The Vision

The Swedish School of Textiles is to be one of Europe’s leading seats of learning in the textile field. Through a unique interdisciplinary breadth in education and research from design to final product in combination with a solid equipment park in full-scale environments. With everything from handicraft, machines for traditional production, experimental activities to modern testing equipment we will attract, educate, and inspire the most competent national and international students.

Strategic goals

Through education and research at the Swedish School of Textiles, the students will acquire deep and unique knowledge in textile related subject fields in addition to their programme courses, while at the same time they are inspired to do experimental work in order to break boundaries towards other disciplines and actively search new application areas for the textile material.

The Swedish School of Textiles is to be an obvious partner to the related industry, research institutes, other universities/university colleges, and the community when it comes to education, research, and collaboration where a textile competence is crucial to ensure development, diversity, and permanence.

How do we reach these goals?

Our seat of learning will keep up its tradition of continual development of its educations and conduct research in fields that will secure that our students are attractive on the labor market after they graduate. By continually monitoring both international research in the fields and the market development, the Swedish School of Textiles will be able to predict the way the market demand will look when the students graduate with a great deal of accuracy.
There are few traditional ready-made clothing manufacturers and textile manufacturers left in Sweden and the Nordic countries and a concentration towards niches is taking place.

Facing the increasing competition of the global market of today put demands of greater specialization and higher levels of competence on the future employees of the textile industry. At the same time, the demand for knowledge across professional boundaries will increase. The Swedish School of Textiles has a unique breadth both in its programmes, the advanced education, and research through its three profile areas: Design, Technology and Management.

Already, the Swedish School of Textiles maintain good relations with the Swedish textile industry and by expanding these contact surfaces we will secure the help of our students’ future employers in guiding the development of the contents of our educational programmes and research efforts.

Through an intensified collaboration between the Swedish School of Textiles and the industrial research institute IFP Research, Mölndal, we close the gap even further between traditional academic research and industrial applications of the research results. IFP Research has many senior researchers with much experience of research assignments in collaboration with both national and international research partners and partners in the industry. The collaboration between the THS and IFP Research will thus further the professional profile of the Swedish School of Textiles.

The research fields of the two institutions complement each other well and possess both the depth and the breadth required to make them attractive research partners internationally.

“My task will be connecting the applied industrial research of IFP with the fundamental research at a high academic level that is carried out at the Swedish School of Textiles,” Ronald Pedersen says, who will become Head of the Swedish School of Textiles at the University College of Borås by the 1st of July 2006 – a position he holds as he is the Managing director at IFP Research.

Ronald Pedersen emphasizes that his task is to bring more of an industrial research perspective to the University College and also to outline the strategy of the Swedish School of Textiles with a view to the needs of the industry. This entails developing courses in a certain way or motivating the students to specialize in fields that will bring more value to the industrial products. “The education must aim to find areas that will be interesting to the corporations in the future, he continues. That is why the Swedish School of Textiles is to maintain an open dialogue with the industry and make sure there is plenty of feedback”, Ronald Pedersen continues.

Another coordination gain is that IFP and the Swedish School of Textiles will be able to share equipment. IFP Research mainly holds advanced testing equipment while the workshops at the University College have both traditional and advanced production equipment such as looms, knitting machines, and preparation equipment.

An additional task of Ronald Pedersen’s is to support initiatives that create more student trainee posts in the industry. Combining the global networks of the two institutions will increase the odds of the students having more interesting and challenging work opportunities both prior to and after they graduate.

One important task for the Swedish School of Textiles and IFP is to convey, concentrate, and stimulate the research efforts leading up to the presentation of the Vinnova project Smart Textiles in March 2009.

With great confidence the Swedish School of Textiles and IFP Research together outlines a future that will lead to a win-win situation for all parties.

Ronald Pedersen
Head of the Swedish School of Textiles
Managing director, IFP Research
Contents

Pedersen, Ronald
The vision 1

The Textile Research Centre, CTF 5

Bresky, Erik
Smart Textiles 12

Eriksson, Kajsa G
06 The final sound 18

The Swedish School of Textiles
Interaction Design Methods in Fashion Design Teaching 26

Börjesson, Alf
Testing of comfort-related characteristics at IFP Research 52

Ellwanger, Marion
EDUWEAR Children designing tangible and wearable computing for playful educational purposes 62

Carbonaro, Simonetta
The Design of Prosperity research project 74

Mitwally Amer, Mohamed
Contemporary view for upholstery and curtain jacquard fabrics matching with woven hanging design 80

Nelvig, Anna, Engström, Jonas, Hagström, Bengt,
Walkenström, Pernilla
Nanofibers in technical textiles 90

Bodin, Ulla
BODY & SPACE An exhibition in progress 100

Bresky, Erik
E-fashion – ICT-knowledge for Textile and Fashion Education 126

The Nordic Textile Journal 129
The Nordic Textile Journal
University College of Borås, HB
The Swedish School of Textiles, THS
The Textile Research Centre, CTF
SE-501 90 BORÅS
SWEDEN

Tel: +46 33 435 41 64
Fax: +46 33 435 40 09
E-mail CTF@hb.se
URL: http://www.hb.se/ths/ctf

Publisher
Ronald Pedersen

Editor
Ronald Pedersen

Managing editor
Larsh Eriksson

Editorial advisors
Professor Lise Bender Jörgensen
Professor Simonetta Carbonaro
Professor Marion Ellwanger
Professor Ulla E:son Bodin
Professor Lars Hallnäs
Professor Johan Huldt
Tekn. Dr. Kenneth Tingsvik
Professor Staffan Toll

Graphic design
Larsh Eriksson

Publication
ISSN 1404-2487

Prepress and printing house
Etcetera Offset AB, Borås
Aims

The CTF was founded in 1998 and is based at The Swedish School of Textiles at the University College of Borås.
The aims of the Centre are:

To give a research profile to the unique combination of subjects within the School.

To strengthen the research capabilities in the subject areas of the School: crafts, design, textile- and design management and textile technology.

To build up and strengthen research within the School's educational programmes, to attract national and international expertise, thus meeting the requirements of subject-specific professors and postgraduate programmes.

The Objectives of the CTF are:

To bring together all interested parties in crafts, design, textile- and design management and textile technology in order to create a Nordic centre for textile research.

The Centre collects, assemble and process relevant information, to stimulate research and make it available to all professional groups in the field of textiles. Therefore, part of the Centre’s responsibility is to arrange lectures, seminars and conferences, and to report ongoing discussions and results of research in publications and other media.

Areas of Interest and Research:

Design

"The development of innovative design with the help of modern technology giving consideration to environmental, estetic, financial and ethical requirements".

Textile- and Design Management

Design management, fashion logistics, humanistisk marketing, design direction

Crafts

Historic textiles

Textile Technology

Environmental technology, technical textiles, fibre technology
The Research Board at the Swedisch School of Textiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>University</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulla E:son Bodin</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:ulla.bodin@hb.se">ulla.bodin@hb.se</a></td>
</tr>
<tr>
<td>Lise Bender Jörgensen</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:Lise.bender@vm.ntnu.no">Lise.bender@vm.ntnu.no</a></td>
</tr>
<tr>
<td>Simonetta Carbonaro</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:s.carbonaro@realise.de">s.carbonaro@realise.de</a></td>
</tr>
<tr>
<td>Marion Ellwanger</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:Marion.ellwanger@hb.se">Marion.ellwanger@hb.se</a></td>
</tr>
<tr>
<td>Lars Hallnäs</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:Lars.hallnas@hb.se">Lars.hallnas@hb.se</a></td>
</tr>
<tr>
<td>Johan Huldt</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:johan.huldt@hb.se">johan.huldt@hb.se</a></td>
</tr>
<tr>
<td>Heikki Mattila</td>
<td>Professor</td>
<td>University College of Borås</td>
<td><a href="mailto:Heikki.r.mattila@tut.fi">Heikki.r.mattila@tut.fi</a></td>
</tr>
<tr>
<td>Staffan Toll</td>
<td>Professor, Chalmers Institute of Technology, The Swedish School of Textiles</td>
<td>University College of Borås</td>
<td><a href="mailto:toll@polymm.chalmers.se">toll@polymm.chalmers.se</a></td>
</tr>
<tr>
<td>Håkan Torstensson</td>
<td>Professor, Swedish School of Textiles</td>
<td>University College of Borås</td>
<td><a href="mailto:Hakan.torstensson@hb.se">Hakan.torstensson@hb.se</a></td>
</tr>
<tr>
<td>Clemens Thornquist</td>
<td>Ph Dr, The Swedish School of Textiles</td>
<td>University College of Borås</td>
<td><a href="mailto:Clemens.thornquist@hb.se">Clemens.thornquist@hb.se</a></td>
</tr>
</tbody>
</table>
The Research Board at IFP research

Pernilla Walkenström
Associate Professor and research manager at IFP. Finished her PhD in 1996, focusing on “Phase Distribution of Mixed Biopolymer Gels in Relation to Process Conditions”. Has since then worked intensely with biopolymers and gel formation phenomena, followed by fibre spinning processes, in particular electrospinning of nanofibers. Associate professor in 2003.

Anna Thorvaldsson
Researcher at IFP. Finished her Master of Science in biotechnology in spring 2006. The studies focused on biopolymers (DA-work) and molecular biology. Has thereafter worked with electrospinning of nanofibers for biomedical applications.

Anna Nelvig
Researcher at IFP with focus on electrospinning and meltsplinning. Master of Science in Chemical Engineering, the studies focused on polymer and cellulose technology.

Bengt Hagström
PhD in Mechanical Engineering. Expert on polymer processing, polymer melt rheology and melt spinning of fibres.

Anders Bergner
Senior scientist at IFP. Polymer material engineer in 1987, then studied innovation engineering 1989-1992. Has long industrial experience in the field of polymeric materials, composites and textiles from automotive-, defense- and medical technology as Design Engineer, Project Manager, R&D Manager and Technical Manager.

Annika Fredholm
Analytical chemist and Lab technician at IFP. Finished her Master Thesis, spring 1996 in chemistry. Has since then worked with chemical analysis and electrospinning of nanofibres.

Ioannis S. Chronakis

Jonas Engström
Senior scientist at IFP. Finished his PhD in 2006 with a thesis titled “Functional Copolymers of Polyvinylpyrrolidone”. Has since then worked with electrospinning and crosslinking of polymers. Expert on materials science with a specialization in polymer organic chemistry.
Textile Research Council, CTF

The aim of the membership of the Textile Research Council was to create close links within the field of textiles relevant to the work of the CTF. The first board meeting was held on 31 August 1998.

Chairperson:

Erik Bresky
Managing Director, CTF, The Swedish School of Textiles, University College of Borås
Textilhögskolan, Högskolan i Borås
erik.bresky@hb.se

Members:

Lotta Ahlvar
MD, Swedish Fashion Council, Svenska Moderådet
lotta.ahlvar@moderadet.se

Björn Brorström
Prorector, University College of Borås, Högskolan i Borås
bjorn.brorstrom@hb.se

Lars Engman
Chief of design, IKEA of Sweden
legen@memo.ikea.se

Ingrid Giertz-Mårtensson
MD, Swedish Vision AB
igm@swedishvision.se

Anne-Charlotte Hanning
Production Manager, FP Research AB
anne-charlotte.hanning@ifp.se

Johan Huldt
MD, Innovator
info@innovator-design.se

Roger Johansson
Chalmers University of Technology, Chalmers Tekniska Högskola
s.roger.johansson@telia.com

Maria Levin
Creative Director, Nudie Jeans
maria@Nudiejeans.com

Eva Ohlsson
MD, The National Swedish Handicraft Council, Nämnden för Hemslöjdsfrågor
eva.ohlsson@nutek.se
Lisbeth Svengren Holm  Marketing Direktör, Stiftelsen Svensk Industridesign
lisbeth.svengren.holm@svid.se

Ola Toftegaard  MD, Swedish Textile and Clothing Industries Association, TEKO
ola.toftegaard@teko.se

Margareta Van Den Bosch  Chief of design, H&M
bosch@hm.com

Agneta Nordlund-Andersson  Managing Director, CTF
The Swedish School of Textiles, University College of Borås
agneta.nordlund-andersson@hb.se

Larsh Eriksson  Project Manager, CTF,
The Swedish School of Textiles,
University College of Borås
larsh.eriksson@hb.se

Vanessa Hällgren  Student Representative,
The Swedish School of Textiles,
University College of Borås
Textilhögskolan, Högskolan i Borås
s061541@utb.hb.se

Additional Members: