

R&D Center - Mantova

The R&D Center in Mantua (Mantova) is organized in different areas of expertise:

Synthesis Laboratories

- Synthesis and catalysis for the production of polymers
- Synthesis and development of new polymers and improvement of the portfolio
- Processes, catalysis and balances LL / VL regarding the basic chemistry

Pilot Plants

- Development of new process technologies
- Scale up of the results achieved in the synthesis labs
- Evaluation of catalytic performance (eg. zeolites)

Physico-chemical characterization

- Support to the activities of products and processes development using the most modern analytical techniques (chromatography, spectroscopy, magnetic resonance, calorimetry, properties of polymers in solution)

Polymer processing and compounding

- Processing of expandable and compact polystyrenes (compression or injection molding, sheet extrusion, thermoforming)
- Processing of polyethylene (spinning bubble, flat text, injection molding)
- Production of polymer blend or grades formulated with flame-resistant properties, resistant to UV radiation, antistatic.



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Polymer Physics

- Characterization of the polymer morphology (by light microscopy, SEM, TEM, EDS, X-ray diffraction)
- Rheology of molten polymers, mechanical and viscoelastic properties
- Correlations between polymer structure, processing and properties
- Evaluation of the properties of the product in relation to specific applications

Process technology (polystyrene, monomers and intermediates, polyethylene)

- Preparation of Process Design Package (PDP) for new installations or for revamping of existing ones
- Evaluation and development of new process technologies
- Assistance to contractors in the various phases of construction of new facilities
- Optimization of operating conditions of industrial plants
- Assistance to licensing activities

Basic engineering

- Design of new facilities or modification of existing ones in cooperation with the units of process technology
- Continuous improvement of proprietary equipment



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The R&D projects cover various subjects, involving a broad spectrum of scientific disciplines:

Styrenic polymers

- Kinetics and modeling of radical polymerization for the synthesis of homo-and co-polymers
- Correlations between synthesis of polymers and their structure
- Innovative approaches to polymerization

Polyethylene

- Omo and copolymerization of ethylene and alpha olefins
- Catalysis of olefin polymerization
- New polymeric products targeted to specific applications

Basic Chemistry

- Alkylation of benzene
- Dehydrogenation of ethylbenzene
- Modeling and study of phase equilibria liquid-liquid and liquid-vapor
- Development of catalytic processes for the hydrogenation of phenol and alpha methylstyrene

For all types of product

- Technical support to maintaining and strengthening the market position
- Troubleshooting



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