



Sustainability in PPE: addressing the  
challenges through standardization  
18th March 2021 - 9:30 to 16:00

## Welcome to the Breakout Session 2B: Choices and recycling of materials!

We will start soon

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Global Regulatory Affairs and Standards Manager,  
DuPont Personal Protection, Chair ISO/TC 94/SC 13



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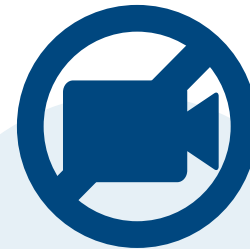
Capability Development Manager, intertek



# House Rules



Keep  
your mic  
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Switch your  
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# 2B: Choices and recycling of materials

**Nawar Kadi** Professor in Textile Technology, The Swedish school of textiles, University of Borås

**Jo Van Landeghem** QSS officer, Circletex

**Karin Lindqvist** M.Sc., Materials, Processes and Recycling, RISE Research Institutes of Sweden



# TEXTILE DESIGN FOR RECYCLING: CHALLENGES AND DIFFICULTIES

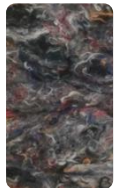
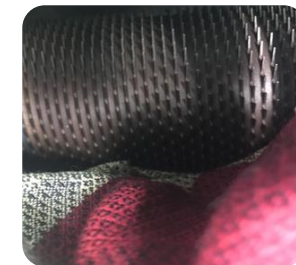
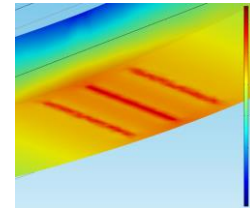
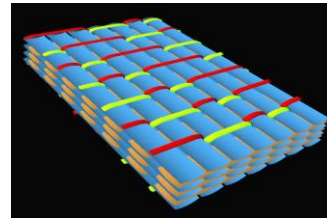
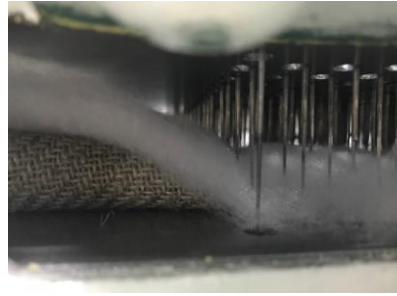
**Nawar Kadi**

Professor in Textile Technology



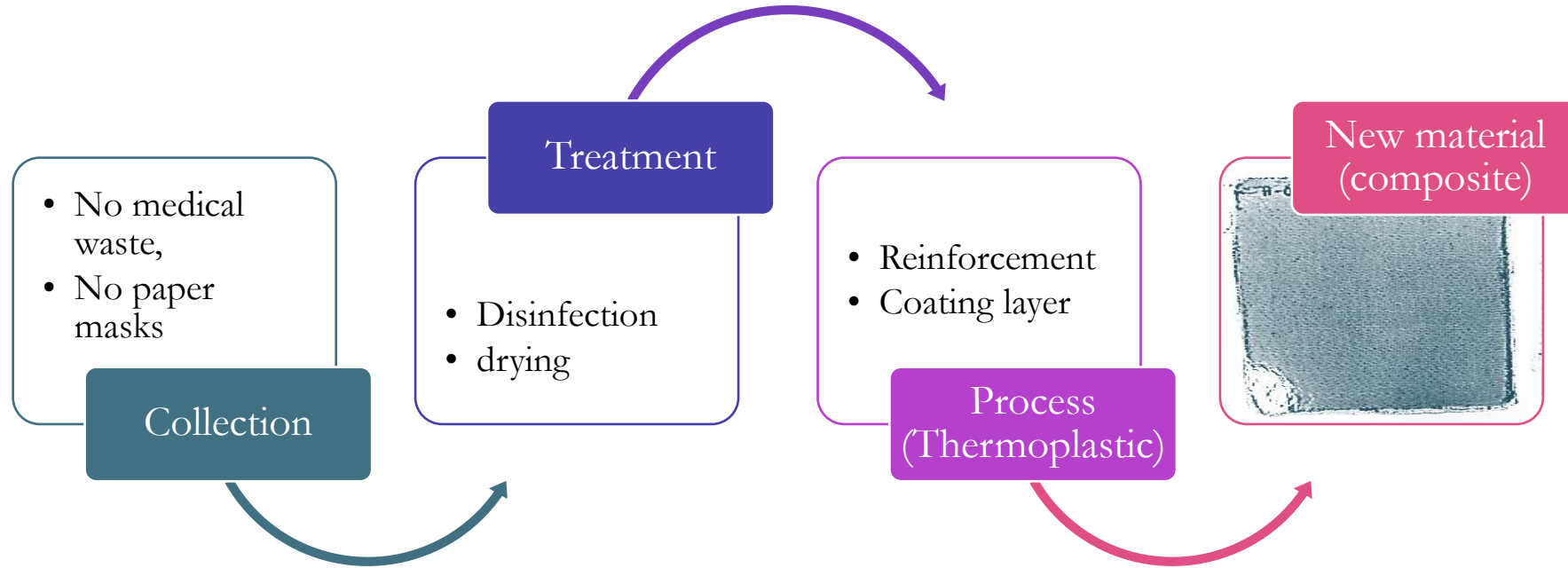
THE SWEDISH SCHOOL  
OF TEXTILES  
UNIVERSITY OF BORÅS

# ADVANCED TEXTILES STRUCTURES



# Single-use personal protective equipment

## Collection



## Design for Circularity

- ✓ One material
- ✓ Bio-degradable material
- ✓ Avoid heavy metals
- ✓ Engineer easy to dismantle
- ✓ Avoid coating with another material
- ✓ Avoid substances that make recycling expensive / problematic



Thanks

Online  
Workshop



## Sustainability in PPE: addressing the challenges through standardization

18th March 2021 - 9:30 to 16:00



Jo Van Landeghem  
Creamoda

## a Belgian collection system for textiles, for the industry by the industry.

All textiles are welcome, such as unsold products, production waste, used and end-of-life products.

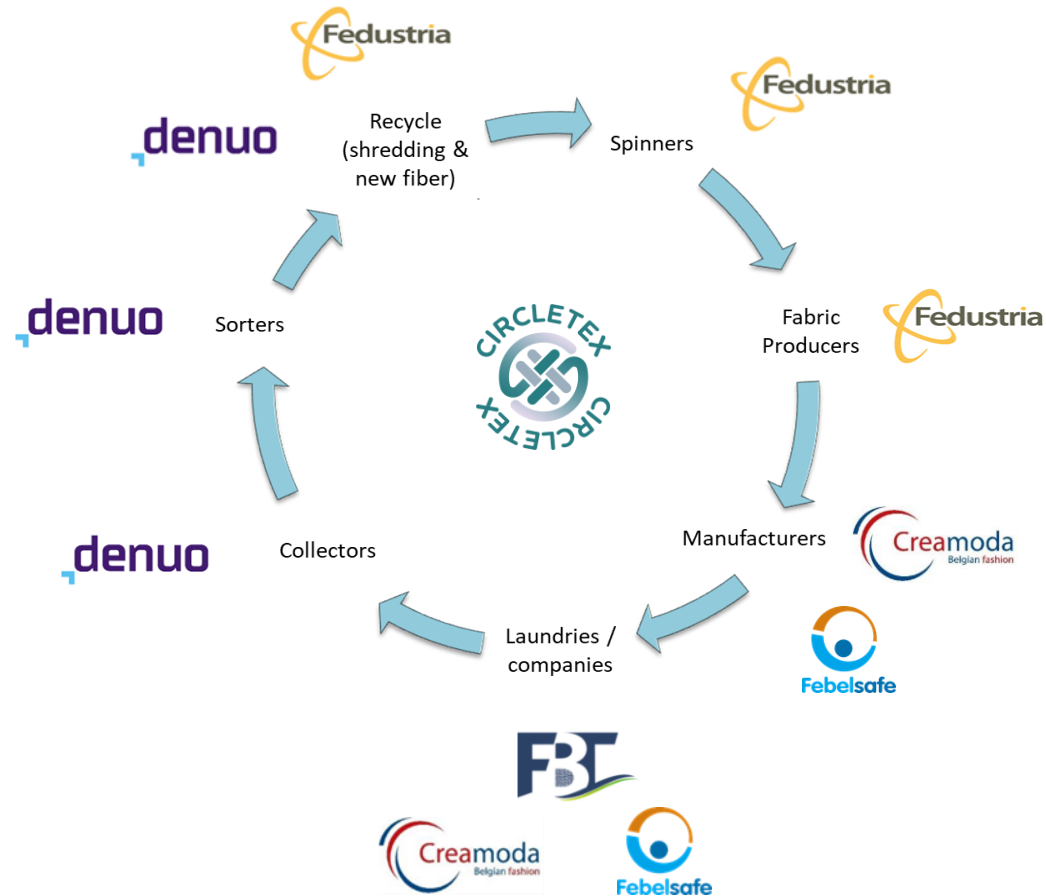
2021 flat linen, workwear and protective products made with textiles  
2023 other products made with textiles

### Founders

- CREAMODA (Federation of the Belgian garment manufacturing industry)
- FBT (Federation of Belgian Textile Care)
- FEBELSAFE (Belgian federation of manufacturers, distributors, service providers and the professional end-user for safety and well-being)

### Supported by

- FLANDERS CIRCULAR, the hub and inspirer for the circular economy in Flanders
- FEDUSTRIA (Federation of the Belgian Textile, Wood and Furniture Producers)
- DENUO (Federation of the Belgian Textile waste and recycling industry)



### **1. What are the challenges?**

- Promoting the system to all stakeholders
- Collecting sufficiently large volumes
- Chemicals, Reach implications, contamination
- Insufficient industrial up-scaling
- Insufficient cooperation & coordination
- Lack of EPR with eco-modulation

### **2. What are the recommendations?**

- EPR and/or take-back obligation is needed
- Eco-modulation rules for UPV
- Support upcycling, life time extension
- Support industrial up-scaling
- Support SME's convert from LE into CE
- Apply GPP with TCO as an award parameter

### **3. What collaborations do you see in the future?**

- Cooperation with authorities, NGO's, universities
- Setting up an integrated system via an online platform linking all EU ReHubs
- Setting up a global system based on the regional ReHubs principle

### **4. What about the future?**

- Circular initiatives by the government like Flanders Circular really show that investing can bring the necessary changes in the industry.
- In the long term, this system provides much-needed new jobs, a self-supporting industry, closer cooperation and accountability on the part of consumers, companies and governments.



# ReHubs

A joint initiative to set up an integrated system based on 5 recycling hubs within Europe, to upcycle textile waste and scale up industrially the collecting, sorting, processing and recycling of pre-consumer & post-consumer materials.

## Founders

- EURATEX (The European Apparel and Textile confederation)
- BELGIUM, FINLAND, GERMANY, ITALY, SPAIN



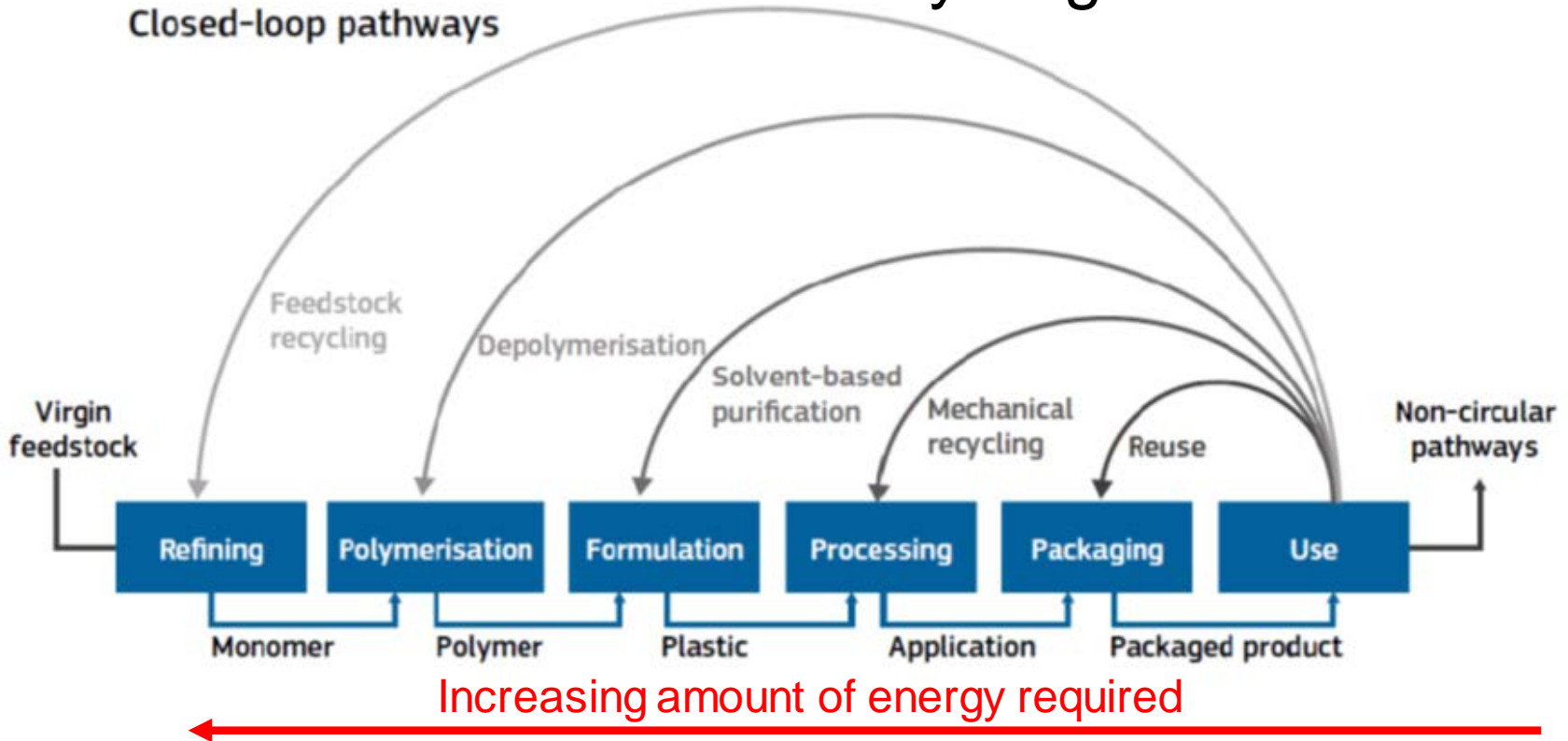


# Recycling of plastics, textiles and nonwoven within PPE:

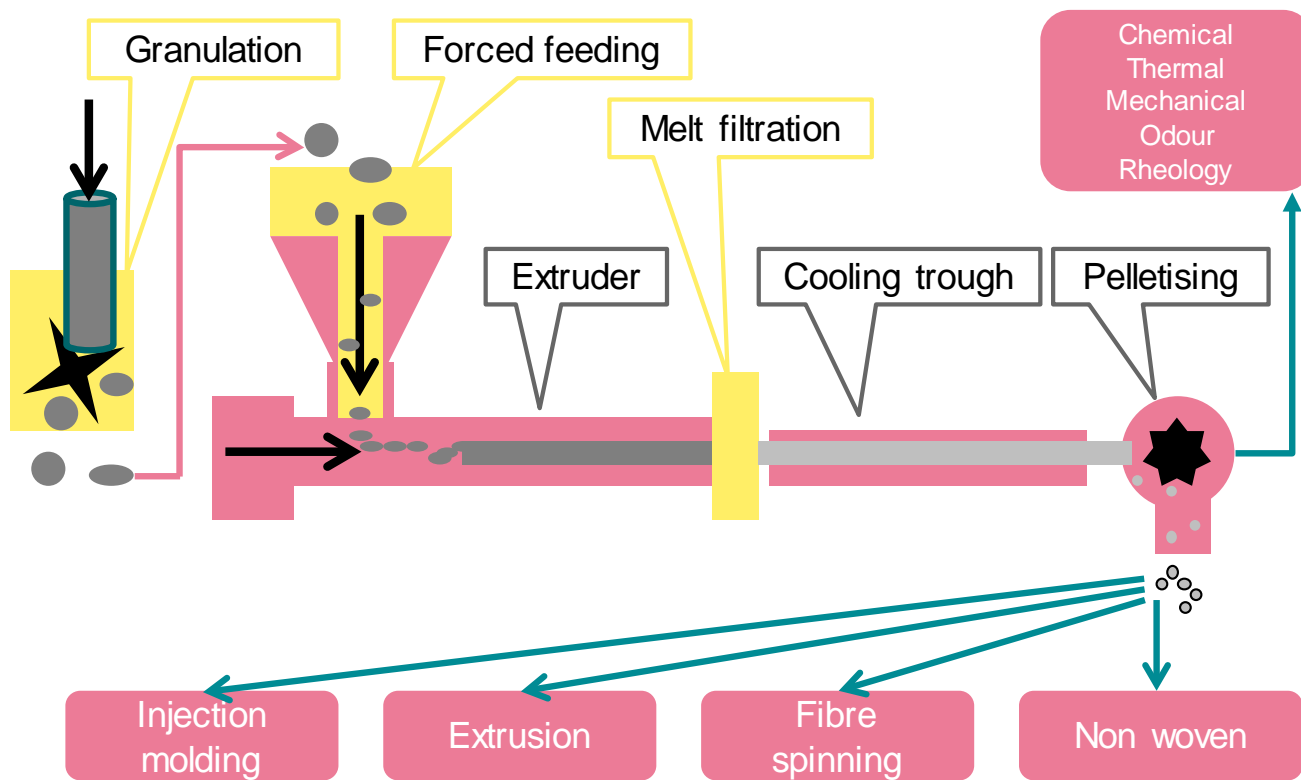
## Possibilities and challenges

*Karin Lindqvist, Researcher  
Polymers and Composites*

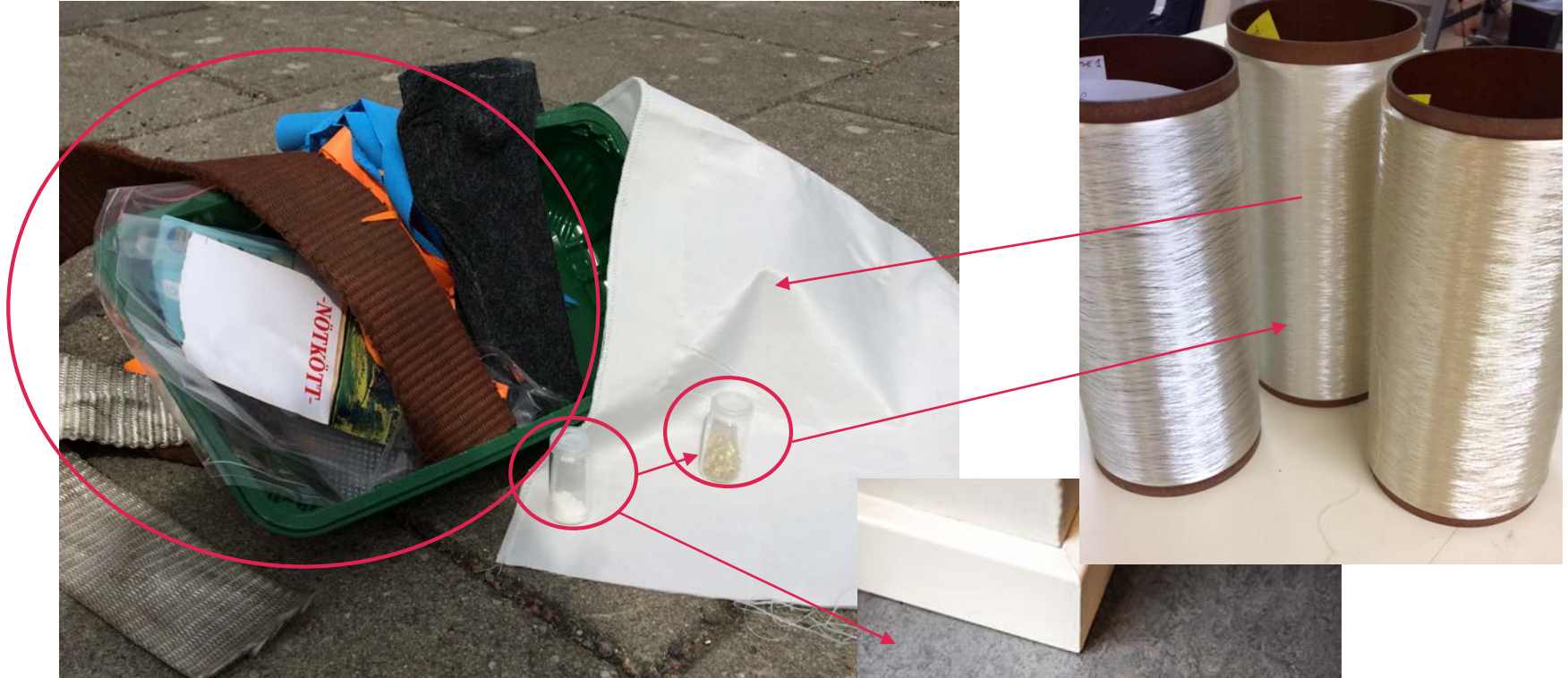
# Plastic recycling







- **Mechanical recycling by re-melting :** *Polypropylene; Polyethylene*
- **Possible products:** plastic packages, Face-masks of PP nonwoven; plastic protective aprons (often PE) etc
- **Challenge:** mixed materials: metal clips; elastane, polyester



**Chemical recycling through depolymerisation:** polyester;  
cotton/polyester  
**Challenge:** dyestuff

# Discussion



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➔ Rank your favourite question! ➔

# What's next?

14:20 - 15:15 2A: Design of garments facilitating repair, maintenance and recycling  
2B: Choices and recycling of materials  
2C: Experiences with different types of PPE

15:15 - 15:30

*Coffee Break*

15:30 - 15:50

**Update on CEN-CENELEC Strategic Advisory Body on Environment (SABE)  
Circular Economy Topic Group**

15:50 - 16:00

**Concluding remarks**



Link to main room will be published in the chat. Make sure to close this one before moving to the next!

**See you there! Thank you!**

