AIMPLAS
PLASTICS TECHNOLOGY
CENTRE

Excellence in **Plastics**

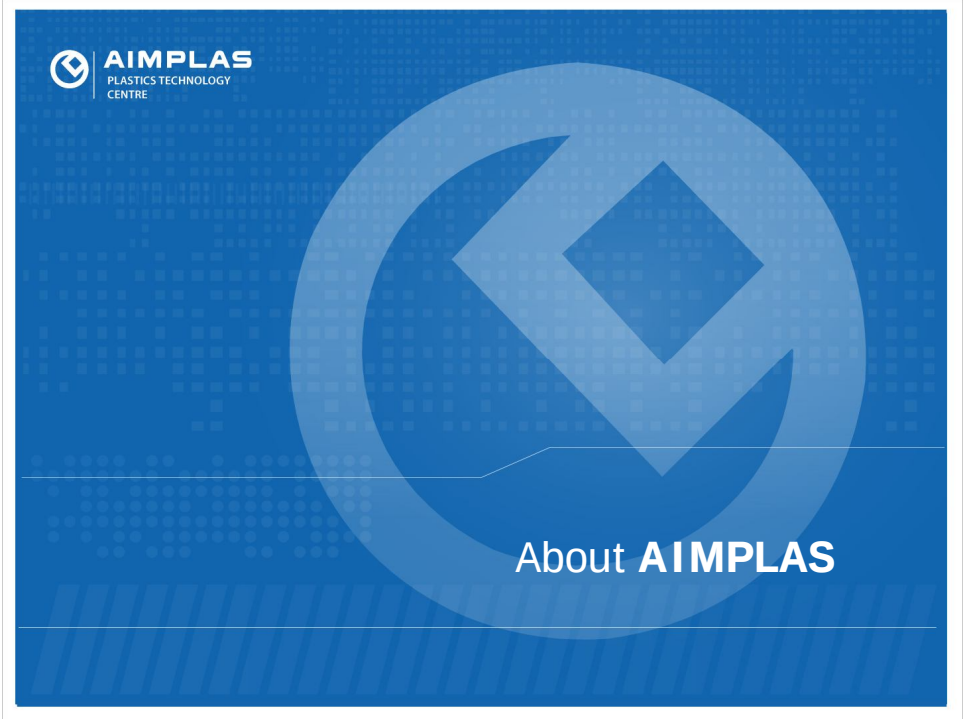
Follow AIMPLAS

Contents

About AIMPLAS

Solutions for plastics

- R&D Projects
- Technical Assistance
- Analysis and Testing
- Competititive Intelligence
- Training



What is AIMPLAS?

AIMPLAS is a **Technology Centre** with more than 20 years of experience helping companies in the plastic sector

AIMPLAS

Staff

We are a team of more than 100 highly qualified professionals

AIMPLAS

Resources

Over 8,500 m² facilities with state-of-the-art equipment and instrumentation

Our greatest asset: **your confidence**

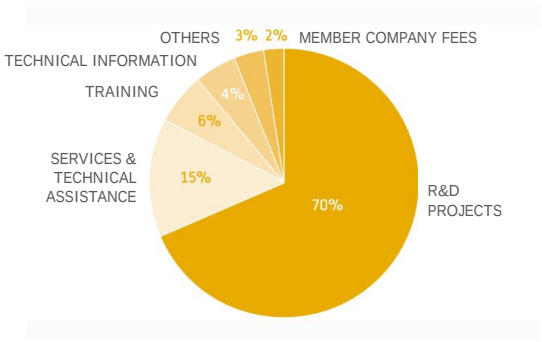
€ 8.3M
revenues

+1,500
customers

+500
members

2013 DATA

Revenues by **activity**



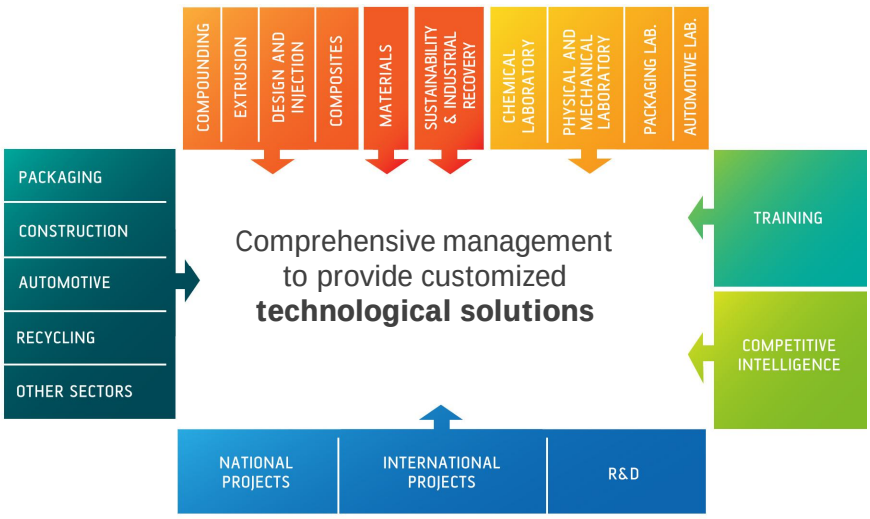
AIMPLAS

Market oriented

AIMPLAS

Global expertise across the whole **plastics value chain**

AIMPLAS



AIMPLAS

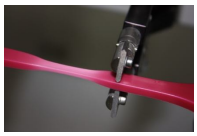
We work with industry leaders...

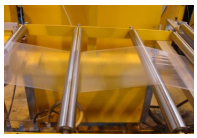
And also with SMEs committed to R&D and quality

AIMPLAS
PLASTICS TECHNOLOGY CENTRE

Solutions for Plastics

Solutions for Plastics





- > R&D Projects
- > Analysis and Testing
- > Material Processing
- > Technical Assistance
- > Competitive Intelligence
- > Training

R&D Projects

Innovative solutions accessible to industry

AIMPLAS

101 R&D projects

35 European

66 National

260 Companies

191 SMEs

Over **€6.8** million **economic return to companies**

2013 DATA

AIMPLAS

R&D Lines

1 Development of polymeric materials

2 Improving transformation processes

3 Product development

1. Development of polymeric materials

Sustainable materials
- Renewable sources
- Biodegradable
- Recycled

Nanomaterials

Materials with advanced properties
- Thermal and electrical conductivity
- Fireproof materials and smoke suppresors
- Active and smart materials
- Improved tribological properties
- High-barrier
- Materials for Additive Manufacturing Processes

High performance composites

Functional coatings
- Self-cleaning
- Superhydrophobic / superhydrophilic
- Scratchproof and wear resistance
- Barrier properties

Improvement of materials' properties

2. Improving transformation processes

Dispersion and rheology of blends

Continuous fiber reinforced thermoplastic composites

Development of advanced-curing systems for composites

Reactive extrusion

3. Product development

Packaging

Active and intelligent packaging

Food safety

Recycled plastic for food contact

Construction

Thermal and acoustic insulation

Wood-plastic composites

Use of recycled plastics in asphalts and other construction applications

Automotive and Transport

Lightweight structures with high stiffness

Renewable materials with high thermal resistance

High-performance surfaces (anti-scratch, anti-microbial, anti-odor)

Energy

Thermal, proton and electrical conductivity

Solar collection capacity

Piezo-electric materials

Recyclability

3. Product development




Electrical-Electronic

EMI shielding

ESD (Electro Static Discharge) protection

Flame retardants

Agriculture

Compostable materials

Use of recycled plastic materials

Functional materials: Anti-microbial, anti-insect, light scattering, …

Sport and leisure

Lightweight materials with high mechanical performance

Sustainable composites

Ergonomics and customization

Medicine

Materials with new features

Materials from renewable sources

AIMPLAS

Your success is our goal




Packaging

Biodegradable and compostable juice bottles made from sugars and other residues present in the waste water from the juice industry.

Development of more ecological and economic packaging for pre-cooked food.

Development of active packaging with natural additives obtained from agroindustrial waste.

High barrier biodegradable materials for food packaging.




Construction

Flooring with antimicrobial properties for schools, nurseries and hospital.

Wood Plastic Composites for semi-structural applications and decorative elements.

Nanotechnology to develop smart sensors that allow monitoring roads and bridges in order to alert of changes in the structure.

Innovative plastic materials with thermal conductivity to replace metal in solar collectors.

AIMPLAS

Your success is our goal

Automotive and transport

Biomaterials from flax and hemp with fireproof properties to build train interiors.

New plastic scratchproof coating for dashboards and door panels.

Development of automotive plastic components with sensor function integrated in smart textile that avoid scuffs, scrapes and vibrations.

Nanotechnology for intrinsically coloring outer parts of vehicles and replace the wiring in lights and headlamps.

Recycling

Development of a stretch of road in Madrid with asphalt incorporating plastic waste.

Recycled plastic reinforced with natural fibers to produce rafts for mussels cultivation.

Recycling of industrial waste plastics containing carbon nanotubes for subsequent introduction into the electric-electronic industry.

Using recycled material to develop packaging for the food industry.

AIMPLAS

Your success is our goal

Aeronautics

Innovative material that prevents ice buildup on the wings of airplanes.

Agriculture

Development of irrigation pipes 100% biodegradable.

Electrical

Electrical conductive plastics for medical, automotive and military industry.

Naval

Innovative shield to increase security on vessels.

Medicine

Spine customized implants manufactured in 48 hours.

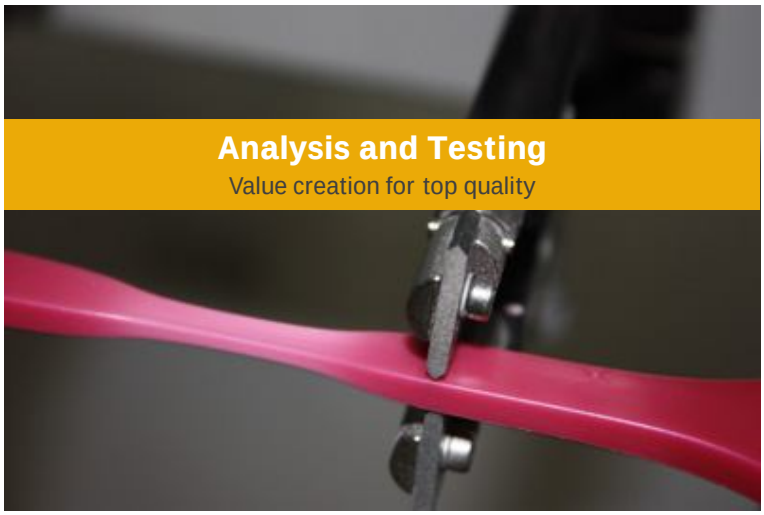
Furniture

Bollard made from recycled tires through an innovative process increasing road safety.

Sports and leisure

Biocomposites of vegetable origin to develop a front diffuser of F3 car.

AIMPLAS

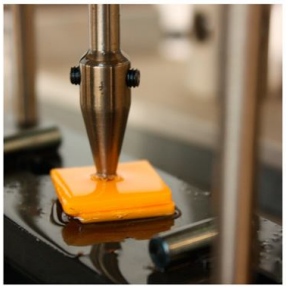


Analysis and Testing

Value creation for top quality

AIMPLAS

We provide you with more value through results analysis



Identification and characterization
- Polymers
- Additives and reinforcements
- Residual substances

Mechanical properties

Optical properties

Rheological properties

Physical and thermal properties

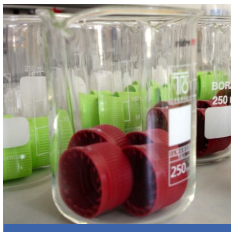
Performance against external agents

Internationally accredited laboratories according to ISO/IEC 17025

ilac-MRA ENAC

AIMPLAS

Sectorial laboratories



Packaging

Automotive

Construction

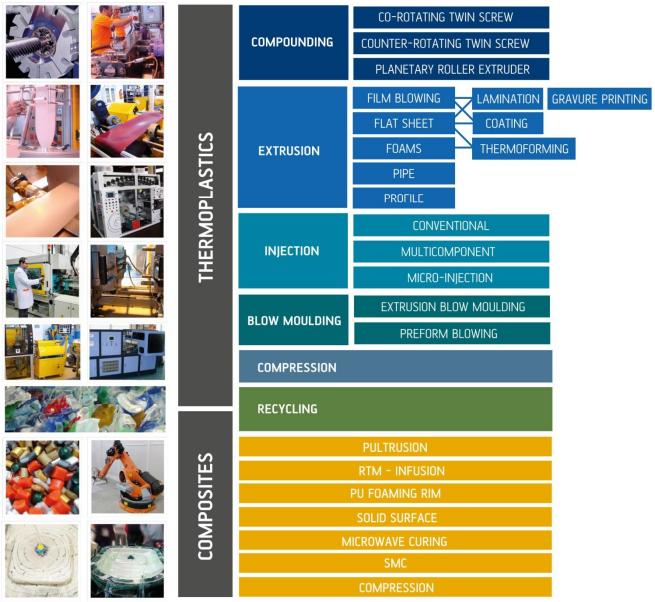
Sheets
Tanks: CE marking
Pipes...

AIMPLAS

Material processing

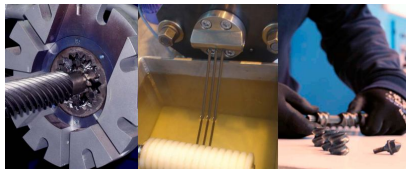
More than 20 pilot plants
for the main plastic processing technologies

AIMPLAS



AIMPLAS

Processes: **Compounding**



Taylor made compounds. Short batches of special compounds.

Formulation adjustments and optimization.

Plastic materials **compatibility**.

New **additives and fillers** for plastics incorporation.

Fillers and fibres dispersion studies.

Simulation software for Twin screw Extrusion process. Throughput and screw configuration optimization. Scale-up from pilot plant to industrial extruder.

AIMPLAS

Processes: **Extrusion**

Processing evaluation in pilot plant:

- ✓ Blown film extrusion, up to 5 layers
- ✓ Cast sheet extrusion, up to 5 layers.
- ✓ Pipe and tube extrusion (Ø 16 mm). Single-layer or bi-layer structures.
- ✓ Different geometries and materials profiles.
- ✓ Foam extrusion, chemical and physical foaming with CO2.
- ✓ Extrusion blow molding to obtain bottles (up to 200 ml). Up to 3 layers structures.
- ✓ Film lamination, multilayer structures and coating (maximum width 400 mm).
- ✓ Auxiliary processes: Thermoforming moulding, vertical packaging and heat-sealing (MAP).

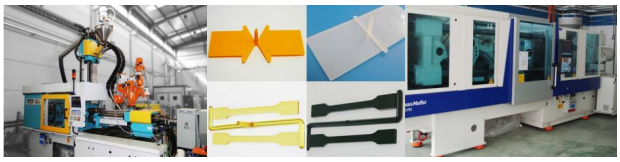
Special processes: Reactive extrusion and elimination of volatile contaminants.

Industrial up-scale of extrusion processes developed in pilot plant.

Advising in machinery, tools and auxiliary equipment purchase.

Technological assistance in production plants from raw material reception to final product control.

Processes: **Injection**



Product design and development: sketch creation, rapid prototyping, 3D advanced modelling and model manufacturing (CAD-CAM-CNC), calculation simulation tools for mechanical stress (FEA).

Technical assistance for problems resolution during production.

Moulding injection of standard samples: ISO A, ISO B, ISO F, ISO D2 and UL94 (3.2, 1.6 and 0.8mm).

Experimental tests with commercial materials or new developed compounds, using AIMPLAS or customer moulds.

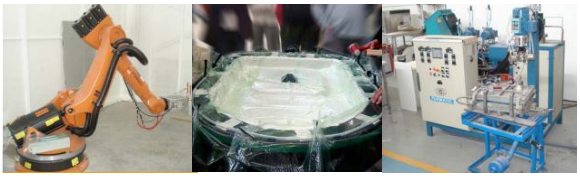
Determination of ratio flow path / thickness (spiral standard mould).

Determination of shrinkage according to standard UNE 294.

Mould testing (injection moulding machines of 12, 100, 130 and 160 Tn).

Pre-series manufacturing for product validation.

Processes: **Composites**



Reinforcements, resins, fillers and additives selection for different applications, including assessment of formulation and processing and validation testing of the final product. **Biomaterials**.

Mould design, process optimisation and pieces extraction according to resin-transfer processes (RTM, RTM-Light and infusion) and pultrusion.

SMC and Prepegs prototypes. Materials selection to comply with specifications.

Development of formulations in **solid surfaces** to improve properties of high inorganic filler products.

Incorporation of **nanomaterials** in formulations and prototypes obtaining. Properties characterisation.

AIMPLAS

Technical Assistance

More than a provider, a trusted technology partner

AIMPLAS

specialized advice in PLASTIC

Reduction of product costs

Improvement of product properties

Ecodesign

Advice on legislation and standards

Failure Analysis

Product and process development

Expert reports

Technology audits

AIMPLAS

Competitive Intelligence

New business opportunities for your company

AIMPLAS

‘Observatorio del Plástico’

The first Technology Watch System specialized in plastics

- TECHNOLOGY
- MARKET
- ECONOMIC ENVIRONMENT

www.observatorioplastico.com

Information for innovation

Information for managing innovative ideas and opportunities

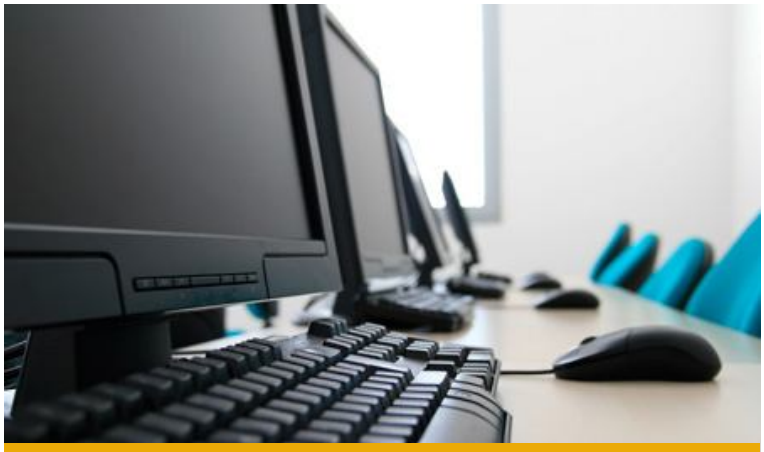
Market and competitive information

Legislation and standards for industrial sectors (DSI)

State of the Art reports

Reports on technologies

* Our information services are powered by softVT™ a specialized software for technology watch (**www.softvt.com**)



Training

We promote professional excellence in the sector

AIMPLAS

Our training programmes

- Conferences and seminars
- Tailor-made training
- Professional recycling courses
- Online training and webinars
- Official training
  - Vocational Training
  - Master in Polymer and Composite Technology

CÁTEDRA AIMPLAS · UNIVERSITAT POLITÈCNICA DE VALÈNCIA

129 training activities · **2,100** professionals · **620** companies · **3,400** hours

AIMPLAS

AIMPLAS
PLASTICS TECHNOLOGY CENTRE

Thank you

Contact us:
www.aimplas.net
info@aimplas.es
Phone + 34 96 136 60 40

www.linkedin.com/company/aimplas
Twitter: @aimplas

Fedit RED IT