

Claudemi Nascimento

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EDUCATION

West Virginia University

Morgantown, West Virginia, USA

Ph.D. Student in Chemical Engineering

Jan 2022 – Present

- Embedded Gaussian Process modeling based optimization for Carbon Capture, Utilization and Storage

Federal University of Campina Grande

Campina Grande, Paraíba, 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, Paraíba, Brazil

B.Sc. in Chemical Engineering

May 2013 – Aug 2018

- CFD simulation and experimental verification of gases dispersion for hazardous area classification

EXPERIENCE

West Virginia University

Morgantown, West Virginia, USA

Graduate Research Assistant

Jan 2022 – Present

- Application of embedded Gaussian Process modeling based optimization for electrochemical conversion of CO₂ into fuels
- Process level modeling and techno-economic analysis (TEA) of electrochemical CO₂ conversion system
- Application of embedded Gaussian Process (GP) modeling to Steam Methane Reforming (SMR) reaction

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 the commercial power generator
- Employ typical and emerging system identification methods to evaluate alterations in the control states
- Provide input to the final presentation to be presented to the power generator customer

Federal University of Campina Grande

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 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 in order 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

Campina Grande, Paraíba, Brazil

Undergraduate Researcher

Dec 2015 – Dec 2017

- Development of improvements for the BR-Ex, 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

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 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

Minor coursework: Artificial Intelligence Techniques, Electrochemical Energy Technologies, Advanced Process Systems Engineering