

Short CV

Diana Cristina Silva de Azevedo

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December 2021



Full professor of Chemical Engineering at *Universidade Federal do Ceará* (UFC, Brazil), Prof Azevedo's research interests include fundamentals and applications of adsorption, synthesis/shaping of adsorbents, CO₂ capture by adsorption and cyclic adsorptive separation processes (e.g. PSA, SMB). To this date, she has supervised 24 MS students, 16 DSc students and 10 post-doc fellows. Funded scientific collaboration with international groups include the University of Porto (Portugal), *Instituto Nacional del Carbon* and University of Málaga (Spain), Universidad Nacional de San Luis (Argentina), Universidad de los Andes (Colombia), University of Edinburgh (Scotland), University of Leipzig and Institute of Non-Classical Chemistry (Germany), University of Alberta (Canada) and Monash University (Australia). The main funding bodies of her research come from Brazilian public institutions (CNPq, CAPES, FINEP and FUNCAP) and from companies of the Petroleum (Petrobras, Shell) and Energy (ENEVA) sector. She serves as associate editor of journals Brazilian Journal of Chemical Engineering, Adsorption Science and Technology and Chemical Engineering Research and Design. She is member of the board of directors of the International Adsorption Society. Prof Azevedo is also interested in initiatives to promote gender balance in STEM careers and academia.

- **Education**

- BS in Chemical Engineering, Univ Federal do Ceará (Brazil), received 19 July 1990
- MS in Chemical Engineering, Univ Federal de São Carlos (Brazil), received 19 March 1993
- DSc in Chemical Engineering, Univ of Porto (Portugal), received 20 September 2001

- **Professional positions held**

- Faculty in the Chemical Engineering Department at Universidade Federal do Ceará (Brazil) since 29 June 1993
- Full professor of Chemical Engineering at Universidade Federal do Ceará (Brazil) since 17 April 2012

- **Courses taught and other services provided to students and the home institution**

- Extended experience in teaching: Transport Phenomena, Unit Operations and Adsorption Fundamentals and Applications (undergraduate and graduate levels)
- Course director (Chem Eng) from 1995-1997
- Graduate program director (Chem Eng) from 2003-2007 and 2013-2015
- Head of the Chem Eng Department from 2010-2012
- Associate Dean of the Faculty of Engineering, Architecture and Design at UFC (2015-2023)
- Chair of the local event to celebrate the International Women in Engineering Day (2017-present)

- **Other professional activities, such as workshops, seminars and consultations**

- Several R&D contracts with Petrobras for the last 15 years, adding up to around 6 million USD
- Incompany course on adsorption to Clariant-Suzano (Jan 2018)
- Chair of COBEQ 2018 (Brazilian Congress on Chemical Engineering) in September 2016

- President of the Scientific Committee of the 1st Iberoamerican Symposium on Adsorption in May 2012
- President of the Scientific Committee of the 1st South American Symposium on Adsorption in June 2008
- Member of the scientific committee of conferences from the EBA, COBEQ, ISSHAC and FOA series
- Keynote speaker at the Brazilian Meeting on Adsorption - EBA 2016 and 2018
- Plenary speaker at IBA3 Iberoamerican Symposium on Adsorption in September 2018
- Keynote speaker at the International Conference on Fundamentals of Adsorption (FOA) in May 2019
- **Membership and activities in professional associations**
 - Affiliate of the International Adsorption Society and member of the Board of Directors (2007-2013 and 2016-2022)
 - Founding president of the Brazilian Adsorption Society (2020-2022)
- **Professional honors, awards and fellowships**
 - Recipient of a scientific productivity grant from CNPq, since 2005 (currently level PQ-1A)
 - Ad honorem visiting professor at Universidade Nacional de San Luis, Argentina (2012-2014)
- **Scientific advisory service**
 - Former member of CNPq advisory committee on Chemical Engineering (2011-2014)
 - Currently evaluation coordinator of professional graduate programs in Chem Eng at CAPES (2018-2022)
- **PhD thesis refereeing**
 - External examiner for 13 national PhD theses (other than in home institution)
 - External examiner for 7 international PhD theses (Argentina, Australia, Colombia, Germany and Spain)
- **Editorial experience**
 - Member of Editorial Board of the journals *Industrial & Engineering Chemistry Research*, *Adsorption* and *Adsorption Science and Technology*
 - Member of Editorial Board of the *Kirk-Othmer Encyclopedia of Chemical Engineering* (Wiley)
 - Associate Editor of the *Brazilian Journal of Chemical Engineering*
 - Section Editor of the journal *Chemical Engineering Research and Design*
 - Review Editor of the journal *Adsorption Science and Technology*
- **Bibliometric data**
 - H-index: 37, 150 publications and 3800 citations – Author ID: 7005832618 (Scopus, as from 16 December 2021)
- **Web links**
 - <http://orcid.org/0000-0001-8545-3989>
 - <http://lattes.cnpq.br/7586955305848168> (in Portuguese)
 - https://www.researchgate.net/profile/Diana_Azevedo
 - <http://scholar.google.com/citations?user=9gHi0kMAAAAJ>

- **Publications (selected publications in the last 5 years. For full record, check Orcid and Scopus)**
 - MOURA, P.A.S. et al. Water adsorption and hydrothermal stability of CHA zeolites with different Si/Al ratios and compensating cations. *Catalysis Today*, 2022
<https://doi.org/10.1016/j.cattod.2021.11.042>
 - RICHARD, K. F.S. et al. Assessing mass transfer rates in porous adsorbents using gas adsorption microcalorimetry. *Chemical Engineering Science*, v. 229, p. 115983, 2021.
 - OLIVEIRA, J. C. A. et al. Representative pores: An efficient method to characterize activated carbons. *Frontiers in Chemistry*, v. 8, p. 595230, 2021.
 - MORALES-OSPINO, R. et al.. Parametric Analysis of a Moving Bed Temperature Swing Adsorption (MBTSA) Process for Postcombustion CO Capture. *Industrial & Engineering Chemistry Research*, v. 60, p. 10736, 2021.
 - SILVA, E. N. et al. Siloxane adsorption by porous silica synthesized from residual sand of wastewater treatment. *Journal of Environmental Chemical Engineering*, v. 9, p. 104805, 2021.
 - DE SOUSA, J. A. R. et al. H₂S and H₂O Combined Effect on CO₂ Capture by Amino Functionalized Hollow Microsphere Silicas. *Industrial & Engineering Chemistry Research*,
<https://doi.org/10.1021/acs.iecr.1c00033>, 2021.
 - OJEDA-LÓPEZ, R. et al. Effect of Calcination Temperature and Chemical Composition of PAN-Derived Carbon Microfibers on N₂, CO₂, and CH₄ Adsorption. *Materials*, v. 14, p. 3914, 2021.
 - SÁNCHEZ-ZAMBRANO, K. S. et al. Adsorption microcalorimetry as a tool in the characterization of amine-grafted mesoporous silicas for CO₂ capture. *Adsorption-Journal of the International Adsorption Society*, v. 26, p. 165-175, 2020.
 - SANTIAGO, R. G. et al. Evaluation of the thermal regeneration of an amine-grafted mesoporous silica used for CO₂/N₂ separation. *Adsorption-Journal of the International Adsorption Society*, v. 26, p. 203-215, 2020.
 - DE OLIVEIRA, J. L. B. et al. Effect of ultramicropores on the mechanisms of H₂S retention from biogas. *Chemical Engineering Research & Design*, v. 154, p. 241-249, 2020.
 - OJEDA-LÓPEZ, R. et al. Tailoring synthesis conditions of carbon microfibers to enhance the microporosity, CO₂ and CH₄ adsorption by using the response surface methodology. *Microporous and Mesoporous Materials*, v. 305, p. 110333, 2020.
 - MORALES-OSPINO, R. et al. Assessment of CO₂ desorption from 13X zeolite for a prospective TSA process. *Adsorption-Journal of the International Adsorption Society*, v. 26, p. 813-824, 2020.
 - VILARRASA-GARCIA, E. et al. Assessing CO₂ Adsorption on amino-functionalized mesocellular foams synthesized at different aging temperatures. *Frontiers in Chemistry*, v. 8, p. 1068, 2020.
 - DIAS, N. A. et al. Experimental designs for optimizing the purification of immunoglobulin G by mixed-mode chromatography. *Journal of Chromatography B-Analytical Technologies in the Biomedical and Life Sciences*, v. 1125, p. 121719, 2019.
 - OLIVEIRA, L. T. et al. Superior Performance of Mesoporous MOF MIL-100 (Fe) Impregnated with Ionic Liquids for CO₂ Adsorption. *Journal of Chemical and Engineering Data*, v. 64, p. 2221-2228, 2019.
 - SANTIAGO, R. G. et al. Investigation of premature aging of zeolites used in the drying of gas streams. *Chemical Engineering Communications*, v. 206, p. 1378-1385, 2019.
 - VIEIRA, R. B. et al. Polyamine-Grafted Magadiite: High CO₂ Selectivity at Capture from CO₂ /N₂ and CO₂ /CH₄ Mixtures. *Journal of CO₂ Utilization*, v. 23, p. 29-41, 2018.

- MENEZES, R. L. C. B. et al. Insights on the Mechanisms of H₂S Retention at Low Concentration on Impregnated Carbons. *Industrial & Engineering Chemistry Research*, v. 57, p. 2248-2257, 2018.
- MOURA, P. A. S. et al. Assessing the potential of nanoporous carbon adsorbents from polyethylene terephthalate (PET) to separate CO₂ from flue gas. *Adsorption-Journal of The International Adsorption Society*, v. 24, p. 279-291, 2018.
- SANCHEZ-ZAMBRANO, K. S. et al. CO₂ Capture with Mesoporous Silicas Modified with Amines by Double Functionalization: Assessment of Adsorption/Desorption Cycles. *Materials*, v. 11, p. 887, 2018.
- SOARES-MAIA, D. A. et al. CO₂ gas-adsorption calorimetry applied to the study of chemically activated carbons. *Chemical Engineering Research & Design*, v. 136, p. 753-760, 2018.
- VILELLA, P. C. et al. Preparation of biomass-based activated carbons and their evaluation for biogas upgrading purposes. *Industrial Crops and Products*, v. 109, p. 134-140, 2017.
- VILARRASA-GARCÍA, E. et al. Microwave-assisted nitric acid treatment of sepiolite and functionalization with polyethylenimine applied to CO₂ capture and CO₂/N₂ separation. *Applied Surface Science*, v. 410, p. 315-325, 2017.
- COELHO, J. A. et al. Computer simulation of adsorption and sitting of CO₂, N₂, CH₄ and water on a new Al(OH)-fumarate MOF. *Adsorption (Boston)*, v. 23, p. 423-431, 2017.
- VILARRASA-GARCÍA, E. et al. Evaluation of porous clay heterostructures modified with amine species as adsorbent for the CO₂ capture. *Microporous and Mesoporous Materials*, v. 249, p. 25-33, 2017.
- COELHO, J. A. et al. On the stability of an Al-fumarate MOF and its potential for CO₂ capture from wet stream. *Industrial & Engineering Chemistry Research*, v. 55, p. 2134-2143, 2016.
- MOURA, P. A. S. et al. Adsorption equilibria of CO₂ and CH₄ in cation-exchanged zeolites 13X. *Adsorption (Boston)*, v. 22, p. 71-80, 2016.
- CECILIA, J.A. et al. Functionalization of hollow silica microspheres by impregnation or grafted of amine groups for the CO₂ capture. *International Journal of Greenhouse Gas Control*, v. 52, p. 344-356, 2016.