

Maulin Atulbhai Rana (B.E. -Chemical)

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Profile

Seeking a challenging role where I can leverage my skills to drive innovation, enhance operational efficiency, and contribute to the success of complex engineering projects.

Education

Bachelor of Engineering in Chemical Engineering

Maharaja Sayajirao university of Baroda, Vadodara | April 2012

Experience

Senior Process Engineer (Sp. APT) | Tridiagonal Solution Pvt. Ltd.

September 2024 – At present

- Led end-to-end process optimization projects for global clients in refining, petrochemical, and chemical sectors—from problem definition to solution deployment and impact tracking.
- Defined project scopes, schedules, and deliverables in collaboration with clients and cross-functional teams; delivered high-impact outcomes aligned with KPIs.
- Designed and deployed AI/ML-based closed-loop optimization models, leveraging deep chemical engineering insights to improve unit performance and reduce variability.
- Delivered process simulations and **digital twin models** using **Aspen Plus** and **HYSYS** to identify bottlenecks, test strategies, and validate optimization results.
- Conducted data extraction and advanced analysis using **SeeQ**, **JupyterHub**, and custom Python-based analytics to uncover patterns and drive control strategy design.
- Coordinated across engineering, data science, and client operations teams to ensure smooth model integration and change management during digital solution deployment.
- Managed all aspects of project delivery using Agile tools (**JIRA**)—including sprint planning, risk management, documentation, and stakeholder communication.
- Provided technical leadership for **Plant GPT** (Gen AI), ensuring scalability, accuracy, and alignment with chemical engineering fundamentals.
- Conducted training sessions and knowledge transfer for client teams, ensuring sustained adoption and continuous improvement.
- Utilized advanced modeling software to simulate manufacturing units, identify improvement areas, and enhance overall process performance.

Senior Manager | Reliance Industries Limited | Delayed Coker unit.

February 2019 – September 2024

- Spearheaded shutdown and turnaround planning for the Delayed Coker Unit, including coordination with design, safety, and operations teams for Coke Drum Replacement.
- Delivered process datasheets and operating philosophies for new installations such as the Parallel Fractionator, collaborating with project and EPC teams.
- Championed process safety initiatives, including **HAZOP Analysis team**, consequence analysis using **PHAST**, and implementation of PSM modules.

- Managed engineering change requests (MOC) from idea evaluation to field commissioning, ensuring safety, quality, and documentation compliance.
- Reviewed vendor documentation and supported commissioning of packages and new systems ensuring adherence to process specs and timelines.
- Having good command over plant start up safety regulations, Safety work permit system, Pre-startup safety review (PSSR).
- Representative of Energy optimization projects in the unit and maintaining record as per EnMS-50001.
- Participated in the development and review of **PFDs, UFDs, and P&IDs during revamp** and expansion projects, ensuring alignment with operational strategy and design intent.
- Well Cognizant with **P&ID, PFD, SLD** and details component drawings of oil and gas equipment.
- Continually improvising plant operating procedures and updating the Standard Operating Procedures (SOP).
- Involved in implementation of Process Safety Management (PSM) modules to improve safety management and practices.
- Collaborate with multidisciplinary teams, including mechanical engineers, electrical engineers, and project managers, to ensure seamless plant performance.
- Proactively monitor plant parameters using **Foxboro DCS System, DMC2, Aspen IP-21, LIMS**, and publish daily MIS. Maintain 100% compliance with set Quality management standards.
- Actively Encouraging team for better outcome, also training sub-ordinated and juniors (Classroom and field).

Assistant Manager Production | Phillips Carbon Black Limited | Carbon Black Unit, Palej.

June 2017 – January 2019

- Actively participating in trouble shooting of day-to-day activities
- implementation of Process Safety Management modules to improve safety management and practices. Along with training to sub ordinate
- Challenging the design parameter of plant to increase the production of Carbon Black
- Updating Pelletizer design with co-ordination of research team and commissioning
- Product quality Improvement using **Mathlab** Software by targeting process parameter

Process Engineer | Grasim Industries Limited | Grasim- Cellulosic Division, Bharuch.

February 2015 – May 2017

- Led basic engineering activities including **H&MB, PFD, and norms calculation**, ensuring optimal process design and efficiency.
- Participated in equipment sizing, vacuum system design, and energy optimization studies, resulting in reduced water and utility consumption.
- Developed engineering documentation packages for brownfield modifications, including process datasheets, equipment specs, and tie-in packages.
- Responsible for generating MIS report (Material Balance report, Monthly Plant performance report, Monthly safety Audits, Daily First pass yield reports, Maintaining plant performance data, Daily Raw material & Utility Consumption report)
- Facilitated bid comparisons and vendor communications, ensuring timely delivery of equipment and materials.
- **Major achievement:** Reduce in water consumption & Increase efficiency of Multi-stage Flash Evaporator in Vacuum pumps by installing plate heat exchanger and recycling of water (Designing, Procurement, Vendor dealing and commissioning)

- Cooling Tower parameter monitored using Nalco system implementation (Procurement, Vendor dealing and Commissioning)
- Sodium Sulphate production revamp work and resolve quality related trouble shooting with close co-ordination with technical cell and WCM department.
- Major contribution of **SAP** module establishment and conducted training and workshop

Shift In-charge | Sigachi Industries Private Limited | Sodium Chlorate plant, GACL, Dahej.

March 2014 – February 2015

- Commission of Sodium chlorate plant of GACL, Dahej and Asset Management of same
- Trouble shooting during commission of Whitening Vacuum Crystallizer with the help of Vendor and supporting departments.
- Major achievement: Enhancing heat recovery by installation of addition heat exchange in close co-ordination with UDHE engineering team
- Responsible for generating daily MIS report, Inventory management

Chemical Engineer | Camphor and Allied Products Limited | Astro musk Plant, Nandesari.

October 2012 – February 2014

- Commission of New astro musk facility in Nandesari.
- Trouble shooting to improve conversation and finding its root cause using Engineering solution
- Responsible for plant Maintenance, Utility arrangement, product and ETP arrangement for safe and smooth running of plant (Vendor dealing for ETP and Utility like LPS, MPS)

Key Skills

- **Process Simulation & Optimization**: Aspen Plus, ChemCAD, Aspen Hysys, BCT optimization, data-driven decision-making (SEEQ, Jupyter Hub).
- **Process Design & Safety**: H&MB, PFD/P&ID, PHA, PSM, SOP development, incident investigation.
- **DCS & Engineering Software**: DCS operations (Foxboro, Yokogawa), SAP (PP & PM modules), MATLAB, HTRI, PHAST.
- **Project Execution & Management**: Azure DevOps, MOC, JIRA, vendor communications, safety management.

Person Details

- Date of Birth : 15th October, 1990.
- Permanent Address : Trimurti, First Line, Rana Street, Navidharati, Nagarwada, Vadodara.
- Marital Status : Single
- Nationality : Indian
- Passport No. : C2600403
- Language Known : English, Hindi, Gujarati (Native)