MAKE TEXTILE THE MATERIAL FOR THE FUTURE
Imagine our future with textile materials!

CETI is now more than just a tool offered to businesses to encourage and accelerate innovation in the field of advanced textiles. It is a place for inventing and developing new products that meet all the needs of tomorrow’s world. Its service offer remains abreast of societal challenges: Environmental footprints - Smart technology - Live well.

In this approach, nonwoven technologies are a key differentiator. The nonwoven fabric market has a vast growth potential as indicated by the EU scenario for Technical Textiles and the Gherzi analysis. Medical sutures, man-made filament fabrics and spunmelt nonwovens are three of the highest growth items. In this field, the major breakthrough of nonwoven fabrics used in manufacturing absorbent hygiene products (AHPs) must be cited. It is clear that high-profile companies have quickly seized the opportunity to supply this accelerated production (Trend: 9% CAGR).

Meanwhile, efforts to make the textile and clothing supply chain more environmentally sustainable tended to focus, in the past, on production processes and raw materials. But today, nonwoven initiatives regarding already-used, upcycled fibres are extremely pertinent.

In its latest survey dated Dec. 2016, XERFI, one of the most reliable economy analysts, concluded that France represents a fertile ground, favourable for establishing a sector of excellence as far as Technical Textiles are concerned. The survey noted that France has all major advantages to become a leading country in this field. It quotes, as the first of these assets, the excellence of its world reference Research Centers and points out CETI as a partner for many French and international companies who are keen to develop their innovations.

Therefore, CETI is running applied innovation product developments that offer solutions for high-level responses to meet hygiene and medical market needs:

- "lofty spunbond" improving comfort, softness, bulkiness and lighter weights,
- bio-based nonwovens reducing environmental footprint,
- functionalized nonwovens enhancing performances,
- fine filament increasing homogenity separation performance,
- airthrough carded web with flat oven equipment.

“We form a team with our customers to make innovative textiles an essential vector for our future.”
**A POSITIONING/ ENHANCE PRODUCT & PROCESS**

CETI is the center for applied research and development, leader in the prototyping of textile materials. In one place, it concentrates the textile industry’s key manufacturing processes and encourages the cross-fertilization and development of company partnerships that will accelerate the transfer of industrial skills and ability to bring products to the market more quickly.

**FROM FUNCTIONALIZED POLYMERS TO HIGH PERFORMANCE FIBRE**

**CONSTRUCT YOUR PROJECT**
- A source of inspiration.
- State of the art.
- Positioning product innovation in the market.
- Managing associated risks.

**DEVELOP YOUR NEW PRODUCTS**
- Identification of innovative raw materials.
- Elaboration of specifications.
- Spinnability and processability of materials.

**IMPROVE YOUR INNOVATION**
- Product eco-conception.
- Upgrading products/ added value.
- Fine-tuning innovative processes by combining technologies.
- Technical transfer.
- Identification of the value chain / market positioning.
- Promotion of your innovation.

**PROTOTYPE YOUR PRODUCTS**
- 3-D virtualization of the material’s performance.
- Identification of raw materials choices.
- Development of new filaments and nonwovens.
- Multi-component and multi-layer product innovations.

**OPTIMIZE YOUR PROCESS**
- Optimization of raw material uses.
- Search for alternative raw materials.
- Optimization of production costs.
- Integration of specific functionalities.

**DEVELOP YOUR SKILLS**
- Transfer to industry.
- Evolution of skills.

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**CONSTRUCT YOUR PROJECT**

Anne GONTHIER, PhD
R&D Engineer
Senior R&D Project Manager
PhD and Engineer in Organic Chemistry, she has more than 15 years experience in R&D in academic as well as in industry, in multi-disciplinary environments. Since 2011, at CETI, she is in charge of private and collaborative projects from fiber development to nonwovens optimization.

Simon FREMEAUX
R&D Engineer
Production Manager
Graduated Textile Engineer 10 years ago, he began his career in NYLSTAR, Polyamide maker and then joined DOUiquer, where he was in charge of the management of Technical Services. He joined CETI in 2010. He manages some private and collaborative R&D projects from design solutions to prototypes production.

Mélanie MONCEAUX
R&D Engineer
Senior Project Manager
Textile Engineer, began her career in Company DOUiquer as R&D and Testing Laboratory Manager. She joined CETI in 2010 as R&D Engineer, she carries out some private and collaborative R&D projects from the design of solutions until the production of prototypes.

Guillaume CAMBONNE
R&D Engineer
Textile engineer, he joined the CETI team in 2016 as R&D engineer after working in the high-performance workwear sector. He currently leads private and collaboration projects in the field of spinning and nonwovens.

**DEVELOP YOUR NEW PRODUCTS**

**IMPROVE YOUR INNOVATION**

**PROTOTYPE YOUR PRODUCTS**

**OPTIMIZE YOUR PROCESS**

**DEVELOP YOUR SKILLS**

**CONTACT/ INNOVATION@CETI.COM**
ONE OF A KIND
NONWOVENS PLATFORM

MECHANICAL BONDING
HYDRO-ENTANGLEMENT

THERMAL BONDING
ENGRAVING CALENDER

SPUNLAID WEB FORMING
BICO SPUNBOND

OMEGA AIRTROUGH OVEN
BICO MELTBLOWN

THERMAL BONDING
FLAT AIRTROUGH OVEN

DRYLAID WEB FORMING
CARD

AIRLAY

MECHANICAL BONDING
KISS ROLL (INLINE)

SQUEEZER (INLINE)

SMOOTH CALENDER (OFFLINE)

Nonwovens Post-Treatment

Facilities with
High Flexibility Technologies

More than 90% of bonding technologies

Over 150 possible combinations

Centre Européen des Textiles Innovants
Make Textile the Material for the Future
“BI-COMPONENT SPUNBOND TECHNOLOGY IS NOW ASSOCIATED WITH A THERMAL ACTIVATION PROCEDURE IN A SINGLE STEP.”

LOFTINESS

LOFTY SPUNBOND

With Hills Inc., the world’s leader in multi-component spinning, CETI invested in spunlaid spinning technologies like Spunbond and Meltblown. Since the first partnership with the constructor, CETI has accompanied Hills Inc. and its international clients by prototyping new bi-component, lofty, Spunbond nonwovens with insulation, absorption, filtration, resilience or lightness properties. This new range of three-dimensional spunbond nonwovens answers various needs in a wide variety of markets.

“LIGHTWEIGHT, HOT AIR CARDED NONWOVENS THERMO-BONDED”

SOFTNESS

HIGHLOFT CARDED

In a collaboration that began in 2012 with ANDRITZ, the world leader in formation and consolidation technologies for nonwovens, CETI chose to invest in developing carding, needlepunching, hydrojet bonding, calendering and impregnating technologies for nonwovens.

In 2017, ANDRITZ PERFOJET and CETI intensified their collaboration by formalizing a new partnership with the implantation at CETI of a flat oven with a cross-flow hot air that is ideal for lightweight carded webs that correspond to Spunbond bi-component technology. This partnership allows the two companies to develop new high-loft, carded nonwovens, specifically for the hygiene market. This technology for consolidating nonwovens means CETI now covers 90% of technologies used in industries today.

“LOFTINESS SOFTNESS”
**MONO, BI- AND TRI-COMPONENT MELT SPINNING PLATFORM**

**POLYMER FUNCTIONALIZATION**

**CREATING**

**CONDUCTIVE FILAMENTS**

**PROTOTYPING**

**FUNCTIONALIZED FILAMENTS**

**ADDING PROPERTIES**

**INTO THE FIBER CORE**

**CENTRE EUROPÉEN DES TEXTILES INNOVANTS MAKE TEXTILE THE MATERIAL FOR THE FUTURE**

**DURATEX**

**PARTNERS**

CENTEXBEL – CERTECH – CETI – ENSAIT – UCL

**CETI EXPERTISE**

- Prototyping of mono and bi-component filament with antimicrobial properties using the process of mass functionalization.
- Trials of the formulations on compounding and melt-spinning CETI’s pilot lines.

**ECO-FRIENDLY ANTI-STAINING AND ANTIMICROBIAL TEXTILES**

**DURATEX project** is the development of eco-friendly, fluorine-free & hydro- and oleophobic and silver free antimicrobial textiles for durable applications in construction and architecture. Three approaches will be envisaged to obtain water and oil repellent properties: Deposition of nanofibres via layer-by-layer (LbL) technology and chemical modification based on branched hydrocarbons, sol-gel hybrid layers and layer deposition by local solution-reprecipitation using green solvents. Moreover, Biobased product or non-toxic biocides will be incorporated in coatings and filaments in order to obtain antibacterial properties.

**BUILDING USES**

**EXTRUSION - COMPOUND**

**MELT SPINNING**

**CO-EXTRUSION**

**METALLIC-CORE EXTRUSION FILAMENT**

**CRIMPING – CUTTING (FIBRE TRANSFORMATION)**

**FILAMENTS/FIBRES**

**EXTRUSION - COMPOUND**

**MELT SPINNING**

**CO-EXTRUSION**

**METALLIC-CORE EXTRUSION FILAMENT**

**CRIMPING – CUTTING (FIBRE TRANSFORMATION)**
SEABIOCOMP will develop and deliver demonstrators using innovative bio-based thermoplastic composite materials with the following characteristics:

- Tailored durability according to the specific application (2 to >20 years) for a demonstrator in a marine environment as measured by newly developed analytical methods.
- Mechanical properties that are at least equivalent to the ones of conventional oil-based composites.
- Reduced CO2 emission (30%).
- Reduced ecotoxic impact on the marine environment by microplastics as measured by newly developed analytical methods.
- Demonstrated recycling potential of the used materials in the demonstrator.

These characteristics should decrease the overall environmental impact by 50% compared to conventional oil-based counterparts through the entire value chain from production to waste treatment. The proposed bio-composite materials and developed analytical protocols for long-term durability and ecotoxicity should lead to a shifted mind-set along the value chain about bio-based composites being a realistic alternative to oil-based counterparts.

DEVELOPMENT OF BIO-COMPOSITES WITH MINIMAL IMPACT ON THE MARINE ENVIRONMENT

To ensure the success of this project, expertise in various domains including polymer formulation and textiles (Centexbel, CETI), composite formation (ARMINES, UPlymouth & PolyProducts BV), environmental impact and durability studies in sea environment (UPortsmouth, VLIZ & IFremer) has been combined in the SeaBioComp partnership.
DEVELOPING TALENTS

As a training organization dedicated to textile innovations, CETI mentors European companies in the extended Textile industry. The strength of conviction of CETI’s instructors helps each trainee to push their limits to better approach the transformations.

NONWOVENS TRAINING

CETI is the reference in Nonwovens thanks to its collaboration with EDANA’s: The International association of nonwovens and its Industry, EDANA, asked CETI and its R&D team to communicate their skills and knowledge of nonwovens to become the official trainer for The Nonwovens Learning Cycle™.

NONWOVENS INTERMEDIATE COURSE

Identification of different processes of web forming / Discovering the characteristics of technologies for web binding.

Sessions
February 18-20, 2020
May 26-28, 2020
September 29- October 1st, 2020

CARDING ADVANCED COURSE

Innovations in nonwoven drylaid products / An in-depth focus on web forming technology - CARDING.

Sessions
March 11-12, 2020
November 18-19, 2020

MELTBLOWN & SPUNBOND ADVANCED

Innovations in nonwoven spunlaid products / An in-depth focus on web forming technologies SPUNBOND – MELTBLOWN – SPUNMELT web.

Sessions
March 24-25, 2020
November 25-26, 2020

NONWOVEN BASIC

Impact of belt forming on nonwoven processes.

MEDICAL MARKET

Nonwoven materials and processes applied to the medical market.

HYGIENE MARKET

Nonwoven materials and processes applied to the hygiene market.

The originality of these trainings is due to a more concrete, pedagogical approach that includes sharing client experiences and obtaining a hands-on understanding of CETI’s pilot lines and semi-industrials lines for prototyping new textile.

CUSTOMERS BLUEPRINT

REGISTRATION/ TRAINING@CETI.COM