

Preparation of Starch Nanocrystals from various natural sources

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Abstract

The use of starch nanoparticles is receiving a significant amount of attention because of the abundant availability of starch, low cost, renewability, biocompatibility, biodegradability and non-toxicity. Starch nanocrystals obtained by acid hydrolysis of starch can be used as filler in natural and synthetic polymeric matrix and appear to be an interesting reinforcing agent. Biodegradable nanoparticles of starch were prepared by the disruption of amorphous domains from various sources like tapioca, rice, wheat etc. by acid hydrolysis. The structure and morphology of the starch nanocrystals obtained from various sources were compared. The surface morphology as well as the surface chemical characteristics of the prepared nanocrystals were done by techniques like FTIR, SEM, and XRD.