

# Recycling Used Textile Waste to Achieve Biomimicry and Promote Circular Economy

Lakshanya V Kanna<sup>1</sup>, Vanshika Garg<sup>2</sup>

<sup>1</sup> Department of Architecture, School of Planning & Architecture, New Delhi, 110002, India;

lakshanyavkanna@gmail.com

<sup>2</sup> Department of Architecture, School of Planning & Architecture, New Delhi, 110002, India;

gargvanshika2505@gmail.com

## Abstract

The textile business is one of the fastest-growing in the world, with items often only being worn seven times before ending up in landfills; it ranks sixth globally in terms of waste production. Biomimetic has a long relationship with silk, extending back more than two millennia. Numerous synthetic fibres, including as viscose, acrylic, and nylon, have been developed in an effort to imitate natural fibres. This research adopts a multifaceted approach to the circular economy concept, focusing on enhancing textile sorting procedures, devising recycling plans, and prolonging clothing lifespans. With the rise in popularity of the circular economy, more people are beginning to understand the significance of switching from the linear to the circular economic model. To encourage the growth of the circular economic model, several new legislations have been implemented. Many companies have a tendency to recycle their trash and turn it into clothing that is either of poorer quality or may be raised to the same level with the application of chemicals and significant financial expenditure. These days, interior design is another way that the building sector uses waste textiles. Enzyme utilisation is an inherent component of biochemistry's use in the textile sector. Due to the fibrous character of the material, strength and sturdiness are provided via the formation of textile blocks crushed under high pressure by biochemical processes. A circular economy makes the most of a product while producing as little waste as possible. Interviews with several specialists in design, sorting, and recycling are discussed in this study along with the difficulties encountered by the textile industry in making the shift to a circular economy.

**Keywords:** *Design, Biomimetic, Circular Economy, Biochemistry, Textile*