

## **Seam Separation Technology to Facilitate Re-use and Recycling of Textile Products**

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The lack of effective disassembly technologies for clothing acts as a barrier to cost-effective and sustainable recovery of valuable raw materials at the end of life. Wear2™ technology has been developed to enable the seams in garments to be selectively disassembled at the end-of-life with minimal manual intervention. The appearance, durability and performance of garments remain unaffected during use but at the end-of-life auto-disassembly facilitates economic separation of different polymeric and/or metallic components. During garment manufacture a yarn that is highly sensitive to electromagnetic radiation in the microwave frequency range is incorporated into the seams. A short exposure time leads to degradation of the yarn and mechanical failure of the seam enabling the rapid removal of zips, buttons, fastenings, linings, labels, pockets or other "contras" that would otherwise contaminate the recyclate or would compromise the potential for the garment to be reused. The ability to economically recover fibre from disassembled garments of known composition, opens the door for re-use of materials to supplement or replace virgin fibre in new products, realising savings on raw material costs, easing potential supply constraints and reducing environmental impact in a virtuous closed loop system.