Sasikanth Vadde

Research Assistant

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EDUCATION

Masters in Chemical and Energy Engineering,
Otto von Guericke University
2021 – 2024 | Magdeburg, Germany

Bachelors in Mechanical Engineering, GMRIT
2015 – 2019 | Rajam, India

SKILLS

- Dymola ●●●●●
- MATLAB ●●●●○
- Aspen ●●●●○
- STAR-CCM+ ●●●○○
- Python ●●●●○
- Autodesk Fusion 360 ●●●○○
- OriginLab ●●●●○

LANGUAGES

- Deutsch ●●○○○
- English ●●●●●
- Hindi ●●●●○
- Telugu ●●●●●

PROFESSIONAL EXPERIENCE

Deutsches Zentrum für Luft- und Raumfahrt (DLR), Research Assistant (Part-TIme)
June 2024 – present | Stuttgart, Germany

- Mathematical Modeling & Simulation of High Pressure Alkaline Electrolysis System Using Pressure Vessel Concept.
- Developing a PID-based control system for AWE simulation to dynamically adapt to varying renewable energy inputs, downstream process requirements, and gas purity constraints.

Skills : Dymola, Python, PID - Ziegler-Nichols

Deutsches Zentrum für Luft- und Raumfahrt (DLR), Master Thesis
December 2023 – June 2024 | Stuttgart, Germany

- Constructed a robust mathematical model in Modelica/Dymola that accurately represents the behaviour of the electrolysis cell, incorporating key physical and chemical parameters.
- Validated the model through experimental data and refine it as necessary to ensure accurate predictions.
- Performed data analysis on experimental results to support diffusion modeling in simulations.

Skills : Dymola, Python

Deutsches Zentrum für Luft- und Raumfahrt (DLR), Internship
October 2023 – December 2023 | Stuttgart, Germany

- Designed AC/DC and DC/DC power converters to model and minimize power conversion losses in grid-to-electrolyzer energy transfer.
- Performed experiments on a single-cell alkaline electrolysis test bench to assess system behavior and parameterize key variables for simulation models..

Skills : Dymola, Python, MS-office

Otto von Guericke University, HiWi Student Assistant
July 2023 – September 2023 | Magdeburg, Germany

- Designed and conducted fluidized bed experiments with varying inlet pressures, showcasing hands-on expertise in experimental setup, data collection, and analysis, contributing valuable insights to the study of fluidized bed behavior.
- Developed custom Python algorithms for bubble detection, velocity measurement, and quantification of bubbles in fluidized beds, contributing to enhanced process understanding and efficiency.

Skills : Python - Image Processing

PROJECTS

Control of Multivariable Process
April 2023 – June 2023
Designing the PID controllers for the Newell and Lee Evaporator and to compare different tuning methods based on their response time.
Skills : MATLAB, SIMULINK, PID

CFD Simulations
June 2022 – January 2023

- Fluid Flow Simulation around the Arc de Triumph for different velocities of the wind in different directions to find out the Structural Stress Points.

Skills : Star-CCM+

- Study of the air flow around two hot plates which are facing opposite to each other and constantly losing a fixed amount of heat.

Skills : Open-FOAM, Auto-CAD