

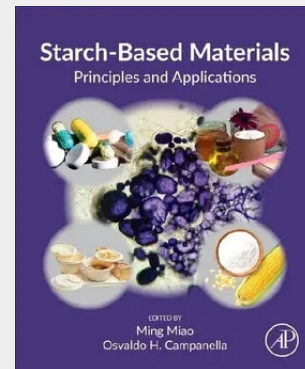
Starch-Based Materials

Principles and Applications

Starch-Based Materials: Principles and Applications explores the cutting-edge research and development of starches as biodegradable, renewable biomaterials addressing urgent environmental concerns associated with non-biodegradable polymers. This comprehensive volume delves into the structural characteristics of starches, recent advances in their physical, chemical, and enzymatic modifications, and emerging technologies that expand their use beyond traditional food applications. It highlights innovative approaches to enhance nutritional value and health benefits, including the design of gluten-free products and specialized foods, while also covering industrial uses such as hydrogels and controlled release systems. Despite extensive prior research on starch packaging and non-food uses, there is a significant gap in current literature regarding modern starch modifications and their multifunctional applications across food, pharmaceutical, medical, and biomaterial fields. This book addresses this gap by providing a timely, authoritative summary of recent scientific findings, aiming to stimulate innovation and sustainable development in starch utilization. It is an essential reference, particularly in courses related to food chemistry, food analysis, nutrition, packaging, pharmaceutical applications, and specialized medical fields such as controlled release technologies.

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