

RAUL VELASCO PELAEZ

AI-Enabled Engineering Transformation | Global Program Leadership & Technology Strategy
raul.velasco.pelaez@gmail.com • +1 (832) 664-1039 • linkedin.com/in/raulvelascopeelaez • Greater Houston, TX

EXECUTIVE SUMMARY

Senior leader with 15+ years of industrial Engineering/R&D experience leading AI-enabled transformation programs across global, multi-site organizations (Houston, India, Saudi Arabia, the Netherlands). Currently define and lead the data analytics and AI-assisted research strategy for a 1,000+ scientist R&D organization at SABIC, translating AI capability into measurable operational impact. Proven track record driving large-scale organizational change: built a new team and operating model from scratch during a company-wide R&D reorganization, and led global, cross-cultural engineering teams of 15 across competence centers. Strong executive stakeholder management and program/portfolio management across complex, matrixed organizations. Holder of 20+ international patents. Native Spanish, fluent English.

KEY COMPETENCIES

AI-Enabled Operations & Process Transformation | Program & Portfolio Management | Global R&D/Engineering Leadership (multi-site, cross-cultural) | Change Management & Organizational Transformation | Executive Stakeholder Management | Data & Systems Infrastructure for AI-Assisted Research | Techno-economic Modelling & Business Cases | Pilot-to-Commercial Scale-up | IP & Patent Portfolio Development | Sustainability & Circular Economy

PROFESSIONAL EXPERIENCE

SABIC

Greater Houston, TX

Leader, Data Innovation

Apr 2025 – Present

- Define and lead the data analytics and AI strategy supporting 1,000+ scientists across SABIC's global R&D organization, setting the direction for AI-assisted research at scale.
- Translate business needs into a portfolio of data-driven, AI-enabled initiatives spanning manufacturing asset optimization and advanced materials development, working with internal teams and external partners.
- Manage the computing infrastructure and software platforms (systems and data integration) underpinning AI-assisted research, ensuring scalability, reliability and alignment with organizational priorities.
- Built and led the Data Innovation team and operating model from scratch during the 2025 R&D reorganization — a large-scale organizational change that included selecting the team, redefining ways of working, and building a value-driven portfolio.

SABIC

Sugar Land, TX

Senior Manager, Process Fundamentals

Oct 2022 – Apr 2025

- Led a global, multidisciplinary engineering team of 15 subject matter experts across Houston, India and Saudi Arabia — spanning computational fluid dynamics, heat transfer, fluidization, mixing, separations, data science and process design — as the company's Engineering Center of Excellence.
- Managed resources and prioritization across a dynamic project portfolio (40 projects in 2022, 60 in 2023) supporting other R&D and business groups, with direct P&L impact.
- Initiated the Data Science competency that seeded the Data Innovation function, and co-designed a Citizen Data Scientist program with a hub-and-spoke operating model to build data skills across the organization.
- Coordinated the joint resource assessment between Corporate and Business R&D (two consecutive years), used by the EVP to set budgets at a strategic level.

SABIC

Sugar Land, TX

Senior Manager, Reaction Engineering & Technology Development

May 2021 – Sep 2022

- Led a team of 15 reactor engineers and scale-up experts, overseeing experimental and computational workstreams to improve reactor performance and process efficiency.
- Built a company-wide Reaction Engineering Community of Practitioners, influencing technical direction across organizational boundaries without direct authority.
- Delivered breakthrough technology developments aligned with SABIC's innovation roadmap, including the world's first large-scale electrically heated steam cracking furnace, developed jointly with co-development partners SABIC, BASF and Linde.
- Led the electrification technology development workstream (2018–2021): evaluated equipment vendors and progressed designs from proof-of-concept through scale-up and commercial co-development.

SABIC

Lead Scientist – Circular Economy

Sugar Land, TX

Nov 2018 – May 2021

- Led SABIC's long-term circular economy research programme, building experimental capabilities (reactors and analytical equipment) to prototype novel chemical recycling routes through proof of concept and pilot-plant demonstration.
- Led global, cross-cultural project teams (Houston to Shanghai) evaluating 50+ early-stage pyrolysis technology companies over two years — separating real technological advantage from sales pitch and aligning business, Ventures and R&D stakeholders across regions.
- Coordinated the SABIC-Saudi Aramco joint development program that produced the first ISCC+ certified circular polymers in the MENA region — one of the most operationally and logistically complex projects led to completion in this period.
- Co-led the Americas Circular Economy strategy with the regional business unit leader, bringing together Sustainability, Commercial, Technology and Business Development stakeholders; presented results to EVPs and the Excom committee during site visits.

SABIC

Senior Scientist – Oil-to-Chemicals Technologies

Sugar Land, TX | Geleen, Netherlands

Sep 2012 – Oct 2018

- Architect of SABIC's Oil-to-Chemicals technology portfolio; led ideation, evaluation and proof-of-concept development of novel conversion technologies aligned with business strategy.
- Led technology evaluation and licensor selection for 6 key technologies representing over \$300MM in value, and owned the integrated economic model used for flowsheet and technology selection, presenting results to the EVP of Technology.
- Led the Oil-to-Olefins platform, using fail-fast techno-economic screening to select step-change research projects; the work resulted in four new R&D programs endorsed by the EVP of Technology & Innovation.
- Contributed actively to the development of SABIC's proprietary IP portfolio in process technology, co-inventing 15+ patents filed internationally.

AVEBE

Bioprocess Designer

Veendam, Netherlands

Oct 2010 – Oct 2012

- Supported the scale-up of AVEBE's Solanic potato protein production plant, with a focus on computer-aided simulation of bioprocess unit operations.

EDUCATION

PDEng, Process and Product Design — Eindhoven University of Technology, Eindhoven, Netherlands	2008 – 2010
MSc, Chemical Engineering — University of Alicante, Alicante, Spain	2000 – 2006
BSc, Applied Chemistry — University of Strathclyde, Glasgow, UK	2003 – 2004

PATENTS

- 20+ international patents on oil-to-chemicals conversion, cracking, plastic recycling and electrification of chemical processes. Selected:
- Process for the conversion of crude oil to petrochemicals (US Patent 10,927,314 B2)
- Process for producing BTX from a mixed hydrocarbon source using catalytic cracking (US Patent 10,358,612 B2 – Sole inventor)
- Light olefin production via an integrated steam cracking and hydrocracking process (US Patent 10,899,979 B2)
- Method of processing waste plastic and pyrolysis oil from waste plastic (US Patent 12,441,668 B2)
- Heat recovery devices for electrically heated cracking processes (European Patent 4,669,729 A1)

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

- SABIC Global Business Enabler Program – Thunderbird School of Global Management (2025)
- Innovation and Entrepreneurship – Stanford University (2019–2021)

LANGUAGES & TECHNICAL SKILLS

Languages: Spanish (Native) | Catalan (Native) | English (Full Professional) | Dutch (Working) | French (Basic)

Technical: AI/ML research tools | Data analytics | Process simulation (Aspen, HYSYS) | Economic modelling | Computational fluid dynamics (team expertise)