

EDWIN OVIEDO

DR. | CATALYSIS R&D SCIENTIST: HETEROGENEOUS PROCESS OPTIMIZATION

CONTACTO



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KEY SKILLS

- Heterogeneous Catalyst Synthesis @ Rational Design
- High-Pressure Reaction Engineering & Process Scale-up
- Catalytic Selectivity Tuning @ OPEX Optimization
- Advanced Nano-Analytics (HRTEM, TPD, TPR) & Active Site Elucidation
- Fuel-Cycle R&D & Technology Transfer

EDUCATION

- **PhD in Engineering**

University of Carabobo, Venezuela
2013-2019

- **PhD Internship in Chemistry**

University of Poitiers, France
2014-2016,

Supervisor: Dr Sylvette Brunet

- **Chemical Engineer**

University of Carabobo, Venezuela
1992-1997

ABOUT ME

Results-driven R&D Scientist specializing in the **design, synthesis, and lab-to-pilot scale-up of high-performance heterogeneous catalysts**. I possess a proven track record of orchestrating chemical symphonies: **quantifiably surpassing commercial benchmarks** (e.g., 100% conversion vs. 43% reference) and **optimizing process efficiency** in hydrotreating and downstream processing. My expertise integrates advanced nano-analytics with **High-Pressure Reaction Engineering**, focusing on maximizing product value and minimizing operational expenditure (OPEX) in fixed-bed reactors.

RESEARCH EXPERIENCE

- **SCIENTIST RESEARCH & INDUSTRIAL ADVISER**

University of Carabobo, Venezuela
2011 -2025

- **Secured International Research Funding** from the **PDVSA/France Cooperation Program** to conduct advanced catalyst development at the **IC2MP, University of Poitiers**. This collaboration validated research methodology against the highest European scientific and industrial standards.
- **Engineered a Catalytic Breakthrough** by designing novel functional materials that achieved **100% conversion in thiophene HDS**. This established a new performance benchmark, **outperforming the commercial reference catalyst** by over 57 percentage points (100% vs. 43%), securing feasibility for ultra-clean fuel production.
- **Product Value Preservation (FCC Gasoline)**: Engineered a highly selective catalyst that **minimized collateral hydrogen consumption** (OPEX reduction) by avoiding olefin hydrogenation, thereby preserving the high octane rating of the fuel stream.
- **Yield Maximization (High-Quality Diesel)**: Achieved an **up to 9-fold increase in selectivity** toward the desired high-cetane product (HID of DBT) and delivered a **14-fold boost in selectivity** in biphenyl hydrogenation, demonstrating success in maximizing catalytic yield.
- **Advanced Analytical Detective Work**: Directed advanced nano-analytical characterization to **elucidate active site mechanisms** (Basicidad vs. Selectividad). This knowledge enabled rational catalyst modification and guided optimization, reducing **lab-to-pilot scale-up** risk.