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Abstract

Starch as a natural polymer has attracted significant interest and is currently used in numerous industrial applications. This is because of its renewability, biodegradability, abundance, and cohesive film-forming properties. Moreover, the hydroxyl (-OH) groups associated with the anhydroglucose units provide it with several modification possibilities. These features resulted in a substantial interest for its use in several advanced functional material applications in addition to the typical consumer plastic applications. The goal of this review is to shed light on the recent advances achieved in the utilization of starch for advanced functional material applications and its derivatives. The review specifically focuses on applications ranging from electronics, drug delivery, pharmaceuticals, antimicrobial materials to structural materials.

Keywords: Starch, Modifications, Esterification, Polymer, Biodegradation, Functional materials

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