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Biotechnology - Tool for modification of polymers for textile application

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Polymers are present in almost every aspect of our daily life. Textile field is one of the largest industry using fibers derived from both natural and synthetic polymers. In the last decades, the textile industry has endorsed significant growth in new fibers, especially synthetic fibers with improved and special properties, most of them designed for niche products. For this century, the new fibers will be created in association with other industrial fields, being notably influenced by the information technology and advances in nano- and biotechnology. Application of biotechnology to polymer/textile materials envisages emerging areas like improvement and adjustment of properties in fibers and development of new fibers and polymers. The presentation is addressed to the potential of biotechnology to improve and modify properties in polymers, with special reference to biochemical processing of fibers acquired from natural polymers. The benefits of biotechnologies - as convenient alternatives to traditional chemical procedures - are exploited in processing of natural and synthetic polymers. Natural fibers like cotton and wool possess a non-even and nonhomogeneous surface. Their specific function can be ascribed to their complicated morphological structure. Conventionally, raw fibers are subjected to several chemical processes to obtain desired features proper for use. The paper offers an authentic approach in highlighting the interface between biotechnology and polymers (textile fibers) dealing with reaction mechanisms, modified fibers properties and environmental issues.

Biography

Fogorasi Magdalena Simona is working as an Associate Professor at the Aurel Vlaicu University of Arad, Romania with expertise in Textile Chemistry. She has accomplished her PhD in the field of Textile Biotechnology. She has collaborated on several European and National projects on Textile Finishing, particularly on Biotechnology for fibers modification and textile waste valorization. She is a reviewer for several prominent journals and Editorial Board Member. Her research interests are textile biotechnology, enzyme immobilization, textile fibers and polymers, dyestuff and surfactants and environmental protection.

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