Soil Microenvironment for Bioremediation and Polymer Production

Cellulose nanocrystals-based composites

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Abstract:
Cellulose nanocrystals and cellulose nanocrystals-based composites with their unique features, such as abundance, renewability, high strength and stiffness, eco-friendliness, and relatively low density received unprecedented interest from both academia and industries as replacement of conventional petroleum-based materials, since conventional petroleum-based materials create ecological threats such as global warming and pollution. In this chapter, critical factors in the manufacturing of cellulose nanocrystals-based composites with regard to preparation methods, morphology, barrier and mechanical behaviour are comprehensively discussed. It concludes with the recent developments and future trends of cellulose nanocrystals reinforced biopolymers.