EUROPEAN COMPANY DATABASE FOR SMART TEXTILES AND ADVANCED MATERIALS

Deliverable nº: XY

European company Database for smart textiles and materials

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FOREWORD

This database is a comprehensive data collection material of EU companies, active in the fields of smart textiles and smart materials production. Companies are organized by Classification of technical textiles.

In this database, micro to large companies, startups and incubator projects are collected and presented.

By designing this database, we offer young people information regarding their fields of interest.

The database offers a well-organized, structured overview of EU textile companies active in the fields of smart textiles, smart technology and advanced textile materials as well EU based manufacturers of raw materials, components and services to support ideas in smart textile fields.

The companies in this database are organized based on their specific line of work due to the established Classification of technical textiles.

To clearly define the fields of work in which the company is active, pictograms were developed and are provided at the head of the table describing each company. To better understand the meaning of each pictogram, a list of definitions is provided at the beginning of this document.

Each table is equipped with relevant information about the company so the reader can grasp important information right away. Information such as where the company is located, its website, logo, brief description of company products and technology used are provided in each table.

To ease the search through the textile database, this booklet is provided with a table at the very beginning where all the company names and fields of work are provided with the page number so the reader can quickly browse through the booklet.

HACKTEX

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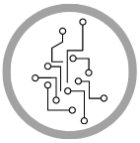
Introduction

For easier navigation through the database, pictograms were created to ease and visualize fields of operations of each company presented in this document.

Table 1: Pictograms and their explanation

	Knitting		**Textile sensors**
	Yarn production		**Textile temperature sensors**
	Smart Yarns		**Medical Textiles**
	Fabric Production		**Textile design**
	Non-vowens		**Laminated materials**
	Sewing		**Workwear garments**
	Pattern making		**Outdoor textiles**
	Weaving		**Flame retardant**

Footwear



Printed electronics

Coatings

For easier navigation through the document, a list of presented companies is available in the table below, providing the area of operations as well as the page number.

COMPANY NAME	LINE OF WORK	PAGE NUMBER
Born GmbH Germany	Sporttech	7
Clim8	Sporttech	8
Schoeller	Sporttech	9
Prevent&Deloza	Sporttech	10
GoodPRO	Protech	11
Teijin Aramid	Protech	12
Wearin	Protech	13
WarmX	Protech	14
Interactive Wear	Protech	15
Albiro	Protech	16
Holik International	Protech	17
pykrs	Protech	18
Bioservo	Medtech	19
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Printed Electronics	Printed electronics	23
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Quad Industries	Printed electronics	25

SPORTTECH

In this chapter, companies that classify and are active in the SPORTTECH fields are presented.

Each table is equipped with pictograms, depicting lines of work where companies are active in, the country where the company is located, a description of available products and technologies as well as a website and a brief company description.

Table 2: Company Born

HACKTEX	SPORTTECH
COMPANY NAME	**Born GmbH Germany**
COUNTRY	**Germany**
PRODUCTS AVAILABLE	Innovative technical textiles, tailor-made "wearables" with integrated sensors, electrodes or stimulators, intelligent yarns and high-end electronics, medical textiles, fashionable knitwear, design, development, and sales of trendsetting fashion collections.
TECHNOLOGY AVAILABLE	Modern flat and circular knitting machines, modern HF welding and thermal printing machines, textiles for electrical muscle stimulation, intelligent yarns and high-end electronics
WEB PAGE	https://born-germany.de/en/home/
COMPANY DESCRIPTION	Family-run, integrated textile company since it was founded in 1991. Using the most modern textile and knitting machines, they develop and produce trendsetting, innovative textile products. Focusing on medical textiles such as orthopaedic human and veterinary bandage systems. Born GmbH owns various patents in the smart textiles field and is constantly refining them in collaboration with customers, leading technical universities, and technical colleges.

Table 3: Company Clim8

HACKTEX	SPORTTECH
COMPANY NAME	**Clim8**
COUNTRY	**France**
PRODUCTS AVAILABLE	Motorcycle, outdoor, workwear gloves and mid-layer sweatshirts with integrated heating system, body temperature sensors, impact, and self-regulating heating systems.
TECHNOLOGY AVAILABLE	Intelligent heating with artificial intelligence embedded in the core8 products. Automatic on-body detection system. Seamless heating elements, smart battery system with intelligent battery usage.
WEB PAGE	https://myclim8.com/
COMPANY DESCRIPTION	A premium wearable technology and special ingredient brand with deep roots in science, data and textiles provides a personalized and automated thermo-regulation experience. A multi-disciplinary team of experts from a wide range of fields, including Doctors, Engineers, and Specialists in Thermophysiology and Human Comfort, IoT, Electronics, Textile Design and Manufacturing.

Table 4: Company Schoeller

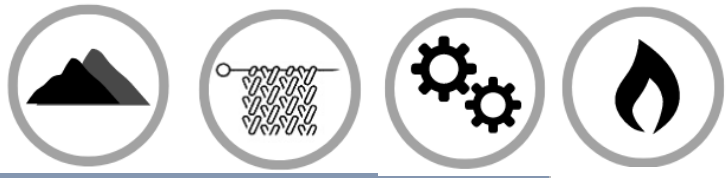
HACKTEX	SPORTTECH
COMPANY NAME	**Schoeller**
	
COUNTRY	**Switzerland**
PRODUCTS AVAILABLE	Functional textiles (Outdoor, sports, Lifestyle, Cosmopolitan), Protective textiles (Motorcycle, Multinorm, Police and military, Circular Workwear), Knitted textiles (absorption, insulation, protection, protection plus), Technical Textiles
TECHNOLOGY AVAILABLE	Flame protection with the aid of pyroshell™ technology. Wind and rain protection with c_change™ membrane, ideal moisture management with 3XDRY® technology, maximum abrasion resistance with ceraspace™ technology. For special units, a suppressed thermal signature – integrated into the specific local camouflage print – with camoshield™ technology. Etc.
WEB PAGE	https://www.schoeller-textiles.com/en/
COMPANY DESCRIPTION	The globally operating company specializes in the sustainable development and production of innovative textiles and textile technologies, which are leaders in niche markets worldwide.

Table 5: Company Prevent&Deloza

HACKTEX	SPORTTECH
COMPANY NAME	Prevent & Deloza
COUNTRY	Slovenia
PRODUCTS AVAILABLE	Tactical and hunting, flame retardant, medical clothes gear. **FireCa**t gear is a sensor-equipped suit for work in dangerous environments. It includes a built-in sensor, an alarm, a first aid plan and a black box. The sensors warn the user about the potential danger as well as inform the central base about the situation, thus ensuring safer conditions in the field. **KINSHIRT** is a kinesiological assistant and a next-generation active, smart shirt, which enables the user to gain valuable insight into the most efficient way to perform individual exercises and reach optimal results, based on data, which is gathered by textile-integrated super-sensitive sensors.
TECHNOLOGY AVAILABLE	Textile integrated sensors, send analysed data directly to the Mobile App via Bluetooth. Factors of breathing frequency, cadence, arms/legs acceleration, and the mobile app interpret the results in a precise visual graphic
WEB PAGE	https://www.prevent-deloza.si/sl/
COMPANY DESCRIPTION	Leading the way in the most innovating protective garment out there. Products meet the standards, do their job flawlessly and look good doing it.

PROTECH

In this chapter, companies that classify and are active in the PROTECH fields are presented.

Each table is equipped with pictograms, depicting lines of work where companies are active, the country where the company is located, a description of available products and technologies as well as a website and a brief company description.

Table 6: Company GoodPro

HACKTEX	PROTECH
COMPANY NAME	**GoodPRO**
COUNTRY	**Czech Republic**
PRODUCTS AVAILABLE	Non-flammable suits, gloves, underwear, curtains and covers. Aluminised suits, protective helmets, shields, and hoods.
TECHNOLOGY AVAILABLE	Production and development of personal protective equipment against heat risks, smart garments for firefighters with new level of active protection. Integrated, sophisticated electronic systems. Smart garments with active protection, providing warnings about possible danger situation and communication with the commander of the intervention.
WEB PAGE	https://www.prevent-deloza.si/sl/
COMPANY DESCRIPTION	Protection wear combines the latest technology with outstanding comfort.

Table 7: Company Teijin

HACKTEX	PROTECH
COMPANY NAME	**Teijin Aramid**
COUNTRY	**Netherlands**
PRODUCTS AVAILABLE	Ballistic vests, automotive breaks, civil engineering products, composites, conveyor belts, cur-protection products, elastomer reinforcements, engineering plastics, flexible flowlines and umbilicals, friction paper, heat and flame-resistant garments, helmets, kiteboarding, mooring lines, motorcycling, optical fibre cables, parachute cords, ropes and cables, sailing, sealing materials, thermoplastic pipes, tires, yachting.
TECHNOLOGY AVAILABLE	Twaron, Teijinconex, Endumax, Technora
WEB PAGE	https://www.teijinaramid.com/en/products/twaron/index.html
COMPANY DESCRIPTION	World's number one aramid producer with a near-50% market share. A company with customers in 74 countries, that has helped break records, send spacecraft to Mars, and drive progress in Formula One.

Table 8: Company Wearin

HACKTEX	PROTECH
COMPANY NAME	**Wearin**
COUNTRY	**Switzerland**
PRODUCTS AVAILABLE	Modular, plug-and-play sensors in protective vests for connected miners, logistic workers, construction workers. Rugged, modular sensors adapted to each mission for defence personnel, Modular, integrated sensors for safer agents and officers, Modular, integrated sensors for safer first responders.
TECHNOLOGY AVAILABLE	Real-time insights for improved mission outcomes, intelligent IoT platform that generates real-time insights by capturing in-mission data from connected sensors and devices. With automatic alerts and a digital platform to visualize key data, Wearin' helps detect and prevent health and safety risks, improve live coordination, and enable remote guidance.
WEB PAGE	**https://wearin.tech/**
COMPANY DESCRIPTION	The company is a tech spin-off, connecting and protecting people in high-risk situations with intelligent IoT solutions that make missions safer and smarter.

Table 9: Company WarmX

HACKTEX	PROTECH
COMPANY NAME	**WarmX**
COUNTRY	**Germany**
PRODUCTS AVAILABLE	Heating underwear for leisure, motorcycling, riding, and hunting.
TECHNOLOGY AVAILABLE	Product development, hard and software development especially adjusted to textile needs,
WEB PAGE	**https://www.warmx.de**
COMPANY DESCRIPTION	Manufacturers of heated underwear gained a reputation amongst developers of smart textiles. The patented technology can be employed in a wide range of applications.

Table 10: Company Interactive Wear

HACKTEX	**PROTECH**
COMPANY NAME	**Interactive Wear**
COUNTRY	**Germany**
PRODUCTS AVAILABLE	conductive textiles to develop and produce lightweight, flexible but robust systems, collaborating with research institutes and specialists for embroidery, weaving and trims to provide components for apparel and interior designers. Electronics are integrated into flexible environments, especially garments and other textile products. Providing components and techniques to merge electronics with textiles, resulting in smart systems and products. Provide new concepts of multimodal user interaction, comprising textile products as smart interfaces, integrated electronics for data acquisition and control, application software for data analysis and mobile applications for complex user interaction
TECHNOLOGY AVAILABLE	Product development, Consulting and engineering, components and systems,
WEB PAGE	**http://www.interactive-wear.de/**
COMPANY DESCRIPTION	The company develops and produces electronic systems designed for textile integration and wearable systems enabling customers to digitize, interconnect and innovate their products. Company focus covers heating, light, sense and feedback solutions. Utilizing technologies such as flexible conductive textiles, connectivity components and modular electronics platforms. Distributed software architecture includes real-time embedded systems, application software and mobile applications.

Table 11: Company Albiro

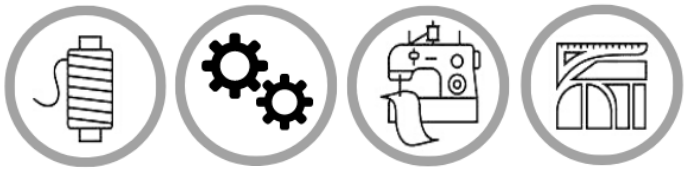
HACKTEX	PROTECH
COMPANY NAME	**Albiro**
	
COUNTRY	**Austria**
PRODUCTS AVAILABLE	ALBIRO sells individual solutions. This is because the clothing must "grow" with the requirements and, follow legal standards.
TECHNOLOGY AVAILABLE	
WEB PAGE	https://www.albiro.at/service.html
COMPANY DESCRIPTION	ALBIRO WORKWEAR ensures that the employees of a company are well dressed, represent their company stylishly and feel comfortable in their work clothes. From farmer to craftsman. Corporate fashion must be individual, highly functional and technically mature as well as adapted to the company's standards.

Table 12: Company Holik

HACKTEX	PROTECH
COMPANY NAME	Holik International
COUNTRY	Czech Republic
PRODUCTS AVAILABLE	Production and development of firefighting and rescue, defence gloves footwear and medical equipment.
TECHNOLOGY AVAILABLE	Holik is using Poron XRD, D30 Impact protection material, Impacton-impact knuckle, Nomex, Kevlar, PBI, Porelle PU FR, Porelle PTFE, Ceramic, NANO, Explorer Sole, YUMA, TOPAZ micro materials. Regarding the technology, SensPro, RFID and NFC Chips are used
WEB PAGE	https://en.holik-international.cz/
COMPANY DESCRIPTION	Engaged in the production and development of gloves, footwear and medical devices. These fields are built on the combination of traditional and proven processes complemented by modern technologies.

Table 13: Company Pykres

HACKTEX	PROTECH
COMPANY NAME	Pykrs
COUNTRY	Spain
PRODUCTS AVAILABLE	Smart jackets with integrated lights, monitors for fall detection, a Heating system and an SOS alert.
TECHNOLOGY AVAILABLE	Pykrs jacket has integrated sensors for fall detection, GPS position and SOS alert system, has integrated light panels which make the user three times more visible, has a long-lasting battery and is waterproof. All the features of the jacket can be controlled via a smartphone application.
WEB PAGE	https://en.holik-international.cz/
COMPANY DESCRIPTION	Outdoor company focused on developing, manufacturing and marketing sustainable, functional and smart jackets with a technological base

MEDTECH

In this chapter, companies that classify and are active in the MEDTECH fields are presented.

Each table is equipped with pictograms, depicting lines of work where companies are active, the country where the company is located, a description of available products and technologies as well as a website and a brief company description.

Table 14: Company Bioservo

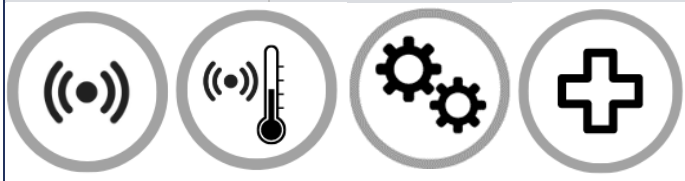
HACKTEX	**MEDTECH**
COMPANY NAME	**Bioservo**
	
COUNTRY	**Sweden**
PRODUCTS AVAILABLE	Sensor and cutting-edge technology integrated in special gloves to offer muscle and strength support to people which muscular sytem is in need of extra help and support.
TECHNOLOGY AVAILABLE	Ironhand is the world's first active soft exoskeleton for the hand. The system consists of a glove, covering all five fingers, and a power pack worn in a backpack or hip-carry, using sensors located on the palm and the fingers. Carbonhand is a revolutionary aid that gives back power to people with impaired hand function. Pressure sensors and advanced technology ensure the glove adds power in cases where the user's muscles are inadequate. Pressure sensors in the fingers sense when the user needs support.
WEB PAGE	https://www.bioservo.com/
COMPANY DESCRIPTION	World-leading company within soft muscle strengthening systems that enhance natural grasp strength and improve quality of life. Solutions provide support to people in need of extra strength, endurance, or reduction of effort.

Table 15: Company Nuada

HACKTEX	MEDTECH
COMPANY NAME	**Nuada**
COUNTRY	**Portugal**
PRODUCTS AVAILABLE	Hand functions support gloves that provide confident grip when hand functions are impaired due to ageing processes, injuries and illness.
TECHNOLOGY AVAILABLE	Innovative hand function support system which uses thin, breathable, flexible and smart textiles to provide a light, non-intrusive, safe and small glove, to be used on an everyday basis. For people with Musculoskeletal disorders, injuries, and work-related repetitive movements that result in health problems.
WEB PAGE	https://nuada.pt/
COMPANY DESCRIPTION	NUADA is empowering the everyday tasks of the weaker hands. Talking about an orchestrated daily care that allows active people, who find themselves less resourceful, to regain autonomy and reconnect with the world around them.

PRINTED ELECTRONICS

In this chapter companies, active in printed electronics are presented.

Each table is equipped with pictograms, depicting lines of work where companies are active, the country where the company is located, a description of available products and technologies as well as a website and a brief company description.

Table 11: Company Innovation Lab

HACKTEX	PRINTED ELECTRONICS
COMPANY NAME	**Innovation Lab GmbH**
COUNTRY	**Germany**
PRODUCTS AVAILABLE	Force-sensitive Matrices, BaMoS - The Innovative Battery Monitoring Solution for Automotive Applications. Power in any shape you can imagine. Services available: Adjustment of the layout and specifications of existing sensor technologies according to requirements, development of novel sensor technologies and sensor systems, design, development and production of hardware and software components. Embedding of sensors into hardware, software and cloud systems, data analysis using machine learning algorithms Prototyping.
TECHNOLOGY AVAILABLE	Printed Organic Electronics, Printed Organic Sensors.
WEB PAGE	https://www.innovationlab.de/en/printed-electronics/about-us/innovationlab/
COMPANY DESCRIPTION	Expert in printed and organic electronics with a focus on flexible printed pressure sensors.

Table 162: Company Elnatas

HACKTEX	PRINTED ELECTRONICS
COMPANY NAME	**Elantas Europe**
COUNTRY	**Germany**
PRODUCTS AVAILABLE	Wire enamels, Impregnating materials, casting and potting materials, flexible electrical insulation materials, Materials for electronic protection, materials for tools and composites, speciality, and industrial coatings, and printed electronic products.
TECHNOLOGY AVAILABLE	Coatings for applications in various market segments like non-stick coating, floor and anti-friction coatings. High-performing range of enamels for the use as magnet wire coatings, chemistries related to impregnation materials, supplies product solutions designed for use with application processes including room temperature hot polymerization, manual or through dosing systems, the printing of electronic parts makes it possible to eliminate electro-mechanical switches and knobs, etc., integrate into 3D surfaces, combine decoration and functionality, and embed LED and backlight.
WEB PAGE	https://www.elantas.com/
COMPANY DESCRIPTION	Leading manufacturer of insulating and protective materials with a focus on the global electrical and electronics industry. Portfolio of wire enamels, impregnating resins and varnishes, casting and potting resins, flexible electrical insulation materials, materials for electronic protection, speciality industrial coatings, products for printed electronics as well as a wide range of tooling and composite materials

Table 17: Company Pel Limited

HACKTEX	PRINTED ELECTRONICS
COMPANY NAME	**Printed Electronics**
COUNTRY	**United Kingdom**
PRODUCTS AVAILABLE	Pel uv cure system for dimatix dmp, El. Controller, wearables – fabric circuits, Fabric LED screen, Printed sensors,
TECHNOLOGY AVAILABLE	Experts in embedding electronics where electronics are not normally expected. medical, antennas, sensors, displays and printed batteries. Integrating elements with paper, plastic film, fabrics, ceramics, metals, and even large 3D physical objects. Supply training, product and process development for companies, universities and research organisations all around the world
WEB PAGE	https://www.printedelectronics.com/
COMPANY DESCRIPTION	Experts in functional printing, material deposition, inkjet, and digital technologies.

Table 18: Company Sensing Tex

HACKTEX	PRINTED ELECTRONICS
COMPANY NAME	**Sensing Tex**
COUNTRY	Spain
PRODUCTS AVAILABLE	Smart sensing mats, sensing wear ans luminous tex, as also supporting ideas,
TECHNOLOGY AVAILABLE	Patented mapping sensors technology to make smart sensing mats. The technology can be applied by using completely standard weaving, printing, lamination and impregnation techniques which maintain the original properties of the material such as the flexibility, elasticity, comfort and the possibility to be washed.
WEB PAGE	https://sensingtex.com/
COMPANY DESCRIPTION	Based on patented technology of Stretchable Circuits, company whose services have a large international presence around the Globe.

Table 19: Company Quad Industries

HACKTEX	PRINTED ELECTRONICS
COMPANY NAME	**Quad Industries**
COUNTRY	**Belgium**
PRODUCTS AVAILABLE	Flexible printed electronics, Electric heating technologies, the Positive Temperature Coefficient flexible heaters, medical monitoring solutions such as medical skin patches, wearable skin patches,
TECHNOLOGY AVAILABLE	Quad Industries is active in many areas, including the automotive sector, industry, home appliances and medical environments. They have expanded their activities in the fields of printed electronics even further, providing sectors with innovative, flexible sensor solutions.
WEB PAGE	https://www.quad-ind.com/contact/
COMPANY DESCRIPTION	Quad Industries has been at the forefront of printed electronics for over 25 years. Making a reliable partner for the development and manufacturing of user interfaces, control panels and flexible sensors for various mark, focusing on R&D, Engineering, prototyping and manufacturing.

List of Europe-based industrial textile application element producers.

In this chapter, EU-based producers of textile elements and components for further use in smart textile manufacturing AND PROTOTYPING are presented.

POLISILK, SPAIN

Produces Biobased and degradable yarns, long-lasting antibacterial polypropylene multifilaments, bicomponent yarns, Polypropylene multifilament yarns with higher temperature resistance etc.
WEB: http://www.polisilk.com/

E. CIMA, SPAIN

Produces technical fabrics, 3D and spacer fabrics, polar textiles, meshes and nets.
WEB: https://ecima.com/en/

GERSTER TECHTEX, GERMANY

Technical textiles such as woven and braided hoses and high-strength tapes, Composite materials such as knitted and weaved multiaxial ribbons, tapes, and Smart Textiles such as light emitting and heating fabrics.
WEB: https://gerster-techtex.com/en/

GENTHERM, GERMANY

Active in three fields: In automotive, it produces automotive seat comfort and seat climate regulation systems, in the medicinal field it produces temperature regulation systems for patients and in the field of electronics it offers assembly and manufacturing solutions for electronic components and optimizations of battery life spams.
WEB: https://gentherm.com/en/locations

EMBRO, GERMANY

Active in fields such as technical embroidery offering flexible heating elements and systems, Functional medical textiles, Textile sensors, Textile Conductive tapes, Fibre reinforced textiles.
WEB: https://embro-tech.com/en/products-services/flexible-electronics/

KUFNER, GERMANY
Active in technical textiles for Automotive, Aviation, Furniture, Garments, Medical, and Flameretardent textiles.

Web: https://kufner.com/

Technology providers for all specified application fields

List of EU based tech provides who offer support in electronical and component materials in the field of smart textiles and smart technology.

COMPANY	COUNTRY	PRODUCTS	TECHNOLOGY	WEBSITE
ITP-GmbH	Germany	• Intelligent textile products • Elastic conductive tape • Heating tapes • Sensor yarns • Cable tapes	• Flexible area light • Elastic Heat Textile speaker	https://itp-gmbh.de/
SATAB	France	• Ribbons • Straps • Braids • Mesh (rigid or elastic)	• Weaving • Braiding Knitting	https://www.satab.com/en/home/
ApplyCon	Czech Republic	• Wearable Electronics and Smart Textiles • Design and Complex Engineering	• Connector Technologies • Cable Assemblies	https://www.applycon.cz/
Fibernamics	Portugal	• Development • Analysis • Validation of models	• Design and implement integrated and customized solutions based on composite and fibrous materials	https://www.fibrenamics.com/en
ComSensus	Slovenia	• develop digitalization solutions for various industries	• Hard-wear developers • Soft-wear developers • Helping businesses	https://www.comsensus.eu/
Vulpes Electronics	Germany	A modularly structured development strand: • System • Product • Component		www.vulpes-electronics.net
V-trion	Austria	• Textile research centre	• V-trion textile research GmbH	https://www.v-trion.com/
Sturiatronic	Austria	• Customers product ideas		https://www.styriatronic.com/en/how-we-work

Knitronix	Italy	• Flexible sensors using smart fabrics.	• Sensors can detect tactile pressure, temperature and the presence of liquids.	https://www.knitronix.com

Conclusions

In conclusion, this comprehensive company database serves as an repository of information on key players including manufacturers, technology providers, and component suppliers in the smart textile fields. By providing easy access to crucial data, such as product offerings,

innovations, and contact details, this database facilitates collaboration, innovation, and strategic partnerships within the dynamic landscape of smart textiles and offers a swift insight to all interested parties. As the industry continues to evolve and expand, this repository stands as a vital tool for stakeholders seeking to navigate and capitalize on emerging opportunities in the field.

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