energy preparation of cellulose nanofibers from sugarcane bagasse by modulating the surface charge density. *Carbohydrate Polymers*, v. 218, p. 145-153, 2019.

4) Research grants awarded by any agency or company to the researcher

- ✓ Advanced nanocellulose materials prepared through interfacial electrostatic complexation, Regular Grant FAPESP 2021-2023.
- ✓ Cellulose nanoparticles as rheology modifiers for complex fluids, Regular Grant FAPESP 2016-2018.
- ✓ Gel behavior of cellulose nanofiber smart materials, Sprint Grant FAPESP 2017-2019
- ✓ Cellulose dissolution for materials development, Regular Grant CNPq 2015-2018.

5) Academic quantitative indicators

5.1) publications in journals with selective editorial policy: 49

5.2) supervised master's dissertations

5.2.a) ongoing: 0

5.2.b) concluded: 1

5.3) supervised Doctoral theses:

5.3.a) ongoing: 5

5.3.b) concluded: 0

5.4) Postdoctoral supervisions

5.4.a) ongoing: 0

5.4.b) concluded: 3

5.7) number of citations received in Google Scholar: 2036 (January 23rd, 2024)

5.8) patents applied for: 9, granted patents: 0, and licensed patents: 1

6) Links

ORCID:0000-0002-2758-0880

Google Scholar: <https://scholar.google.com/citations?hl=en&user=h6TJeWgAAAAJ>

7) Other information

7.a) Other relevant biographical information

Recent scientific achievements relevant to this proposal

- ✓ Implementation of Nanocellulose Research at LNNano/CNPEM. Our research team has made significant strides in the field by pioneering innovative methodologies for extracting cellulose nanoparticles from sugarcane bagasse and their use in different fields. Over the period from 2016 to 2023, our efforts have resulted in several scientific papers and patents, including a licensed technology.
- ✓ Advanced nanoscale characterization (Cryo-TEM and AFM) successfully gathers fundamental information about nanocellulosic systems (2020-2024).
- ✓ Fruitful collaboration with theoretical groups to understand our experimental findings about biomass deconstruction (2020-2024).
- ✓ Strategic collaboration with a leading automotive company in a research project aimed at using nanocellulose extracted from sugarcane bagasse as a filler in polymeric nanocomposites (2017-2020).

Meeting organization

- ✓ Organization of "3rd Nanocellulose Workshop", 2019, Campinas.
- ✓ Organization of "German-Brazilian Partnering Event on the Way to a BioInnovation Hub", 2012, São Paulo (Workshop).

International experience after PhD

- ✓ International collaboration in nanocellulose. A fruitful partnership with Prof. Michael Tam from the University of Waterloo in smart nanocellulose based materials: 2017-2024.
- ✓ Postdoc at Stockholm University: 2017

7.b) Career Breaks

- ✓ 2014: Maternal Leave: 6 months
- ✓ 2019: Maternal Leave: 6 months