

Partners



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Natural Aligned Fibres and
Textiles for Use in Structural
Composites Applications



NATEX Kick-Off meeting, 19– 20 November 2008, Valencia - Spain



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What is NATEX ?

NATEX (Natural Aligned Fibres and Textiles for Use in Structural Composites Applications) is a European Research & Development funded project which aims to develop aligned textiles from natural fibres that are suitable for use as high-strength reinforcing fabrics to produce structural composite materials and components.

Partners in the project

NATEX gathers 16 partners across Europe with various types of expertise in the biocomposites development chain. The project is coordinated by AIMPLAS in Spain.

Funding

NATEX is a collaborative project targeted at SMEs and funded by the European Commission's Seventh Framework Programme (FP7). The funding is estimated at € 3.097M.

NATEX is a holistic, integrated and multidisciplinary approach!

Why holistic?

The project will analyse the nature of natural fibre processing from all points of view.

Why integrated?

The different innovations proposed to improve the performance of the natural fibres will be treated as a whole in a continuous feed-back between the different partners in the project.

Knowledge and expertise will be generated from industrial companies, technological institutes and universities which will be working together across Europe.

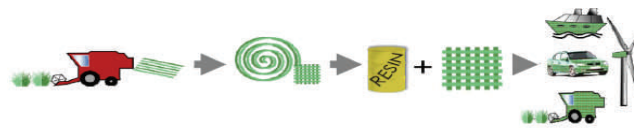
Why multidisciplinary?

The partners involved in the project have the knowledge that the biocomposite production chain requires. There are biologists, physicists, chemists and engineering scientists, from universities, technological centers and companies who provide different skills and expertise from fibre processing to composites processing and parts manufacture to make NATEX a reality.

Objectives and innovations

The main **objectives** of NATEX are to:

- Promote the use of natural fibres in structural applications where traditional materials are currently used; for this purpose hemp and flax natural fibres are used
- Make the shift from resource to knowledge intensive industry through the development of advanced technical textiles
- Bring innovative developments in various areas: fibre preparation, yarns manufacturing, fabric architecture, polymer selection and modification, processing, joining technologies, design of parts using CAD/CAE tools, etc.

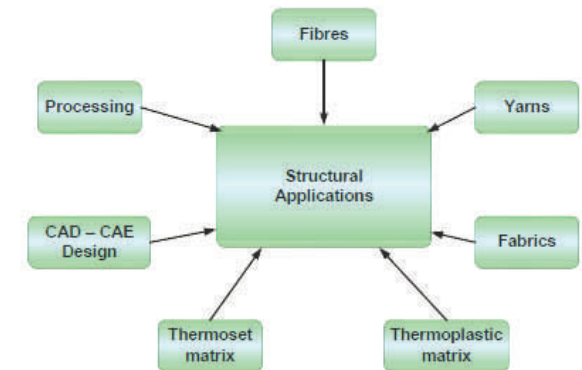


As a result, aligned natural fibres with improved properties will be combined with thermoplastics and thermosets, increasing the mechanical properties of biocomposites and introducing them in structural applications in different sectors.

NATEX aims to generate the following **innovations** :

- Development of new and innovative chemical/enzymatic treatments to obtain desired interface properties when combined with polymer matrices;
- Specific treatment of the yarn (chemical & natural) and new methods for low twist yarn production, film stacking and commingling;
- Natural fibres' modification with the aim of enhancing yarns' mechanical properties;

- Development of new weaving techniques to improve fibre impregnation by the polymer and obtaining of innovative 3D textiles;
- Control of resin viscosity by using thermal conductive additives while increasing their compatibility with natural fibres by using coupling agents and surfactant additives



Methodology of the project

The new products – based on natural resources – will be able to compete and offer alternatives in applications where materials from non renewable resources are used nowadays.

Case studies

For the validation of the new materials and processes, 4 case studies will be developed, by designing specific parts used for structural applications in four industrial sectors: transport systems (automotive), energy systems (housing for solar and thermal panels), agricultural systems (tractors) and shipbuilding (inside door).