Vitor Gama

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Education

West Virginia University — Morgantown, WV, USA
Ph.D. student, Chemical Engineering; — *Aug. 2021 – Dec. 2025 (Expected)*
GPA: 3.75/4.00

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
M.Sc., Chemical Engineering; — *Sept. 2018 – April 2021*
Academic Coefficient: 9.14/10.00

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
B.Sc., Chemical Engineering; — *May 2013 – Aug. 2018*
Academic Coefficient: 8.18/10.00

Awards & Achievements

AIChE Environmental Division Graduate Paper Award (2024): Awarded 2nd place with the paper titled "Process Operability Analysis of Membrane-Based Direct Air Capture for Low-Purity CO_2 Production".

Jack and Marietta Mullenger Fellowship (2024)

Recruitment Fellowship (2021)

Research Experience

West Virginia University — Morgantown, WV, USA
Graduate Research Assistant (Ph.D.)[Advisors – Dr. Fernando V. Lima/Dr. Oishi Sanyal] — *Aug. 2021 – Currently*

- Simulation and Operability Analysis of gas separation membranes for Direct Air Capture (DAC) with Carbon Capture Utilization and Storage (CCUS).

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
Graduate Research Assistant (M.Sc.) — *Sept. 2018 – April 2021*

- M.Sc. thesis: "CostApp: a Cost Estimation Tool Developed Using C# and WPF for the Chemical Engineering Field": Developed a Windows OS application for chemical industry equipment cost estimation based on literature models.

Work Experience

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
Graduate Research Assistant (M.Sc.) and Developer — *Sept. 2019 – March 2021*

- Technological Project for the Development of a Method for Synthesis of Control structures (PETROBRAS/CENPES/PAQTCPB/LENP/UFCG): An automated software capable of easily selecting the most promising self-optimizing control structures in industrial processes.
- Worked on coding the PID routines to control simulated processes uploaded to the BRPWC tool
- Worked on developing mock-ups for the process control user interface of the tool and code troubleshooting

Selected Research Publications - Complete list on my Google Scholar.

Vitor Gama, Beatriz Dantas, Oishi Sanyal, and Fernando V. Lima. "Process Operability Analysis of Membrane-Based Direct Air Capture for Low-Purity CO2 Production". In: *ACS Eng. Au* 4.4 (Aug. 2024). Publisher: American Chemical Society, pp. 394–404. DOI: 10.1021/acsengineeringau.3c00069. URL: https://doi.org/10.1021/acsengineeringau.3c00069 (visited on 02/18/2025).

Vitor V. Gama, San Dinh, Victor Alves, Beatriz N. A. Dantas, Brent A. Bishop, and Fernando V. Lima. "Modeling and Process Operability Analysis o f a Di rec t A i r Ca p t ure System". In: *IFAC-PapersOnLine*. 13th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2022 55.7 (Jan. 2022), pp. 316–321. ISSN: 2405-8963. DOI: 10.1016/j.ifacol.2022.07.463. URL: https://www.sciencedirect.com/science/article/pii/S2405896322008692 (visited on 02/18/2025).

Skills

Programming: Python, MATLAB, Markdown, C#, Javascript, LaTeX and exposure to Java

Technologies/Platforms: Git, GitHub, GitLab

Process simulation: Aspen Plus, Aspen Custom Modeler, HYSYS, AVEVA Process Simulation, PRO/II, ChemCad

Languages: English and Portuguese

Relevant Coursework

Major coursework: Transport Phenomena, Advanced Chemical Engineering Thermodynamics, Chemical Reaction Engineering, Mathematical Methods in Chemical Engineering, Teaching Practicum

Minor coursework: Dynamic Simulations, Membrane Separations, Artifical Intelligence Techniques

CliftonStrengths

Arranger | Positivity | Input | Woo | Communication

Professional leadership and Service

Brazilian Student Association (President) *September 2022 – September 2024*

Statler College DEI Student Committee *May 2022 - May 2023*

CODES Research Group Leader *Sept. 2022 - Sept 2023*

Selected Conference Presentations

1. **Leveraging Process Operability Mapping to Support Experimental Membrane Direct Air Capture (m-DAC) Solutions** *(Oral Presentation)*
   2024 AIChE Annual Meeting
   October 29, 2024, San Diego, CA, USA
   Authors: Vitor Gama, Oishi Sanyal, Fernando V. Lima

2. **Process Operability Analysis of Membrane-Based Direct Air Capture for Low-Purity CO_2 Production** *(Poster Presentation)*
   Membranes: Materials and Processes - Gordon Research Conference
   July 28 - August 2, 2024, New London, NH, USA
   Authors: Vitor Gama, Oishi Sanyal, Fernando V. Lima

3. **Evaluation of Hollow Fiber Membrane Modules for CO_2 Direct Air Capture and Utilization in Low-Purity CO_2 Processes** *(Oral Presentation)*
   2023 AIChE Annual Meeting
   November 7, 2023, Orlando, FL, USA
   Authors: Vitor Gama, Oishi Sanyal, Fernando V. Lima

4. **Feasibility Analysis of a Membrane System for Direct Air Capture of CO_2** *(Oral Presentation)*
   2022 AIChE Annual Meeting
   November 17, 2022, Phoenix, AZ, USA
   Authors: Vitor Gama, San Dinh, Oishi Sanyal, Fernando V. Lima

5. **Designing a Membrane-based Platform for CO_2 Direct Air Capture Systems Analysis** *(Poster Presentation)*
   Gordon Research Conference on Chemical Separations
   October 2-7, 2022, Ventura, CA, USA
   Authors: Vitor Gama, Oishi Sanyal, Fernando V. Lima

6. **Another Presentation Title** *(Another Conference Name)*
   Month Day, Year
   Location, Author A, Author B, Author C
   Authors: