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Nota di contenuto	Chapter 1_Different sources of starch – conventional and non convential sources of starches -- Chapter 2_Structure and morphology of different sources of starches -- Chapter 3_Digestion of starch -- Chapter 4_Glycemic index of starch -- Chapter 5_Food industries -- Chapter 6_Non-food industries -- Chapter 6_Starch aerogels – as a functional ingredient, drug delivery systems, fat replacer, food packaging -- Chapter 7_3D printed starch food for nutraceutical benefits -- Chapter 8_Starch based green flexible electronics -- Chapter 9_Chemical-crosslinking, acid-hydrolysis, oxidation, esterification, etherification -- Chapter 10_Physical -- Chapter 11_Enzymatic- amylases and pullulanase -- Chapter 12_Starch modifications using ‘green‘ solvents- Ionic liquids (ILs) and supercritical Carbon di-oxide (ScCO2) -- Chapter 13_Bright field microscopy -- Chapter 14_Scanning electron microscopy -- Chapter 15_Confocal microscopy -- Chapter 16_Polarization microscopy -- Chapter 17_Second harmonic generation microscopy -- Chapter 18_X-ray diffraction spectroscopy -- Chapter 19_FTIR spectroscopy -- Chapter 20_NMR spectroscopy -- Chapter 21_Raman spectroscopy -- Chapter 22_Rheological studies of starch -- Chapter 23_Viscocity and

pasting properties of starch.

Sommario/riassunto

This book focuses on the various invasive and non-invasive techniques which can be used for the characterization of starch macromolecules along with, the various types of physical, chemical, and enzymatic modifications of starch to enhance its usage in the food industry. It discusses various biophysical techniques, including scanning electron microscopy, Fourier transforms infrared spectroscopy, X-ray diffraction, Raman scattering, and second harmonic generation microscopy for the understanding of the Physico-chemical properties of starch. The book also sheds light on the visual, rheological characterization of different types of starches that are responsible for altered digestibility. The chapters also cover the applications of starch in food industries, non-food industries, pharmaceuticals, drug delivery systems, and green flexible electronics. Towards the end, the book reviews the chemical, physical, and enzymatic modifications of the starch for improving its properties and applications. This book provides a valuable reference for students and researchers in the field of food science and technology, food science, and nutrition.