Claudemi Nascimento

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EDUCATION

West Virginia University — Morgantown, West Virginia, USA
Ph.D. Student in Chemical Engineering — *Jan 2022 – Present*
- Embbeded Gaussian Process modeling based optimization for Carbon Capture, Utilization and Storage

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
M.Sc. in Chemical Engineering — *Sep 2018 – Dec 2021*
- Development of new predictive models for computing explosive atmosphere extents in hazardous area classification

Federal University of Campina Grande — Campina Grande, Paraiba, Brazil
B.Sc. in Chemical Engineering — *May 2013 – Aug 2018*
- CFD simulation and experimental verification of gases dispersion for hazardous area classification

WORK AND RESEARCH EXPERIENCE

West Virginia University — Morgantown, West Virginia, USA
Graduate Research Assistant — *Jan 2022 – Present*
- Application of embedded Gaussian Process modeling-based optimization for the electrochemical conversion of CO_2
- Process level modeling and techno-economic analysis (TEA) of electrochemical CO_2 conversion
- Application of embedded Gaussian Process (GP) modeling to a Steam Methane Reforming (SMR) reaction system

National Energy Technology Laboratory — Morgantown, West Virginia, USA
Graduate Research Assistant — *Jan 2023 – Jun 2023, Contractor from Leidos Research Support Team*
- Analysis of data from a commercial power generator
- Employed typical and emerging system identification methods to evaluate alterations in the control states
- Prepared reports and presentations to present to the power customer

Federal University of Campina Grande and PETROBRAS — Campina Grande, Paraíba, Brazil
Graduate Research Assistant and Developer — *Sep 2018 – Dec 2021*
- Application of Computational Fluid Dynamics (CFD) in the modeling of emission and dispersion of liquids and two-phase fluids
- Development of improvements for an assistant software for hazardous area classification using C# and Matlab
- Database structuring and designing using SQLite for calculating properties of flammable substances
- Development of surrogate models for hazardous area classification using machine learning techniques

Coteminas A. S. — Campina Grande, Paraíba, Brazil
Industrial Engineer — *Jan 2018 – Aug 2018, Internship*
- Project development initiative to reduce steam consumption in the weaving process
- Implementation of a quality control system in the production of starch mixture
- Physical-chemical and rheological analysis of starchy compound used in the cotton's yarn coating process

Federal University of Campina Grande and PETROBRAS — Campina Grande, Paraíba, Brazil
Undergraduate Researcher — *Dec 2015 – Dec 2017*
- Development of improvements for the BR-Ex, PETROBRAS assistant software for hazardous area classification
- Application of Computational Fluid Dynamics (CFD) for gases emission and dispersion modeling
- Construction and start-up of a pilot-scale experiment for emission and dispersion gases

TEACHING

Chemical Process Control — West Virginia University
Teaching Assistant — *Spring, 2024*

Selected Research Publications - Complete list on my [Google Scholar.](#)

José J.N. Alves, Antônio T.P. Neto, Antônio C.B. Araújo, Heleno B. Silva, Sidinei K. Silva, Claudemi A. Nascimento, and Aurélio M. Luiz. "Overview and experimental verification of models to classify hazardous areas". In: *Process Safety and Environmental Protection* 122 (Feb. 2019), pp. 102–117. DOI: 10.1016/j.psep.2018.11.021.

Paloma L. Barros, Aurélio M. Luiz, Claudemi A. Nascimento, Antônio T.P. Neto, and José J.N. Alves. "On the non-monotonic wind influence on flammable gas cloud from CFD simulations for hazardous area classification". In: *Journal of Loss Prevention in the Process Industries* 68 (Nov. 2020), p. 104278. DOI: 10.1016/j.jlp.2020.104278.

Claudemi A. Nascimento, Aurélio M. Luiz, Paloma L. Barros, Antônio T.P. Neto, and José J.N. Alves. "A CFD-based empirical model for hazardous area extent prediction including wind effects". In: *Journal of Loss Prevention in the Process Industries* 71 (July 2021), p. 104497. DOI: 10.1016/j.jlp.2021.104497.

Awards & Achievements

Graduated with Honors: Awarded to bachelor students who have obtained their degrees with the highest GPA in the class for the current year by Federal University of Campina Grande (Aug 2018)

Skills

Programming: C#, Python, MATLAB, R

Technologies: Git, SQLite

Softwares: Ansys CFX, Aspen Plus, AVEVA Process Simulation

Languages: English and Portuguese

Relevant Coursework

Major coursework: Transport Phenomena, Advanced Chemical Engineering Thermodynamics, Chemical Reaction Engineering, Statistical and Numerical Methods for Chemical Engineering, Teaching Practicum

Minor coursework: Artificial Intelligence Techniques, Electrochemical Energy Technologies, Advanced Process Systems Engineering, Linear and Nonlinear Optimization