ETT VINNVÄXTINITIATIV

Smart textiles

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The textile industry in Sweden has undergone enormous changes since the 1970´s, when a significant part of the traditional clothing industry were outsourced from Sweden. After a complete structural overhaul, the branch is now very much alive. Today the textile industry encompasses much more than cloth and clothing; now textiles are used in everything from blankets and airbags to reinforcements in composite materials in airplanes and sound insulated walls. As a result of a continual development, where quality demands increase constantly, the range of materials grows wider and new areas of use are being developed, we make sure we are conducting relevant research, creating new textiles and generating new uses for them.

With Borås at its centre, there is a nationally working and developed cluster around textiles. From here, more than half of Sweden's textile industries and the largest transportation logistics points may be reaches within 45 minutes. There are also entrepreneural trading companies with a long tradition of daring to invest in new technology.

Smart textiles aims at development, design and highly specialized production of the next generation of textile products; smart textiles and textile integrated wearable technology. "Smart textiles" represents a new generation of high technology multi-functional textile materials and products which will interact with their environment in different ways: change colour in relation to light intensity, adapt sound insulation/reflection in relation to sound levels, stimulate the body's cells to build new tissue through implants etc. "Textile integrated wearable technology" are products with modern high technology functions integrated with the textile construction itself; different types of sensory cloth for clinical medicinal use, cloth with advanced textile interfaces for mobile communication of different types. This necessitates a multidisciplinary approach and uses competence from textile technology and textile chemistry to design and management.

Smart Textiles and Wearable Technology are areas undergoing strong development internationally. With an already solid base in development and production of technical textiles and an offensive multidisciplinary experimental textile and design research, we in Borås and West Sweden have a unique possibility to establish an internationally leading industrial cluster within the area, through a focused effort together with the industries, regional and municipal governments, research institutes and universities.

In our vision, we see Borås and West Sweden as a future internationally leading and bustling centre for development, design and specialised production of the next generation of high technology textile products. A leading centre for research, development and production:

- Of smart textiles and textile integrated wearable technology where advanced textile technology, sensor technology, computer technology and different types of advanced material technology meet and are integrated,
- Which lives and grows through close and dynamic interaction between the community, business community and academia,
- Where different cultures within research, development, production, design and education meet, dissolve boundaries and integrate with each other,
- Which dissolve boundaries between traditionally female dominated areas within textile technology and design and traditionally male dominated areas within technology and management.

The total knowledge in the companies together with regional resources within research and the public sector offers large potential to refine and strengthen the area through development and renewal of working methods for an effective innovation system.

The Smart Textiles initiative means incitement for the business community to start R&D departments which otherwise would be at risk of low prioritization because of lack of resources and a lack of growth would follow.

Most of the leading textile companies which today work with technical textiles have a background in the traditional textile industry and from this position they have developed their ideas within advanced textiles to become profitable R&D intensive industries within their specialized areas. For example, one company has switched its production from curtains to climate textiles for greenhouses and presently has an 80% export share. Another company has gone over to technical textiles after shutting down clothing stichery and exports 95% of its production.

The Smart Textiles is a venture to start processes that will create and establish new markets and renew existing ones. A key word in the running work is “network value” where different participants contribute to a high production and customer value. It is also about identifying and supporting participants who can quickly process ideas and concepts into finished products and services and who, in ideal cases, already have available channels through which they can reach the final customers. This means that we even want to develop new business models which can be created with new integrated technology. We will also look more closely at how today’s and future advanced textiles can create new business opportunities in combination with other branches in already existing products and services.

How the initiative means fundamental renewal

Taking the step towards the next generation of high technology textile material and products involves a fundamental renewal within development, design, production and marketing. The initiative also expects a radical shift within education and competence development.

Fundamental changes take place within the development process and the production process when textile techniques, electronics, digital functionality, etc. become integrated; the initiative expects new types of knowledge and breadth of competence in construction and design teams along with production teams. The initiative expects industrial cooperation of a completely new type where for example the textile industry and computer and electronic

industry work in near cooperation around product development and production. Dynamic materials and constructions introduce new manifestations, fundamentally new ways to think textile construction and design. A radical shift in the education of textile engineers and textile designers is taking place to meet the demands for new competence within development and production. Prospective/future developers and designers must also learn to communicate in wide interdisciplinary construction and design teams which requires group based project education across boundaries between e.g. the engineering and designer educations.

The initiative means a fundamental renewal of research and development forms within the framework for an integrated cooperation between companies, academia, institutes and the community in Triple Helix.

The next Nordic Textile Journal to be published in March 2008 will be a spedial edtion on Smart Textiles.