

AKASH SURIYA NARAYANAN

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PROFESSIONAL SUMMARY

Chemical engineer with 2+ years of industry experience at a global abrasives manufacturer, currently pursuing an M.Sc. at the University of Padova. Hands-on expertise in Aspen Plus process simulation, CAPEX project execution, and production optimisation. Experienced in applying engineering principles to real industrial challenges, with a strong focus on sustainable and efficient process design. Erasmus+ alumnus with multicultural project experience across five European universities.

EDUCATION

M.Sc. Chemical and Process Engineering | University of Padova, Italy Sep 2024 – Dec 2026 (Expected)

Industrial Thesis: Aspen Plus process simulation project (company details confidential)

Relevant coursework: Multiphase Thermodynamics, Separation Unit Operations, Process Design, Process Fluid Dynamics and Simulation, Risk and Safety Analysis, Machine Learning for Process Engineers

B.Tech Chemical Engineering | SASTRA Deemed University, India Aug 2022

CGPA: 8.011/10.00 | 85th Percentile

WORK EXPERIENCE

Executive – Production | Carborundum Universal Limited (CUMI), India Aug 2022 – Aug 2024

- Led production of hot-pressed resinoid grinding wheels, achieving a 75% increase in output through process optimisation and TPM-driven improvement initiatives.
- Secured multimillion-rupee CAPEX approvals by preparing comprehensive technical reports and business cases for the Senior Leadership Team.
- Commissioned multiple CAPEX projects in coordination with cross-functional teams and external vendors, delivering on time and within budget.
- Built automated Power BI dashboards for 3 manufacturing units, improving production planning visibility and operational decision-making.
- Led product portfolio expansion of hot-pressed wheels using Quality Function Deployment (QFD) methodology.

INTERNATIONAL PROGRAMS

Erasmus+ Blended Intensive Programme (BIP) | Hochschule Kaiserslautern, Germany May 2025

Decarbonisation Strategies in Process Engineering

- Completed online collaboration and 1-week physical mobility with students from University of Padova, University of Valladolid, UPC Barcelona, University of Turku, and Hochschule Kaiserslautern.
- Designed and simulated an MVR distillation column for ethanol purification using Aspen Plus; presented simulation results and attended a Sulzer technical lecture.
- Visited BASF Ludwigshafen Verbund site and Berkel AHK Alkoholhandel GmbH for industrial insights into sustainable chemical processes.

PROJECTS

IBPE Plant Conceptual Design and Simulation | University of Padova – M.Sc. Process Design Project Sep 2025 – Feb 2026

- Collaborated in a team of 6 to conceptually design a 5,000 t/year IBPE production plant using Aspen Plus, following a hierarchical design approach covering economic potential screening, CSTR simulation, and sensitivity analysis to optimise reactor conversion (50%) and purge composition.
- Designed a three-column vacuum distillation separation system achieving 99.9% molar product purity; completed full cash flow and profitability analysis confirming economic viability.

Process Optimisation via VSM Methodology | Carborundum Universal Limited Aug 2022 – May 2023

- Calculated OEE and Manufacturing Cycle Efficiency (MCE) across all production processes using Value Stream Mapping; implemented targeted kaizens that increased hot-pressed grinding wheel output by 75%.

Power BI Dashboard for Multi-site Operations | Carborundum Universal Limited Sep 2023 – May 2024

- Built an automated, interactive Power BI dashboard using Excel macros to consolidate ERP data across 3 manufacturing locations, enabling SKU-level operational insight and faster decision-making.

Model Development for Boiler Efficiency | CORI Rubbers Pvt. Ltd.

Mar – Jul 2022

- Developed an Excel model for boiler efficiency determination with sensitivity and error analysis; performed HAZOP analysis and authored SOP for the softener plant.

CFD Study – Flow Through Single-Holed Orifice in Series | SASTRA University

Aug – Dec 2021

- Numerically estimated pressure drops and cavitation potential using ANSYS Fluent; validated against experimental data and compared steady-state vs transient behaviour.

TECHNICAL SKILLS

Expert: Aspen Plus, Power BI, Excel (Advanced), Microsoft Office Suite

Proficient: ANSYS Fluent, AutoCAD, Pro/II, MATLAB, Minitab, Excel VBA

Familiar: C, C++, SolidWorks, DWSIM, Scilab

Process Methods: HAZOP, Six Sigma, Design of Experiments, QFD, TPM, VSM, Sensitivity Analysis, Cash Flow and Profitability Analysis

CONFERENCES AND WORKSHOPS

- Presented paper on CFD simulation at SCHEMCON 2021, Indian Institute of Chemical Engineers – Sep 2021
- Workshop on Quality Function Deployment, Lead Training Solutions – Jun 2023
- Workshop on Design of Experiments (DOE), Confederation of Indian Industry (CII) – Apr 2023
- Workshop on Value Stream Mapping, Confederation of Indian Industry (CII) – Dec 2022

CERTIFICATIONS

- Lean Six Sigma Yellow Belt (ISYB), Anexas Europe – Jul 2020
- Oil and Gas Industry Operations and Markets, Duke University, Coursera – Aug 2020
- Leadership and Emotional Intelligence, Indian School of Business, Coursera – Sep 2020
- Employment Communication, IIT Kharagpur, NPTEL – Mar 2021

AWARDS AND RECOGNITION

- Star of the Quarter – FY24, Carborundum Universal Limited May 2024
- First Prize – Industrivia, Siphon 7.0, SVNIT Surat Mar 2022
- First Prize – Shipwreck, STEER, SSN Chennai Mar 2022
- Second Prize – Paper Presentation, Chemignite, Manipal University Nov 2021

LEADERSHIP

- Chairperson, IChE Students' Chapter, SASTRA University Aug 2021 – Aug 2022
- Designer, National Conference on Advances in Process Engineering (CAPE) Jan – Mar 2021

LANGUAGES

English, Tamil (Read, Write, Speak) **Hindi** (Read, Write)