



Special Issue Reprint

High Performance Functional Bio-based Polymers for Skin-contact Products

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Beauty masks, diapers, wound dressings, wipes, protective clothes and biomedical products: all these high-value and/or large-volume products must be highly compatible with human skin and they should have specific functional properties, such as anti-microbial, anti-inflammatory and anti-oxidant properties. They are currently partially or totally produced using fossil-based sources, with evident issues linked to their end of life, as their waste generates an increasing environmental concern. On the contrary, biopolymers and active biomolecules from biobased sources could be used to produce new materials that are highly compatible with the skin and also biodegradable. The final products can be obtained by exploiting safe and smart nanotechnologies such as the extrusion of bionanocomposites and electrospinning/electrospray, as well as innovative surface modification and control methodologies. For all these reasons, recently, many researchers, such as those involved in the European POLYBIOSKIN project activities, have been working in the field of biomaterials with anti-microbial, anti-inflammatory and anti-oxidant properties, as well as biobased materials which are renewable and biodegradable. The present book gathered research and review papers dedicated to materials and technologies for high-performance products where the attention paid to health and environmental impact is efficiently integrated, considering both the skin-compatibility of the selected materials and their source/end of life.



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