The Chemical Engineering Department at Southwest Research Institute® (SwRI®) has extensive experience designing and fabricating pilot plants for chemical, biochemical, and petroleum processes. We apply this knowledge and expertise to help our clients meet project requirements and timelines. Multidisciplinary resources are available from our 10 technical divisions, each with many years of experience in design, engineering, machining, and fabrication.

**Fabrication Strengths**
- Modular pilot plant design and fabrication
- Manufacturing Accreditations
  - ISO 9001:2008
  - ISO 14001
  - ASME Code Section VIII – Pressure Vessels, Division 1–3
- Procurement
  - Established vendor contacts/relationships
  - Existing industry contacts for specialty design pieces/reactors
- Specialty coatings on- and off-site (metallics/composites)
- Custom materials/alloys (exotics/plastics)
- Certified welders
- Technicians with 30+ years of experience
- Rigging and large equipment installation experience

**Commissioning and Operation Capabilities**
- 24/7 pilot plant operations
- Experienced operators and engineers
- ISO 9001:2008 documentation and logbooks
- Documentation in accordance with PSM Plan
Engineering and Design Expertise

- Process design and simulation
- Computational fluid dynamics
- 3-D layout and plot plan
- Process flow diagram (PFD) development
- Piping and instrumentation diagram (P&ID) development
- Electrical drawings and design
- Equipment design, sizing, and procurement
- Vessel sizing and engineering drawings
- Materials compatibility testing
- Process control system development and installation
- HAZOP, PHA, and PSSR
- Final design package with complete bill of materials (BOM)

Facilities

- Fabrication high bays and pilot plant pad sites
- Utilities (natural gas, electrical power, air)
- Machine shops for fabrication and machining of custom equipment to precise measurements
- 24/7 on-site security
- Site security at client offices available on request
- Shipping department for coordination of transportation, rigging, offloading, and containment of completed pilot plants
- Texas Commission on Environmental Quality blanket emissions permit for R&D

We welcome your inquiries.
For additional information, please contact:

Michael P. Hartmann  
Research Engineer  
210.520.6927  
michael.hartmann@swri.org

Stephen T. Warnock  
Research Engineer  
210.522.6302  
stephen.warnock@swri.org

Chemistry and Chemical Engineering Division

swri.org