



Juan Francisco Cerón Muñoz

Senior Process & Manufacturing Engineer
Continuous Improvement & Plant Support

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Senior Process & Manufacturing Engineer with 10+ years of experience in petrochemical and polymer manufacturing, combining deep process engineering expertise with strong operational and production exposure. Proven track record delivering measurable business impact across energy efficiency, raw material optimization, reliability improvement and process safety.

Recognized for bridging engineering, operations and maintenance, translating complex process analyses into practical, operable solutions. Experienced across the full lifecycle of initiatives: from feasibility and conceptual engineering, through execution and commissioning, to sustained production support and continuous improvement in existing industrial and operating plant environments.

KEY SKILLS

- Process Engineering & Conceptual Design (CDP / FEL-1)
- Production & Manufacturing Support
- Continuous Improvement & Operational Excellence
- Energy Efficiency & Utilities Optimization
- Process Safety (HAZOP, SWIFT, MOC, PSSR)
- Troubleshooting & Root Cause Analysis (RCA)
- Asset Reliability & Lifecycle Optimization
- Techno-economic Analysis & Business Case Development
- Process Simulation (Aspen Plus) & Data Analytics (Seeq, Minitab)
- Performance Dashboards (Power BI)

CAREER HISTORY

SABIC - Cartagena, LX PC plant

October 2023 - present

Senior Process Engineer

Operate across the entire site and multiple process units, acting as a senior technical reference for process engineering, production performance and improvement programs.

Selected impact and achievements:

- Defined and led energy efficiency and heat recovery initiatives across DMC, DPC and CO units, developing Aspen-based mass & energy balances and conceptual engineering packages, with individual projects delivering up to ~500 k€/yr savings.
- Owned the Raw Material Usage Program, combining process modelling, data analytics and operational feedback to identify sources of inefficiency and define optimized operating strategies, achieving ~870 k€ savings vs previous year.
- Delivered complex feasibility and CDP packages for projects in existing operating plants (up to ~3 M€ CAPEX), integrating process design, operability, control strategy and lifecycle cost considerations.
- Enabled asset life-cycle optimization through structured decision-making and cost-risk trade-off analysis, translating recurring reliability and integrity issues into focused studies and prioritized actions, including erosion and corrosion mitigation plans.
- Led and actively contributed to Root Cause Analysis (RCA) investigations covering process upsets, equipment failures and production losses. Translated findings into design changes, new maintenance strategies, operating improvements or [innovations](#).
- Acted as mentor and technical leader within the process engineering team and participated as SME in corporate manufacturing assessments for large international projects (e.g. SABIC Fujian, China).

SABIC- Cartagena, DMC&DPC units

Production Engineer (Temporary Assignment)

May 2024 – October 2024

Embedded within Operations as Production Engineer for DPC & DMC plants, with direct accountability for day-to-day production performance and operational prioritization. Oversaw production KPIs and Production Loss Account (PLA), coordinated corrective actions with shift teams, and supported routine troubleshooting. Managed minor plant changes through MOC and PSSR. Worked closely with Logistics, Maintenance and EHS to align production priorities, risk assessments and execution planning.

SABIC- Cartagena, LX PC plant

October 2016 – September 2023

Supported multiple polycarbonate production units, combining engineering studies, plant trials and sustained production support. Selected impact and achievements:

- Executed **feasibility, debottlenecking and capacity stretch studies** supported by process calculations, **Aspen simulations** and plant data, enabling capacity increases and bottleneck removal.
 - Developed and implemented **process improvements for quality, cost and reliability**, including trials achieving **>99.9% DPC purity** with minimal OPEX impact.
 - Led and supported **plant trials and commissioning activities**, ensuring safe, robust execution and stable operation.
 - Contributed to **process safety and risk management**, supporting incident investigations and the definition of **practical risk mitigation measures** to ensure reliable operation across the site.

PREVIOUS HISTORY

SABIC – Cartagena & BoZ (Netherlands)
Manufacturing Graduate Program (SEEd Program)

September 2014 – September 2016

Two-year rotational program covering Engineering, Operations, Reliability and EHS, including a 6-month international assignment at SABIC BoZ (Netherlands).

Polytechnic University of Cartagena (UPCT)
PhD Researcher – Thermal & Fluid Engineering

February 2014 – August 2014

Research focused on numerical modelling and heat transfer analysis applied to flat-plate solar thermal collectors. Published article in *Applied Energy*: <https://doi.org/10.1016/j.apenergy.2014.11.069>

EDUCATION & QUALIFICATIONS

MEng Industrial Engineering
Polytechnic University of Cartagena

10/10 – 10/02

BEng Mechanical Engineering
Polytechnic University of Cartagena

10/07 – 09/10

MEng Computational Fluid Dynamics
Universitat Rovira i Virgili

10/20 - 07/22

Published article in European Journal of Mechanics - B/Fluids: <https://doi.org/10.1016/j.euromechflu.2025.02.004>

TRAINING & CERTIFICATIONS

- First Certificate in English, B2 (University of Cambridge)
 - Process Hazard Analysis (HAZOP, SWIFT) – Facilitator Training (DEKRA)
 - ATEX Hazardous Area Classification (DEKRA)
 - Six Sigma Green Belt
 - Power BI & Advanced Data Analytics
 - Reliability Centered Maintenance (RCM2 – ALADON)
 - Maintenance Strategies (RCM, RCA, RBI – Meridium)
 - Introduction to Project Management (IFP training)
 - Instrumentation and Process Control (IEP training)