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5s3: Circular Textiles

FULL-CIRCLE RESEARCH FOR BETTER CIRCULARITY

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In March 2021 a report was commissioned by the Danish Government to be developed by all researchers working with sustainability and textiles in Denmark and spanning the entire value chain of textile products. The roadmap to 2030 and 2050, which was submitted in May 2021, includes a number of milestones; including the out-phasing of fossil fashion, dominance of bio-based fibers, and reduction by 60% of production of new textile products, most of which are produced locally. It also includes the introduction of 'Textile citizenships' through education and public campaigns. By 2050 it is the ambition that 80-90% of revenue streams derive from the secondary market, and design strategies have been employed as an active engine for value generation of diverse textile waste fractions.

For this to happen there are severe knowledge-gaps which must be elucidated, prototyped, validated, and tested together with a range of partners such as research environments and design teams, NGOs, municipalities, companies, and policymakers.

Accordingly, a line of inter-connected pilot projects have been initiated in the period of May 2021 to December 2021 at the hub 'Design for Circularity' at the Royal Danish Academy led by Else Skjold. The aim is to dive into the respective areas of the roadmap: 1) materials: in the sub-project 'Biodiversity and Textiles' the coupling of agricultural insights into bio fibers/polymers on the one hand, and certifications and general understandings of 'sustainable materials' on the other is investigated. 2) design and production and 3) systems and services: in the sub-project 'Mapping of Resale' we examine how the resale market works; specifically how textile products such as clothing is generating value when detached from seasonal trends. This is combined with product development for longer use phases together with selected fashion companies through feedback loops based on their resale performance. 4) recovery: in the research project 'Textilsymbiose Herning', we are examining how design can generate value for micro-stream fractions of textile waste through developing a method that can make the resources in the waste visible in order to become an asset for the design and production phase and thus contribute to creating actual circular resource models that reduce the use of virgin fibers.

All projects are continuously interpolated in terms of analysis, design prototyping, and final recommendations. At the Circular@WUR conference we wish to present insights, gaps in research and practice, project contributions, and recommendations.

Keywords: circular design, de-growth, bio-based fibers, circular business models