Manufacturing Techniques of Traditional and Advanced Ceramic Materials

Overview:
During this course you will master the techniques used for producing and processing ceramics materials, that constitute a wide class of materials including both traditional and advanced materials, used nowadays for many types applications, ranging from construction industry to microelectronics and many others fields.

Objectives:
In this programme you will:
- Acquire knowledge about the market, prices and costs of ceramic materials
- Learn about the chemistry and microstructure of ceramic materials
- Learn the basics of material selection
- Understand how to measure and improve ceramic materials properties
- Understand how to correlate chemical and mechanical properties of ceramics materials
- Learn about techniques of production of selected ceramic materials
- Learn how to process ceramics in order to obtain the desired shape and properties

Contents:
- Classification of ceramic materials
- Applications of traditional and advanced ceramics
- Market, prices and costs of ceramic materials
- Chemical composition of raw materials and final products
- Ceramic powder microstructure and crystallinity
- Nucleation and crystallization of glass ceramics
- Thermal, mechanical and electrical properties of ceramics
- Material testing and characterization
- Raw materials preparation
- Precipitation, spray dry, freeze dry vapour phase and sol-gel techniques
- Ceramics forming
- High-temperature processing
- Drying and finishing ceramic articles
- Glazes preparation and application
- Firing and densification
- Ceramics via Polymer chemistry

Who should attend?
This course is intended for engineers, scientists, technicians, managers and other professionals involved in ceramics industry. These includes: Material Scientist/Engineers, R&D Engineers, Process Engineers, Manufacturing Engineers, Plant Engineers, Quality Control Supervisors, Production Workers, Technical Analysts, Production Managers and Product Line Managers.