KAARNESH RAJAMURUGAN

Technical Solutions Engineer
PORTFOLIO

604 782 4448
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Canada / U.A.E

PROFESSIONAL SUMMARY

Power Systems Engineer with 3+ years supporting delivery of complex energy equipment—from test planning and verification through troubleshooting and commissioning support. I work at the intersection of suppliers, designers/SMEs, and stakeholders, turning messy test data into clear acceptance decisions, corrective actions, and documentation people can actually use. Comfortable coordinating issues across teams until closure, with a safety-first approach and a bias for getting systems to perform as intended in the field. UAE Golden Visa holder; authorized for employment in UAE.

CAREER HIGHLIGHTS - KEY PROJECTS

Ballard Power Systems – Hydrogen Fuel Cell Product Development Vancouver, Canada
System Test Applied Scientist (2023-2025)

Compressor Verification (DVP&R & DOE):

- Authored and executed DVP&R plans for compressor verification, translating customer requirements into clear acceptance criteria and test methods.
- Built DOE test matrices to isolate key drivers of performance and reliability; delivered decision-ready reports that supported component selection and design updates.
- Tests executed within project's CAPEX/OPEX limits, aligning scope, timelines, resources with program priorities.

Extreme & Endurance Testing:

- Executed extreme-condition testing (thermal cycling, durability) to surface failure modes, performance limits early.
- Summarized results into clear reliability thresholds and risk statements, for stakeholder decisions on design updates and operating constraints.

Failure Analysis & Root Cause Investigations:

- Conducted RCA for equipment and system failures (test + field), translating symptoms into evidence-based failure hypotheses and conclusions.
- Managed the closure loop: containment → corrective action → verification testing → report-out, aligning stakeholders on next steps.

Test Station Upgrades & Safety:

- Supported facility and test-stand upgrades (~$1M CAPEX) through installation and commissioning, coordinating contractors, internal SMEs, and vendors to keep scope and interfaces aligned.
- Chaired PHA (design → prebuild→ final inspection), updated SOPs, implemented safety interlocks.

Data Automation:

- Automated test data processing in MATLAB/Python, improving consistency and speeding up reporting.
- Delivered clearer, faster evidence for acceptance decisions, RCA follow-ups, and stakeholder updates.

Worley (Advisian) – Process Engineering (EPC Projects) Abu Dhabi, U.A.E
Jr. Process Engineer (2019,2021)

Client & Project Support (EPC / FEED):

- Supported client-facing FEED and options studies by translating process simulations into clear technical and commercial trade-offs.
- Prepared preliminary sizing, H&M balances and cost/operability trade-offs for clients.

Process Design & Technical Documentation:

- Modeled cryogenic distillation cycles; optimized O_2/N_2 purity vs. power consumption.
- Modelled carbon capture and air separation systems in ASPEN, assessing performance, efficiency, and operating constraints.

Utilities & Controls:

- Conducted utility adequacy studies for pumps, exchangers, and electrical capacity; identified upgrades for higher throughput. Produced PFDs, P&IDs, equipment datasheets, and line lists.

HAZOP/HAZID Participation:

- Documented hazards, safeguards, and recommendations at concept and FEED stages.

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LEADERSHIP & ACHIEVEMENTS

Employee (Engineer) of the Month, 5+ times

- Recognized multiple times as Engineer of the Month for clear technical communication, effective stakeholder alignment, and consistent delivery under schedule and cost constraints.

Team Leadership - Air Compressor Test Lead:

- Led a 3-member team (engineers), responsible for annual test plans, failure analysis, and OPEX/CAPEX for testing.
- Served as the primary point of contact between suppliers, design teams, internal SMEs, and clients to resolve issues related to upgrades, troubleshooting, and field-reported failures, ensuring alignment on scope, cost, and delivery.

Safety Impact - JHSC & PHA Leadership:

- Chaired PHAs across design, pre-implementation, commissioning/startup, operations, and decommissioning phases.
- Elected Rep. to WorkSafeBC, serving as the communication bridge between operations, safety, and regulators.

Efficiency Gains - Data Automation:

- Developed automated workflows using Python, MATLAB, and Power BI, cutting test data processing from hours to minutes and enabling faster decision-making/ effective communication

CERTIFICATIONS/PROFESSIONAL TRAINING

Design Verification Plan & Report – Tonex Institute:

- Certified in DVP&R: requirements mapping, acceptance criteria & validation report best practices.

Design Failure Mode & Effects Analysis – AIAG & VDA Advanced:

- Certified in DFMEA: risk prioritisation, control measures, and corrective action planning.

Engineer-In-Training Status with Engineers & Geoscientists BC:

- Registered EIT with EGBC , progressing towards P.Eng licensure.

Incident Investigation – Pacific Safety:

- Certified to lead root-cause investigations & corrective actions in compliance with WorkSafeBC.

First Aid Level 1 – Pacific Safety:

- Trained in workplace emergency response, hazard awareness, and injury management.

Electrical Safety – Ballard:

- Completed lab-based training in electrical safety, lockout/tagout, and hazard mitigation.

EDUCATION

UNIVERSITY OF BRITISH COLUMBIA, CANADA

B.A.Sc. Chemical Engineering - Process Specialization, 2023

- Courses: Process Engineering (99%), Unit Ops (88%), Mass Transfer (84%), Simulation(82%)
- Designed and simulated full-scale nano-chitin plant (11,000 t/yr, CAPEX $46M, OPEX $189M) with PFDs, P&IDs, HAZOP, utilities analysis.
- Developed Trickle Bed Reactor for cumene hydrogenation; applied kinetic modelling, heat transfer, scale-up & safety analysis.