

The electrospinning technology: a precious tool to innovate productive cycles, promote the eco-design of products and support the ecological transition

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The Institute on Atmospheric Pollution (IIA) of the National Research Council of Italy, exploiting the potential of electrospinning (ES), is involved in the recovery of agri-food waste destined for disposal for their reintegration into the manufacturing cycle through the creation of eco-compatible products. This low-cost and highly versatile technology allows the development of nano-microfiber materials with significant structural and functional advantages for many applications.

The adoption of circular models, to ensure the transition to sustainable and regenerative ways of production and consumption, cannot aside from the deep ecological innovation of the primary sector and from the growth of the activities linked to the bioeconomy, especially in countries like Italy, characterized by an exceptional value of its natural capital. The valorization of bio-waste coming from agricultural activities, through their reintroduction in the productive cycle by an eco-designed projection, should represent one of the best alternatives to the exploitation of fossil resources, avoiding from huge related environmental impacts, and considering the path to circular economy paved by European Commission.

The flexibility of the ES technology, as its potential in the long term, is amazing, allowing the exploitation of different kind of biowaste for the recovery of bioactive elements to be used within the manufacturing of several products with various applications.