

DESIGN & INJECTION



**AIMPLAS**  
PLASTICS TECHNOLOGY  
CENTRE



# innovation IN PLASTIC



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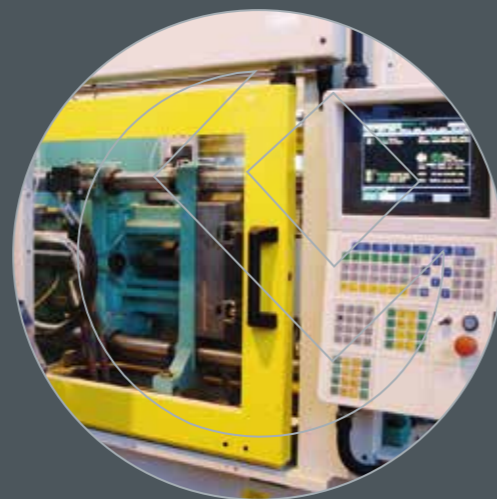


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The use of injected parts in final products is growing in different industrial sectors such as packaging, automotive, household appliances, electric and electronic devices, health and sports.

The increasing incorporation of injected plastic parts in those sectors is directly related with the innovation of products aligned with the customers demand.

Supporting the companies in this competitive improvement, taking into account material, part design optimization and process, is one of the core activities of AIMPLAS in Design and Injection.



### R&D lines

#### Polymeric materials:

- Biodegradable materials, biopolymers, natural fibres, fillers and additives from natural sources, etc.
- Improvement in the properties of conventional materials.
- Foam materials.
- Nanocomposites materials, as metal nanoparticles, carbon nanotubes, graphene, etc.
- Traditional materials substitution (as wood, metal or glass).

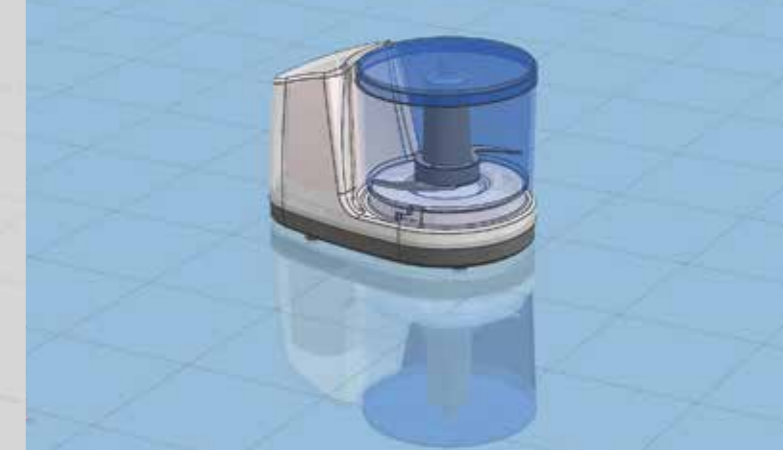
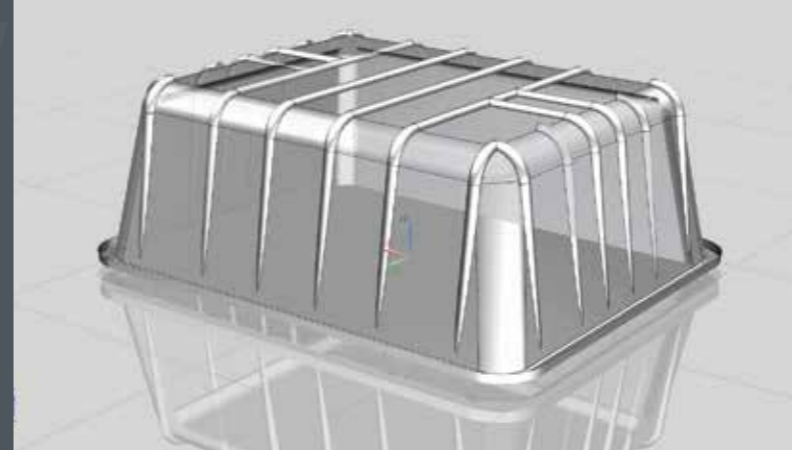
#### Improvement in moulding processes:

- Processing of thermoplastic materials by different non conventional injection moulding technologies as bi-injection, co-injection, overmoulding, etc.
- New developments in ISBM blow moulding.

## What do we offer?

### Training

- Master's Degree in Plastic Materials and their Processing Technologies.
- CRP (Professional Refresher Course) in troubleshooting in injection moulding process.
- CRP (Professional Refresher Course) in part design.
- Polymer Injection Moulding Process Course.
- Online course in Injection Moulding Process.
- Training in integral reology simulation (validation of new designs, geometries, injection moulding process optimization and their injection parameters, mould cooling, etc) with CAE Moldflow.
- Courses adapted to the particular needs of the companies in the thermoplastic injection sector.
- CAD 3D Design Course, basic and advanced level, with Unigraphics NX.
- Specialized Webinars.



### Design services and product development

Design of plastic parts, made in thermoplastics or thermosets materials (sketch creation, 3D modelling).

Product development through rapid prototyping technologies.

Advanced 3D products development. Model manufacturing of big sizes designs (using CAD-CAM-CNC software).

Using calculation and simulation tools for mechanical stress (FEA) for the validation of new product designs under theoretical conditions for the use of their lifetime.

Complete technical advising in product development and manufacturing technologies (conventional injection moulding, multimaterial injection moulding, blow injection and blow extrusion moulding, thermoforming, etc.)

Technical advising in the study, selection and characterization of materials according to the final product requirements.

Optimization and process generation machining (CAM).

Pre-series manufacturing for part validation (part models for composites manufacturing technologies).

### Injection moulding services

Technical advising for the 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 test with commercial materials or new developed compounds, using AIMPLAS or customer moulds.

Energy consumption studies associated to material and processing parameters.

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

Determination of shrinkage according to standard UNE 294.

Mould testing (injection moulding machines of 12, 50, 100 and 160 Tn).

Pre-serie manufacturing for product validation.

Non conventional injection moulding: bi-injection, co-injection, microinjection, injection stretch blow moulding, bi-component injection (machine with 100 Tn).

### Competitive Intelligence

Elaboration of specific State of Art for product developments, taking into account specific regulations, market situation, legislation and applied standards.

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