

## **Manufacturing and Process Engineering**

### **MATERIALS DESIGN GROUP**

#### **Examples of Consulting Services**

- Composite structures.
- Characterization of EDM produced surfaces.
- Environmentally friendly products and processes.
- Evaluation of corrosion inhibitors used in steel reinforcement concrete.
- Evaluation of Porcelain Enamels on Aluminum Substrates.
- Evaluation of the Corrosion Resistance of Mild Steel Bars Used in Concrete Reinforcement.
- Evaluation of Concrete Corrosion Inhibiting Admixtures.
- Evaluation of CMCI- 205 as a Liquid Corrosion Inhibitor.
- Mechanical and thermal degradation of polymeric materials.
- Failure analysis and prevention.
- Fracture and Fatigue Failure.
- ISO 9001, ISO 14001.
- Life Cycle Analysis.
- Material development and structural design.
- Materials testing and characterization.
- Materials selection.
- Smart structures.
- Stress Corrosion Cracking of ductile iron and stainless steels used in desalination plants.
- Thermal degradation of thermoplastic polyurethane.

### **MANUFACTURING AND AUTOMATION**

#### **Examples of Consulting Services**

- ISO 9001, ISO 14001.
- CNC Machining Expert Systems
- Manufacturing Data Analysis.
- Safety and Environment.

## **POLYMER AND REACTION ENGINEERING**

### **Examples of Consulting Services**

- Consultant for the design of an industrial project for high pressure separation process for propane/isobutane/n-butane for the use as refrigerant in home and car ACs and coolant systems in polymerization processes, Malaysia.
- Consultant of polyethylene polymerization processes using the UNIPOL technology.

## **PROCESS DESIGN AND CONTROL**

### **Examples of Consulting Services**

- Petrochemicals horizon in the United Arab Emirates.
- Standards and Measurements – Plastics and Chemicals Section – Emirates Authority for Standardization Metrology (ESMA).
- Chlorofluorocarbons (CFC's) alternatives.
- Review of patents and inventions.
- Carried out a consultancy work for Gulf Extrusion (Dubai-UAE) to design a pilot plant for a new process to recycle spent caustic solution used in the die cleaning process.
- Recovery of Spent Caustic Soda from Aluminum Extrusion Process.

## **PETROLEUM REFINING & SEPARATION PROCESSES**

### **Examples of Consulting Services**

Carried out a consultancy work for the Gulf Extrusion Co., Dubai – UAE to design a pilot plant for a new process to recycle spent caustic solution employed in the die cleaning.