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The Study of Properties of Partially Dissolved Silk Fibroin Fibers Modified by Rare Earth Chloride

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Abstract

The silk fibroin (SF) fiber and the partially dissolved silk fibroin (PD SF) fiber from the *Bombyx mori* silkworm were treated with a rare earth (RE), lanthanum trichloride ($LaCl_3$) aqueous solution, and the structure and physical properties were investigated to elucidate the effects of the RE treatment. This study aims to find a new approach that can improve the natural shortcomings of silk fibers (e.g., poor shrink resistance) and to modify the silk fiber using a rare earth.

Keywords

rare earth treatment, fiber morphology, partially dissolved silk fibroin, mechanical properties, structure

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