

RESEARCH THEME

XL cycle – a.y. 2024/2025

Title of the doctoral research

Developing Sustainable Clothing: Implementing Research for Knitwear Industry

Proponent professor

Giovanni Maria Conti

Abstract

The textile industry stands out as one of the most environmentally impactful sectors, with issues arising from fabric production, manufacturing, and dyeing processes contributing to extensive water and energy usage, substantial waste output, and heightened carbon emissions. This research program is dedicated to investigating, delineating, and advocating for the role of design throughout the knitwear supply chain to foster a sustainable apparel system. It aims to devise practical solutions for the knitwear sector that cater to the genuine requirements of communities, businesses, and consumers through an integrated approach encompassing Sustainable Product-Service Systems (S.PSS) and Distributed Economies. Italian textile manufacturers hold a prominent position within this context, often collaborating within the national supply chain to capitalize on Italy's renowned expertise in knitwear manufacturing, yarns, fabrics, garments, and accessories. The primary research goal is to outline a Sustainability Design-Orienting Scenario (SDOS) that can inspire fresh perspectives on Sustainable Fashion and clothing. The secondary objective involves establishing a sophisticated knowledge repository and proficiency in crafting sustainable apparel items. Lastly, the third objective concentrates on integrating sustainability into fiber and knitwear/textile processes as a fundamental element of contemporary design practices, particularly within the textile industry.

Keywords

Knitwear, Textile Process, Fiber, Supply chain, Sustainability