



Natural Aligned Fibres and Textiles for Use in Structural Composites Applications



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General information about the project

- **Full title:** Natural Aligned Fibres and Textiles for Use in Structural Composites Applications
- **Acronym:** NATEX
- **Funding scheme:** Collaborative project targeted to SMEs
- **FP7-Cooperation – Theme 4 – NMP** - Nanosciences, Nanotechnologies, Materials and new Production Technologies
- **Call identifier:** FP7-NMP-2007-SME-1
- **Topic:** NMP-2007-4.0-2 Application of new materials including bio-based fibres in high-added value textile products
- **Number of partners :** 16
- **Funding:** € 3.097 M, budget: € 4.180 M



Partners in the project

Beneficiary no.	Partner name	Abbreviation	Type	Country
1	Asociación de Materiales Plásticos y Conexas (Coordinator)	AIMPLAS	RTD	ES
2	NetComposites Ltd.	NETCOMP	SME	UK
3	European Plastics Converters	EuPC	ASSO	BE
4	AGCO S.A	AGCO	LARGE	FR
5	Formax UK Ltd.	FORMAX	SME	UK
6	MAREK RADWANSKI, EKOTEX	EKOTEX	SME	PL
7	Technical University of Denmark	DTU	RTD	DK
8	Chemowerk GmbH	CHEM	SME	DE
9	Institute für Verbundwekstoffe GmbH	IVW	RTD	DE
10	Asfibe S.A	ASFIBE	SME	ES
11	John L. Brierley Ltd.	BRIERLEY	SME	UK
12	Piel.S.A.	PIELSA	SME	ES
13	TransFurans Chemicals	TFC	SME	BE
14	Helsinki University of Technology	TKK	RTD	FI
15	Instytut Włókien Naturalnych i Roślin Zielarskich	INFMP	RTD	PL
16	Abensi Energía, S.L.	ABENSI	SME	ES





Objectives

- Promotion of 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
 - Innovative developments in various areas: fibre preparation, yarn manufacturing, fabric architecture, polymer selection and modification, processing, joining technologies, design of parts using CAD/CAE tools, etc.
- **Development of aligned textiles from natural fibres that are suitable for use as high-strength reinforcing fabrics to produce structural composite materials and components**

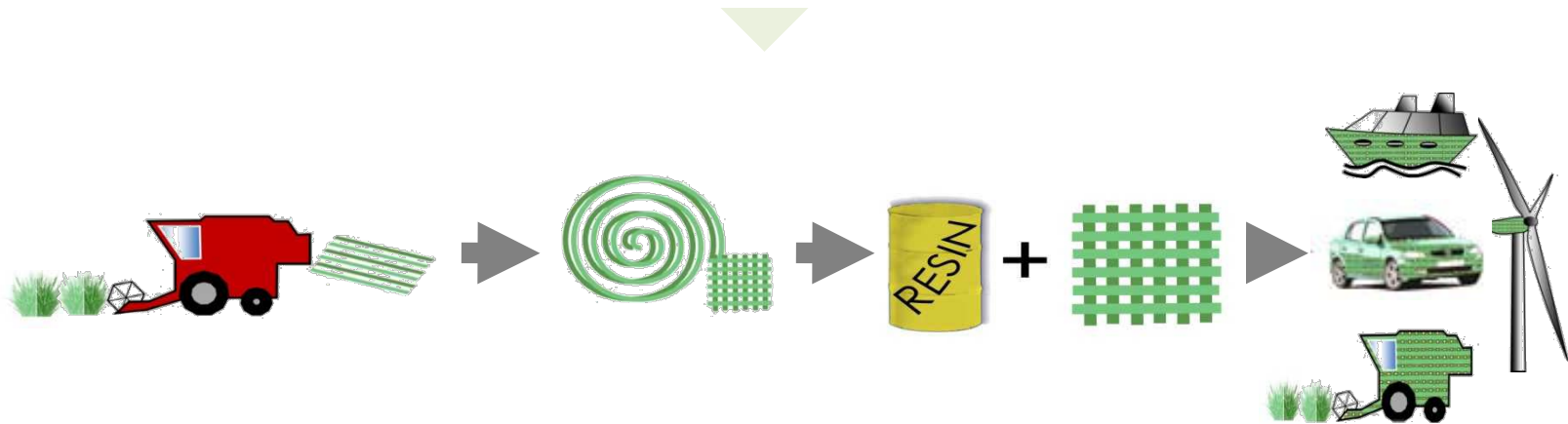


Main innovations

- 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



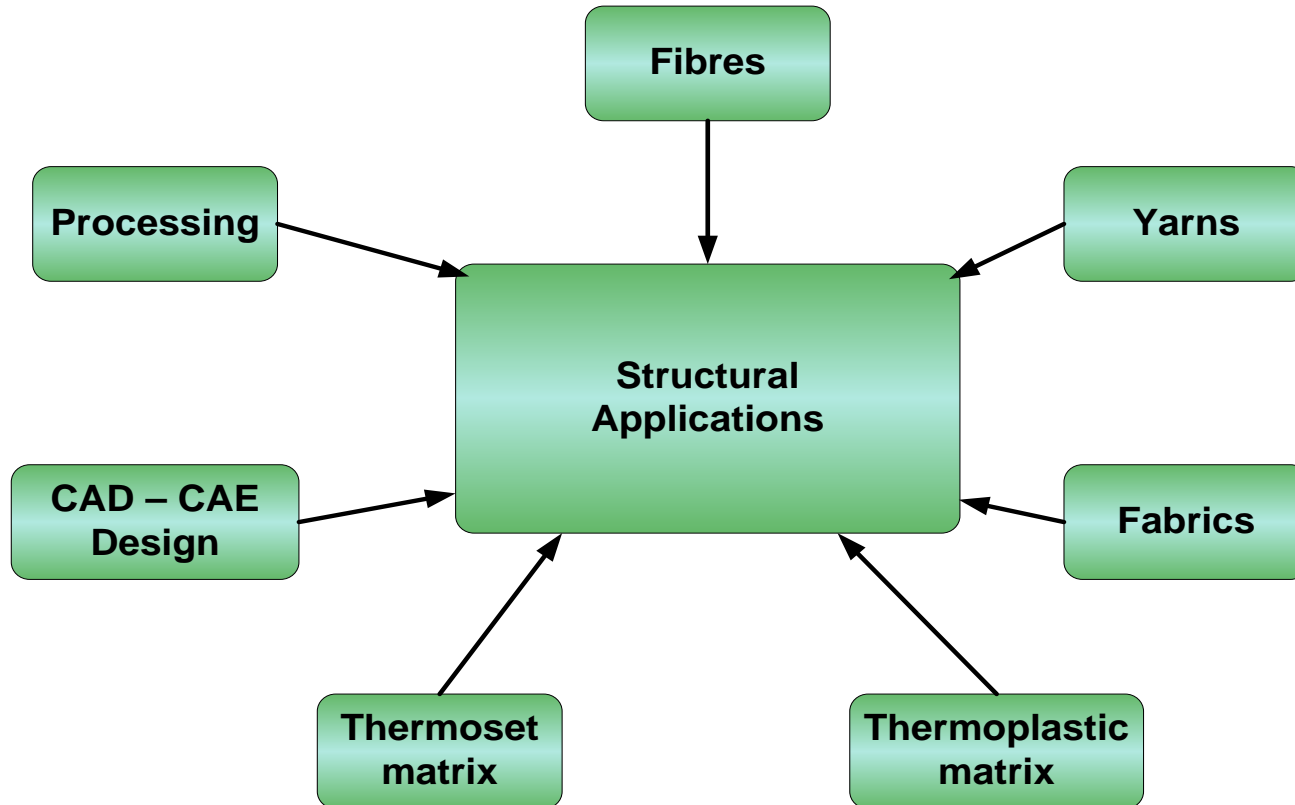
NATEX Objectives & Innovations



- 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



Integrated methodology of the project





Transport systems



Energy system

Case studies



Agricultural equipment



Shipbuilding

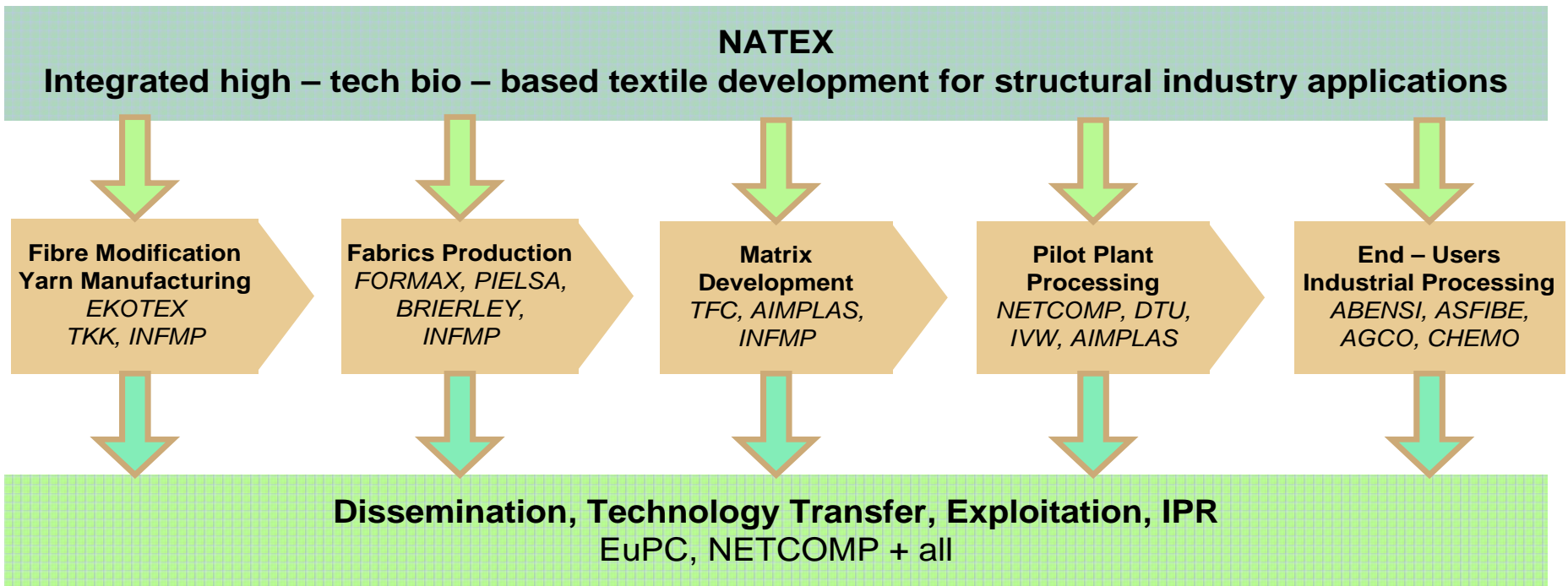


Work structure and Work Package (WP) Leaders

WP No.	Work Package title	Type of activity	Lead participant name
1	Development and modification of natural fibres	RTD	TKK
2	Selection, processing and modification of thermoplastic resin system	RTD	AIMPLAS
3	Development of natural fibre based textile preforms for composites	RTD	INFMP
4	Selection, processing and modification of thermoset resin systems	RTD	TFC
5	Processes development	RTD	NETCOMP
6	Enabling technologies	RTD	CHEMOWERK
7	Case study demonstration	DEM	ASFIBE
8	Environment, safety and economics	RTD	PIELSA
9	Dissemination and exploitation	OTHER	EuPC
10	Project management	MGT	AIMPLAS



Role of partners in the project





Contact

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