

# Competitive Intelligence

Key strategic information services for business decision making:

- → Technological Watch: products, manufacturing processes, new materials, application, equipment, markets...
- → Plastics Industry Observatory (Observatorio del Plástico). www.observatorioplastico.com
- $\rightarrow$  Competition and prices analysis.
- → Surveillance Strategic Business Units to create innovative ideas and business opportunities.
- $\rightarrow$  Information for internationalization processes.
- Specialised services for monitoring legislation and standards.
- → Technological Watch newsletters and customised alerts
- → Specialized publications.

# Training

We offer face-to-face, online and tailor-made courses and in-company training about:

- → Materials, properties, characterization, failures, etc.
- → Transformation processes: extrusion, injection, compounding, composites, etc.
- $\rightarrow$  Defects in finished parts.
- → Additivation, fire resistance...
- → Use of recycled material.

Conferences, seminars and workshops about materials, latest developments in markets, new challenges of plastic materials...

www.formacion.aimplas.es



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AIMPLAS PLASTICS TECHNOLOGY CENTRE





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# IN PLASTIC

ELECTRONI **TRICAL-**Ш

The use of plastics in electrical and electronic applications enables the reduction of their weight and size. Furthermore, plastics provide versatility in the design and a better performance besides the electric and thermal insulation.

Plastic is a suitable material to produce a lot of different products and applications, from cables to complex parts, because of customized formulations. That is the reason why it is an excellent alternative to replace metal materials used in applications of electrical-electronic sector, which enables the company to reduce production costs and to obtain more attractive and competitive items.

# **R&D** Projects



The main investigation lines in R&D projects developed by AIMPLAS in the electrical-electronic sector are:

- → Improvement of properties of plastic materials, mainly thermal and surface resistance.
- $\rightarrow$  Conductive polymers to be used in the protection of equipment against ESD (Electro Static Discharge) and EMI shielding.
- → Conductive polymers to replace the metallic cables in LED lighting.
- → Plastic materials with fire retardant additives and non-halogenated smoke suppression properties.
- → Incorporation of inorganic fillers to reduce costs.
- → Incorporation of organic fillers to increase sustainability.
- → Eco-design and use of recycled materials or bioplastics.
- → Funtional coatings: self-cleaning, scratchproof...
- → Materials with functionalities: antimicrobial, antioxidants or biocides.
- → Materials and reinforcements obtained from renewable sources
- → Improvement of thermal conductivity or thermal and/or acoustic insulation properties.

# Analysis and Characterization of Plastics Components

# Chemical and rheological characterization of materials

- Identification and characterization of polymers (thermoplastics and thermosetting).
- Characterization of resins.
- → Melt flow index and other rheological properties. → Identification and quantitation of additives (UV stabilisers,
- antioxidants, antistatics, fire retardants, plasticisers...)
- → Identification and quantitation of fillers (calcium) carbonate, talc, silica, fiberglass, etc.)
- → Carbon Black Content.
- Determination of gel content (Degree of crosslinking).

# Mechanical, physical and optical properties

- → Tensile, flexural and compresion properties.
- Electrical resistivity and conductivity.
- → Impact resistance.
- → Hardness.
- Dynamic Mechanic Analysis (DMA).
- → Optical properties: haze, gloss, colour measurement, vellowness index and whiteness index.



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# Technical Assistance

Our technological skills and professional team allow us to offer quality solutions to solve problems related to plastics in companies of electrical-electronic sector:

- Product design and prototyping.
- → Technical advise on mould making and design.
- Processability studies and elaboration of technical datasheets for processes and final products.
- $\rightarrow$  Optimization of processes.
- Tool changeover time reduction.
- → Audits for cost reduction.
- → Failure analysis.
- Troubleshooting.
- $\rightarrow$  Search and selection of appropriate materials.
- → Legislation and standards in the electrical-electronic sector: REACH. RoHS and RAE.
- → Eco-labeling of materials and /or products.
- Compatibility of recycled materials.



# Thermal properties

- > Thermal transitions: glass and melting transitions.
- → Vicat softening temperature and heat deflection temperature (HDT).
- → Welding temperature.
- → Coefficient of Linear thermal expansion
- → Dimensional stability at different temperatures.

# Propiedades frente a agentes externos

- → Climatic testing (temperature and humdity).
- $\rightarrow$  Artificial accelerated weathering (Xenon and UV lamps).
- → Fire resistance (Flammability vertical UL94).

