



KEY TECHNOLOGIES

The Study and Characterisation of Synthetic and Natural Polymers

Key words : *nanomatériaux, nanocomposites, conversion of natural polymers, synthesis of sulphur materials, biodegradable polymers, new materials from polysaccharides and proteins, new monomers, polymers, copolymers with special functions, conductor polymers, wettability studies, emulsions and micro-emulsions, encapsulation*

THE TEAMS

The teams have a staff of 11, including 6 full-time.

SPECIAL EQUIPMENT

- ▶ Equipment for the synthesis and development of materials:
 - . Laboratory reactors
 - . Stainless steel single-screw extruder prototypes for mixing [compounding] or polymer reactions
- ▶ Equipment for characterising the properties of materials:
 - . Chromatography analysers (CES and CL)
 - . Thermal imaging scanner (DCS, TGA, and TMA)
 - . Viscosity analyser
 - . QELS light scattering
 - . Tensiometers for measuring the surface energy of solid polymers and for measuring the surface tension of polymer solutions
 - . Wettability tensiometer (contact angle)
 - . UV, visible, FT-IR, and mass spectrometers
 - . Liquid or solid Nuclear Magnetic Resonance
 - . Conductimeter
 - . Ultracentrifuge
 - . Polarised light microscope
 - . Microtome
 - . Rheometer

Other equipment is also available through the Réseau Matériaux Polymères Plasturgie (the materials, polymers, plastic processing network) regrouping the resources from the Haute Normandie, Basse Normandie, and Pays de Loire regions.

METHODS, SKILLS AND EXPERTISE

The activities focus on the development and characterisation of new polymer systems. Some research also addresses the following fields:

- ▶ The conversion of natural polymers
- ▶ The synthesis of sulphur materials
- ▶ The alteration of surface properties
- ▶ The development of selective membranes

The development method relies on the technique of molten state synthesis. Skills and expertise have been honed to devise pilot reactors.

COMMITTED COMPANIES

- ▶ ATOFINA (polymer manufacturer)
- ▶ ACOME (cable and optic fibre manufacturer)
- ▶ STANDA (pharmaceutical laboratory)
- ▶ RHODIA

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CONTACTS

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For further information:

Browse our website to find out all about the many opportunities in Normandy, at www.normandydev.com or or send an email to ndcaen@normandydev.com or ndrouen@normandydev.com

SUPPORT TO BUSINESS SET-UP PROJECTS IN BASSE-NORMANDIE

The Basse Normandie Region has rolled out all its resources to support business projects in the following areas:

- ▶ General funding
- ▶ Business project support
- ▶ Training programs
- ▶ Corporate user services at operations site
- ▶ Technology transfer to companies: www.gravir.org and www.ismra.fr and www.ispa.fr

