mistra
future
fashion

overview 2015-2019

# research themes

## what & when

1

how to **design** for a circular economy

2

how to promote a more sustainable **supply chain**

how **users** contributes to more sustainable fashion

3

how to increase textile fiber **recycling**

4

# 1 How to Design for Circular Economy?

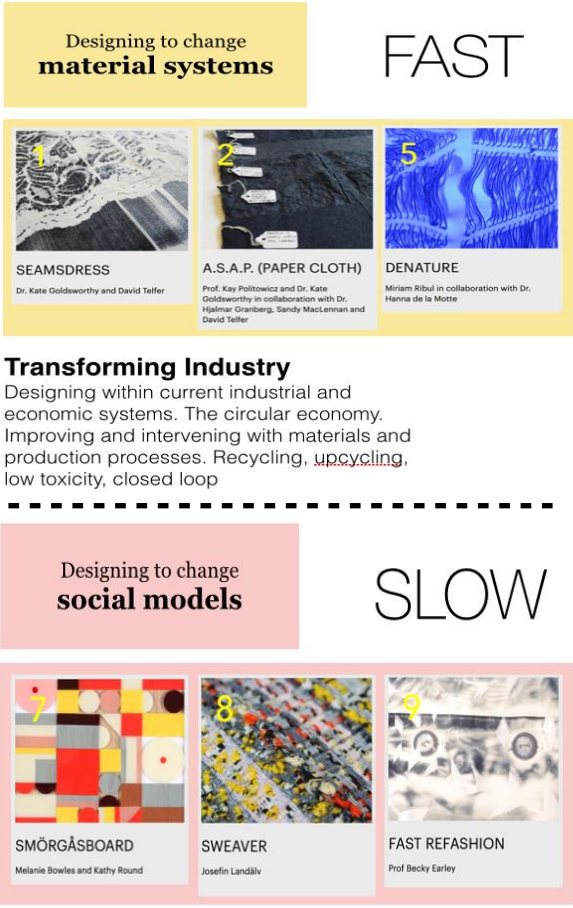
Theme leader: Kate Goldsworthy, UAL; k.goldsworthy@arts.ac.uk

## Designing Fast and Slow Materials, Products, Systems and Guidelines for the Circular Economy

Designing for the Circular Economy requires a proactive and embedded design approach, where **materials are designed with end-of-life recovery in mind at the outset**. Designing to enable fully joined cycles of material use is the ultimate aim, but the **'speed' of the cycle also needs to be considered** in order to make informed and appropriate design choices.

The research will be based around the framework of **'short-life fashion'** and '**long-life fashion**' and consider how we can best design materials and products which work with the current models for fashion consumption, how this can be measured, and then communicated to designers.

By working at these opposing ends of the fashion spectrum we will be able to **clarify the specific material and design challenges** faced by different segments of the industry.




**goal:** guidelines for short-life and long-life design approaches for cyclability,

Illustrated by materials and garment prototypes

## Theme 1: How to Design for Circular Economy?

Theme leader: Kate Goldsworthy; k.goldsworthy@arts.ac.uk

# Objective 1 – Designing for Short-Life & Long-life Garments

### Design & Material Review

Literature & practice review in ultra-fast textiles, recycling processes, business models for short-life garments concepts.

Output:
**Visual landscaping** of current practices on the short/long-life spectrum.

When:
Dec 2016

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk

### Design Concepts & Textile Sampling

New material samples based on insights from the design & material review. Generate new knowledge through material understanding to design scenarios for garment prototypes.

Output 1-3:
**Material samples** with technical records.

**Finishing Concepts & Samples** with technical records.

**Technical insights through scientific testing** of materials.

When:
July 2015 – June 2016 (1)
July 2016 – Dec 2017 (2 & 3)

Leader:
Hjalmar Granberg
hjalmar.granberg@innventia.com

Kate Goldsworthy
k.goldsworthy@arts.ac.uk

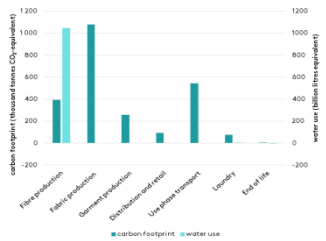
### Short-Life Garment Prototypes

Exploration of design concepts through prototyping and detailed scenarios. This will allow LCA and other analyses to be conducted and guidelines to be drafted.

Output:
**Prototypes** Ultra-fast circular economy.

When:
July 2016 – Dec 2017

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk




### Life-Cycle Assessment

LCA will reveal where gains and losses might be made for each product scenario.

Output:
**Analysis** of garment prototypes x 2 (ultra-fast garments).

When:
July 2016 – Sep 2016,
Oct 2017 – June 2018

Leader:
Greg Peters
petersg@chalmers.se

### Recycling Models

Present key factors that support recyclability of paper based nonwoven textiles as paper or board.

Output:
**Insights** into material samples relevant for recycling.
Report.

When:
July - Sep 2016,
Jan – Mar, Oct - Dec 2017

Leader:
Tatjana Karpenja
tatjana.karpenja@innventia.com

## Theme 1: How to Design for Circular Economy?

Theme leader: Kate Goldsworthy; k.goldsworthy@arts.ac.uk

# Objective 1 – Designing for Short-Life & Long-life Garments

### Design & Material Review

State of the art on long-life design and durability, including business models and materials research.

Output:
**Visual landscaping** of current practices on the short/long-life spectrum.

When:
Dec 2016

Leader:
Rebecka Earley
r.l.earley@chelsea.arts.ac.uk

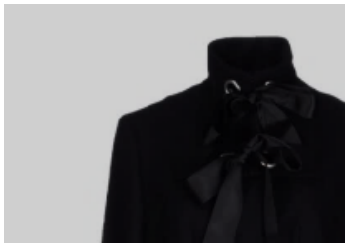
### Design Concepts & Textile Sampling

New material samples based on insights from the design & material review. Generate new knowledge through material understanding to design scenarios for garment prototypes.

Output:
**Product Concepts & Samples** exploring design interventions for extended life.

When:
July 2016 – Dec 2017

Leader:
Rebecka Earley
r.l.earley@chelsea.arts.ac.uk
with Sandra Roos, SwerealVF



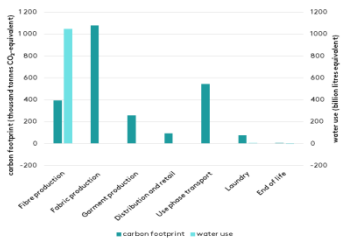
### Long-Life Garment Prototypes

Exploration of design concepts through prototyping and detailed scenarios. This will allow LCA and other analyses to be conducted and guidelines to be drafted.

Output:
**Constructed garment Prototypes**
Slow circular economy prototypes.

When:
July 2016 – Dec 2017

Leader:
Rebecka Earley
r.l.earley@chelsea.arts.ac.uk




### Life-Cycle Assessment

LCA will reveal where gains and losses might be made for each product scenario.

Output:
**Assessment** of garment prototypes x 2 (super-slow garments).

When:
Jan – Mar, July – Sep 2016,
Oct 2017 –June 2018

Leader:
Greg Peters
petersg@chalmers.se


### Business Models

Identification of business barriers and opportunities of circular economy models, within the design scenario of the short/long-life spectrum.

Output:
**Barriers and opportunities** for designing long-time products within business models.

When:
July - Oct 2016,
Oct 2017 – June 2018

Leader:
Esben R G Pedersen
erp.ikl@cbs.dk

## Theme 1: How to Design for Circular Economy?

Theme leader: Kate Goldsworthy; k.goldsworthy@arts.ac.uk

# Objective 2 – Guidelines and Tools

### Circular Transitions Conference

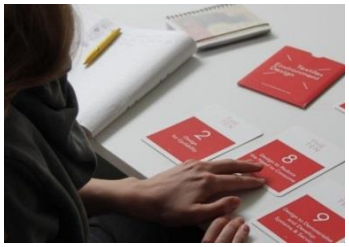
Nov 23-24, 2016

State of the art in Design for the circular economy for fashion. Insights into what circular design strategies and approaches that currently are explored and employed globally.

Output:
**Conference**. Curation and selection of abstracts for the event will help form the themes for guidelines.

When:
April 2016-Dec 2016.
**Nov. 23-24 2016**, Tate Gallery, London

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk



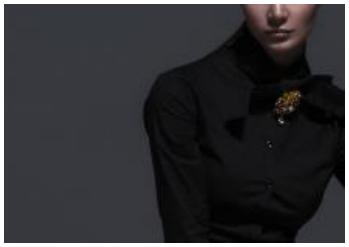
### Guidelines and Design Tools for Circular Design

Producing quantitative and qualitative guidelines for creating a circular fashion industry in Sweden.

Output:
**Guidelines** including revised TED's TEN for Cyclability.

When:
July 2017 – June 2018

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk /
Rebecka Earley
r.l.earley@chelsea.arts.ac.uk



### Exhibition of Circular Design Prototypes

Presentation prototypes, materials and guidelines,

Output:
**Circular Transitions Exhibition**,
web site and catalogue.

When:
Jan 2018 – Dec 2018

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk /
Rebecka Earley
r.l.earley@chelsea.arts.ac.uk

2

## How to promote a more Sustainable Circular Supply Chain?

Theme leader: Sandra Roos, SwerealVF; sandra.roos@swerea.se

Development steps with the largest environmental improvement potential is in focus for the supply chain: **1) more sustainable fibers, 2) less energy intensive yarn and fabric production, 3) more sustainable wet treatment and 4) production of garments with longer life span.**

The Theme will provide **guidance** for how the Swedish fashion industry can radically reduce the carbon emissions, water footprint, and use of harmful chemicals.

The cross-disciplinary approach will be used in order to use all available supply chain related tools in terms of business models, policy tools, consumer communication, and design for sustainable manufacturing, business and technology development.


**goal:** promising strategic options and **recommendations** towards circular supply chain

## Theme 2: How to Promote a more Sustainable Circular Supply Chain?

Theme leader: Sandra Roos; sandra.roos@swerea.se

# Objective 1 – Sustainable Fiber Options

### Potential in Sustainable Textile Fibers

Comprehensive evaluation on new promising sustainable fiber materials including technical and chemical properties.

Output:
**A database, a virtual knowledge platform**. First ever summary of recycled, bio based, paper based, compostable and conventional fibres evaluated on the same parameters; technical (including drying energy form use phase) and sustainability.

When:
July 2015-June 2018

Leader:
Desiré Rex
desire.rex@swerea.se

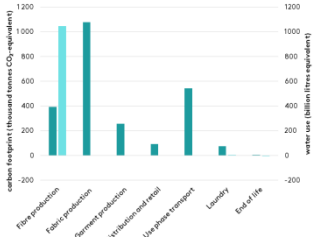
### Samples of new Bio Based Fiber Materials

Product samples that allows people to feel and smell the materials.

Output:
**Demonstrators** of new/upcoming/ promising sustainable fiber materials.

When:
Jan 2017 – Mar 2019

Leader:
Desiré Rex
desire.rex@swerea.se




### LCA on new Sustainable Fiber Alternatives

LCA to enable comparability and knowledge of differences between recycled, bio based, paper based compostable and conventional fibers. The results provide sustainability records for the "database".

Output:
**Assessment** of scenarios for potentially more sustainable fibers.

When:
Apr 2016 – Mar 2018

Leader:
Sandra Roos
sandra.roos@swerea.se

## Theme 2: How to Promote a more Sustainable Circular Supply Chain?

Theme leader: Sandra Roos; sandra.roos@swerea.se

# Objective 2 – Sustainable Textile Production Technology

### Development of Sustainable Textile Technology

Acquire knowledge on the feasibility of technologies for sustainable textile production in terms of scale-up, technical quality of product, life cycle performance etc. Techniques: spindye, plasma pretreatment, increased cutting length of regenerated fibers, digital printing, paper based fabrics etc. Also the potential of increased automation and IT-solutions in general.

Output:
**A technical benchmarking** of the performance of more sustainable dyeing and finishing processes, and assessment to go from wet to dry processes in the textile production chain.

When:
July 2016 – Mar 2019

Leader:
Sandra Roos
sandra.roos@swerea.se

### Samples of Sustainable Fabrics

Demonstrating what is fiber properties and fabric construction properties. Assess yarn spinning techniques, yarn thickness, weave/tricot density, finishing etc as well as chemical structure of the fiber. Technical evaluation includes use phase properties such as drying energy.

Output:
**Demonstrators** of sustainable fabrics, suitable for producing the prototypes in theme 1.

When:
Jan 2017 – Dec 2018

Leader:
Desiré Rex
desire.rex@swerea.se


### Web Tool – a Database of Options and Impact

Create a Green Textile Guide, a "database" that guides on options for sustainable textile technology. To create add-on, e.g. the Swedish quantitative Ted's TEN advices.

Output:
**Web tool.**

When:
July 2016 – Mar 2019

Leader:
Sandra Roos
sandra.roos@swerea.se


### Updated LCA: "Five Garments – Sustainable Futures"

Enables to study the national-level impact-reduction potential of the short-life and long-life garment prototypes (theme 1), new sustainable fibers and production technologies (theme 2) and new recycling technologies (theme 4).

Output:
**Updated LCA report** "Environmental assessment of Swedish fashion consumption. Five garments – sustainable futures". New improved inventory data and impact assessment.

When:
Apr 2018 – Mar 2019

Leader:
Gustav Sandin Albertsson
gustav.sandin@sp.se

### Production Location Impact & Differences

Assess the business model landscape for local production including opportunities and barriers. Focus is on recycling, service for prolonged active life and gains of networking of local manufactures.

Output:
**Insights** into business model innovation for closed loop fashion.

When:
Apr 2016 – Sep 2017

Leader:
Esben R G Pedersen
erp.ikl@cbs.dk

## Theme 2: How to Promote a more Sustainable Circular Supply Chain?

Theme leader: Sandra Roos; sandra.roos@swerea.se

# Objective 3 – Supply Chain Governance

### Business Model Innovations

Study of alternative business models that encourage circular textile flows. Map decision makers and structures, incentives, aspects of innovation and improvements. Include clarity on elements that are crucial for success and acceptance of alternative business models in the value chain from a fashion company's perspective.

Output:
**Report** from SME brands study.

When:
Jan 2017 – Dec 2017

Leader:
Susanne Sweet
susanne.sweet@hhs.se

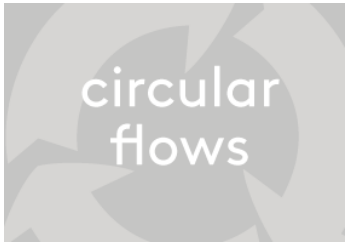
### Politics and Policies in the Textile Life Cycle

Acquire new knowledge on the possibilities for Swedish policy-making to influence the textile production processes that occur outside the Swedish and European legislative area. Partner in international policy incentives or in development of standards for chemicals use can be another.

Output:
**Insights and recommendations.**

When:
Jan 2016 – June 2018

Leader:
Naoko Tojo
naoko.tojo@iiiee.lu.se




### Screening & Developing Circular Textile Flows

Screen voluntary initiatives that involve leading Swedish fashion brands and other actors, who aim creating conditions for prolonging the life of textile fiber and achieving sustainable circular textile flows. Includes waste management strategies.

Output:
**Recommendations** to the Swedish fashion industry on how to engage and work with supply chain commitment for circular textile flows.

When:
July 2017 – Dec 2018

Leader:
Susanne Sweet
susanne.sweet@hhs.se


### Communication Guidelines

Practical guidelines for a sustainable circular supply chain, in collaboration with the User (theme 3) and Recycling (theme 4). The concept of "back-casting" will be used.

Output:
**Guidelines.**

When:
Jan 2018 – Mar 2019

Leader:
Sandra Roos
sandra.roos@swerea.se

### Design for Manufacturing (DfM)

Present and enable understanding of the concept Design for Manufacturing (DfM), from the sustainability perspective in the Swedish fashion industry.

Output:
**Popular report** with compiled experiences and success stories.

When:
Apr 2016 – Mar 2018

Leader:
Hans Lennart Norrblom
hans-lennart.norrblom@swerea.se

3

## Theme 3: How can Users Contribute to a more Sustainable Fashion?

Theme leader: Wencke Gwozdz, CBS; wg.ikl@cbs.dk

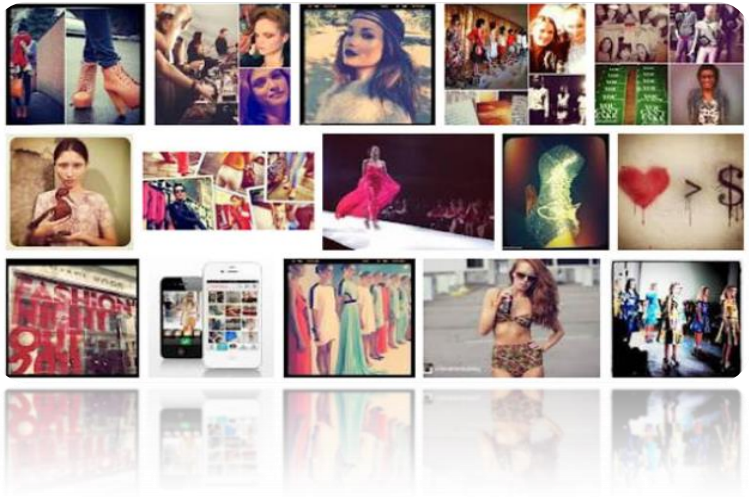
Explore **how to influence sustainable consumption** – ie making more environmentally or socially friendly fashion consumption choices, like buying more sustainable product alternatives or engaging in alternative forms of production and consumption processes.

Three research areas of interest from a consumer point of view:

The **user** perspective: how to make consumers behave more sustainable

The **policy** perspective: helping consumers to identify sustainable choices and showing sustainable behavioral alternatives

The **business** perspective: business models for reuse, upcycling and sharing



**goal: strategies** on how to change consumers awareness, mindset and behavior towards sustainable consumption

## Theme 3: How can Users Contribute to a more Sustainable Fashion?

Theme leader: Wencke Gwozdz; wg.ikl@cbs.dk

# Objective 1 – the USER Perspective: how to make Consumers Behave more Sustainable

### Quality of Life and Sustainable Fashion Consumption

Identify the mechanisms behind the relationship of wellbeing and sustainable fashion consumption and provide policy & business recommendations of how to promote sustainable consumption through wellbeing as a motivational factor. Field surveys in four countries.

Output:
**Report** and publishable manuscript.

When:
Jan 2016 – June 2017

Leader:
Wencke Gwozdz
wg.ikl@cbs.dk

### Cross-Country Comparison of new Business Models among Consumers

Identify potential of new business models (collaborative consumption) from a consumer point of view. Including understanding of geographic differences on new business models.

Output:
**Report.**

When:
Apr 2017 – Dec 2017

Leader:
Wencke Gwozdz
wg.ikl@cbs.dk

### Consumer Perceptions to Fast & Slow Fashion

On comfort performance for new sustainable fibers. Understanding on consumer acceptance and perception in relation to fast and slow materials. Feeds into theme 1 to facilitate material design. Feedback from patients/public users to producers.

Output:
**Report.**

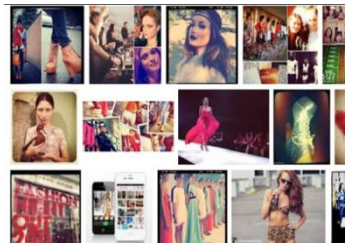
When:
Oct 2016 – Dec 2017

Leader:
Siv Lindberg
siv.lindberg@innventia.com

## Theme 3: How can Users Contribute to a more Sustainable Fashion?

Theme leader: Wencke Gwozdz; wg.ikl@cbs.dk

# Objective 2 – the POLICY Perspective: helping Consumers to identify Sustainable Choices and showing Sustainable Behavioral Alternatives



### Social Marketing Toolbox

Develop and test social marketing toolbox that aim to change consumer mindset and behavior, and stimulate sustainable fashion consumption. Based on insights from consumer quality of life survey.

Output 1 & 2:
**Social Marketing toolbox**

**Test/implementation of the toolbox.**

When:
Jan 2017 – Dec 2018
Oct 2018 – June 2019

Leader:
Wencke Gwozdz
wg.ikl@cbs.dk

### Policies to Promote Consumers Sustainable Consumption

Identify best practices and provide recommendations for policies consumer require consuming more sustainable. Evidence-based consumer policy implications.

Output:
**Report on consumer policy recommendations.**

When:
Jan 2018 – Sep 2018

Leader:
Wencke Gwozdz
wg.ikl@cbs.dk

### Governmental Policies with Impact in Fashion Consumption

Report alternatives for governmental support to make an impact in fashion consumption.

Output:
**Report and Recommendations.**

When:
Apr 2017 – Sep 2018

Leader:
Naoko Tojo
naoko.tojo@iiiee.lu.se

### Policies for Reuse, Collective Use and Prolonged Life of Textiles

Present which policies that have potential for promoting business models and social initiatives that extend textile products active lifetime. List their potential and risks, how they complement/conflict with one another and with existing policy.

Output:
**Report.**

When:
Apr 2016 – Sep 2016

Leader:
David Watson
dw@planmiljoe.dk

### Impact & Recommendation for Policy Measures

Present potential environmental, social and economic benefits and impacts of selected policies which have the potential for promoting business models and social initiatives which extend textile products active lifetimes.

Output:
**Report and Recommendations**

When:
July 2016 – June 2017

Leader:
David Watson
dw@planmiljoe.dk

## Theme 3: How can Users Contribute to a more Sustainable Fashion?

Theme leader: Wencke Gwozdz; wg.ikl@cbs.dk

# Objective 3 – the BUSINESS perspective: business models for Reuse, Upcycling and Sharing

### New Business Models in a Sharing Economy

Analyze user perception of collaborate fashion consumption and services for repair and upgrading. Explore the tensions regarding user engagement in collaborative consumption. Includes reflections on whether and how upcycling can mode from the margins to the mainstream of the fashion industry.

Output 1 & 2:
**Report User Perceptions.**
**Report Attitudes and behaviors** regarding upcycled products.

When:
Apr 2016 – June 2017
July 2017 – June 2018

Leader:
Esben R G Pedersen
erp.ikl@cbs.dk

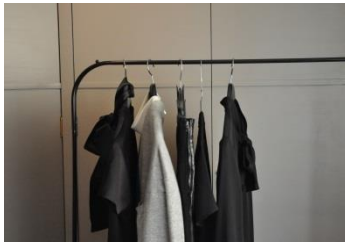
### Barriers & Opportunities in Local Production

Analyze qualities associated with local manufacturing which still remains a niche concept in the fashion industry. Will users consider local manufacturing as being superior/inferior quality, and will they make couplings to non-fashion issues, e.g. local employment?

Output:
**Report on consumer attitudes.**

When:
Apr 2016 – June 2017

Leader:
Esben R G Pedersen
erp.ikl@cbs.dk



### Learnings from Business in Reuse, Collective Use and Prolonged Lifetime

Assess factors of success and failure for initiatives and business models promoting reuse, collective use and prolonged life time of textiles, both in Sweden and elsewhere.

Output:
**Report and Recommendations.**

When:
Jan 2016 – Dec 2016

Leader:
Maria Elander
maria.elander@ivl.se

### Effects of Exported Textiles for Reuse

Highlight, discuss and as far as possible estimate the effects on domestic economies in developing countries due to import of used textiles.

Output:
**Report.**

When:
Jan 2017 – Dec 2017

Leader:
Maria Elander
maria.elander@ivl.se

### Market Dynamics, Structures and Policy Interventions

Analyze instruments, actions and initiatives for making reuse of textiles more mainstream, followed by identification of strategies for increasing demand for and use of textiles for reuse, and recycling among relevant industrial users.

Output:
**Report and Recommendations.**

When:
Jan 2018 – Dec 2018

Leader:
Susanne Sweet
susanne.sweet@hhs.se

4

## Theme 4: How to increase Textile Fiber Recycling?

Theme leader: Hanna de la Motte, SP; hanna.delamotte@sp.se

Explore **post-consumer cotton and polyester;** how cotton and polyester mixtures can be separated and recycled. Includes recycling free of chemicals and affects by dye pigments.

Merge ongoing work on automatic **sorting technologies** to speed up the process for finding effective and economically viable solutions.

**Design of textiles which are better suited for recycling** i.e. by avoiding certain fiber blends will also be a key element of work and will assist in optimizing sorting and subsequent recycling of textile waste.

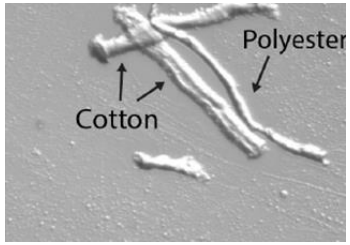
Explore initiatives that **increase collection rates of used textiles**, include mandatory and voluntary Extended Producer Responsibility (EPR) systems. The work will continue the project for the Nordic Council of Ministers and investigate the advantages and disadvantages, and various design options further.

**goal: recommend** promising recycling process for cellulose and polyester blend and **establish** these in textile & fashion industry

## Theme 4: How to increase Textile Fiber Recycling?

Theme leader: Hanna de la Motte; hanna.delamotte@sp.se

# Objective 1 – Recycling of Cotton Blends




### Separation Poly-Cotton and De-polymerization of Polyester

Finalize phase 1 research work on deplymerization of polyester from polyester/cotton blends using phase transfer catalysts. Includes solutions and yields necessary for successful separation of polyester and cotton in a recycling process.

Output:
**Report, popular scientific report.**

When:
Oct 2015 – Dec 2016

Leader:
Anna Palme
anna.palme@chalmers.se

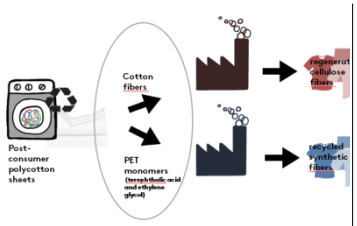

### Cotton Activation, Pre-treatments and Dissolutions

Optimization of the potential recycling process. Find the best pre-treatment and dissolution combination for cotton fibers, for a successful recycling process.

Output:
**Report, popular scientific report.**

When:
Oct 2015 – Dec 2016

Leader:
Anna Palme
anna.palme@chalmers.se




### Process Walkthrough – from Small Scale to Large Pilot with Partner

Develop of a possible process route for poly-cotton separation and regeneration of cotton (spinning to cellulosic fibers), Lab-scale.

Upscale process walkthrough of polycotton regeneration, includes partner involvement and engagement, produce textiles in the factories using our recycled materials. Large scale.

Output:
**Report.**
**Design and material samples.**

When:
Jan 2016 – Mar 2018
Jan 2018 – June 2019

Leader:
Anna Palme
anna.palme@chalmers.se
Hanna de la Motte
hanna.delamotte@sp.se

### Recycling Possibilities for Cotton

Examine cotton properties and how they can be enhanced to facilitate recycling into textiles, or higher value materials.

Output:
**Book of instructions** to Swedish fashion industry.

When:
Apr 2017 – Sep 2018

Leader:
Hanna de la Motte
hanna.delamotte@sp.se

### Dye Aspects - Impact on Fibers, De-dyeing and Environment

Analyze impact of dye on physical properties when regenerated cellulose fibers, and define actions that needs to be taken if dyes are affecting the fibers in the process.

Study de-dying efficiency of different textile waste groups, environmental impacts of introducing a de-dyeing stage in a demo-plant, and compare different de-dyeing treatments.

Output:
**Report.**

When:
Oct 2015 – Sep 2016
Oct 2016 – Dec 2017

Leader:
Helena Wedin
helena.wedin@sp.se

## Theme 4: How to increase Textile Fiber Recycling?

Theme leader: Hanna de la Motte; Hanna.delaMotte@sp.se

# Objective 2 – Polyester Recycling


## Alternative De-polymerization Method Polyester

Explore another possible de-polymerization method, based on sustainable catalysts, for fiber-to-fiber cycling of textiles.

Output:
**Report.**

When:
July 2016 – Mar 2017

Leader:
Zengwei Guo
zengwei.guo@swerea.se

## Theme 4: How to increase Textile Fiber Recycling?

Theme leader: Hanna de la Motte; hanna.delamotte@sp.se

# Objective 3 – Recycling Feasibility


### Two LCAs on Recycling Systems for 1) cotton blends & 2) polyester

LCA on recycling systems for cotton blends, including identification of environmental potential vs conventional end-of-life treatment and identification of criteria for environmental optimization.

LCA on recycling system for polyester.

Output 1 & 2:
**LCA and report Cotton blends.**
**LCA and report Polyester.**

When:
Oct 2015 – Mar 2019
Jan 2016 – Dec 2017

Leader:
Greg Peters
petersg@chalmers.se
Gustav Sandin Albertsson
gustav.sandin@sp.se

### Guidance on How to Design for Recycling

Recommendation on material blends preferable from use and wear perspective, and anchor the results of theme 4 with the broader fashion industry, and the need to establish the possible recycling on larger scale.

Output:
**Report and recommendations.**

When:
Oct 2015 – Sep 2018

Leader:
Sandra Roos
sandra.roos@swerea.se

### New Sorting Technology for Textile Materials

Provide summary of most possible sorting technologies in accordance with the program's process. Understanding of development on automatic sorting technology.

Output:
**Report.**

When:
July 2015 – Dec 2016

Leader:
Finn Englund
finn.englund@sp.se


### EPR Assessment

Develop scenarios for a potential Swedish EPR system for textiles; either as a voluntary collective EPR or as a mandatory EPR system.

Output:
**Reports.**

When:
Oct 2017 – Sep 2018
Jan 2016 – Dec 2017

Leader:
Maria Elander
maria.elander@ivl.se
Naoko Tojo
naoko.tojo@iiiee.lu.se

### Promotors of Fiber-to-Fiber Recycling

Identify critical aspects in design for fiber-to-fiber recycling of textiles; including bottle-necks and their implications for improved design of textiles. Includes suggested areas for policy measures.

Impact assessment of policies that promote Reuse and fiber-to-fiber recycling of textiles.

Output:
**Reports.**

When:
Oct 2015 – Dec 2016
Apr 2016 – Sep 2017

Leader:
Maria Elander
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Naoko Tojo
naoko.tojo@iiiee.lu.se

# Extra projects funded by MFF Strategic Reserve Fund

## Circular Design Speeds

In-factory process with partner for prototype development short & longterm prototypes.

Output 1 & 2:
**Prototypes**
**Value to Others sessions**
**Guidelines** ((task 1.3.2)
**and report of process**

When:
Jan 2017 – June 2019

Leader:
Kate Goldsworthy
k.goldsworthy@arts.ac.uk

## Microplastics in Oceans

Investigate the relation between fabric properties and shedding for polyester fabrics, a pilot study with three partners Boob, Filippa K and H&M.

Output:
**Report and recommendations.**

When:
Oct 2016 – June 2017

Leader:
Sandra Roos
sandra.roos@swerea.se

## Re:Mix

Applicable recycling routes for textile blends containing nylon and elastane.

Output:
**Report.**

When:
Oct 2016 – Dec 2017

Leader:
Åsa Östlund
Asa.ostlund@sp.se

## FITS

The feasibility of automatic feeding to textile sorting.

Output:
**Reports.**

When:
Oct 2017 – Mar 2018

Leader:
Maria Elander
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