Claudemi Nascimento

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Education

West Virginia University — Morgantown, West Virginia, USA
*Ph.D. Student in Chemical Engineering (**GPA: 4.00/4.00**)* — *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 (**GPA: 9.30/10.00**)* — *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 (**GPA: 8.80/10.00**)* — *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 processes
- 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 for Leidos Research Support Team*
- Analyzed 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.

Claudemi Alves Nascimento and Fernando V Lima. "Application of a Developed Techno-Economic Analysis Framework to CO2 Electrochemical Reduction Processes". In: *2023 AIChE Annual Meeting*. AIChE. 2023.

Claudemi A Nascimento, Aurélio M Luiz, Paloma L Barros, Antônio TP Neto, and José JN Alves. "A CFD-based empirical model for hazardous area extent prediction including wind effects". In: *Journal of Loss Prevention in the Process Industries* 71 (2021), p. 104497.

Paloma L Barros, Aurelio M Luiz, Claudemi A Nascimento, Antonio TP Neto, and Jose JN 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 (2020), p. 104278.

José JN Alves, Antônio TP Neto, Antônio CB 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 (2019), pp. 102–117.

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

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

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