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Descrizione fisica	1 online resource (357 p.)
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Soggetti	Food science Materials—Analysis Biomedical engineering Biophysics Food Science Characterization and Analytical Technique Biomedical Engineering and Bioengineering Bioanalysis and Bioimaging
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Cereal Grain Structure by Microscopic Analysis -- Localization of Cereal Grain Components by Vibrational Microscopy and Chemometric Analysis -- Imaging of Double Emulsions -- Imaging of Fermented Dairy Products -- Kinetics of bubble growth in bread dough and crust formation -- Non-destructive Imaging of Cellular Solid Foods -- Microstructure of Gluten-free Baked Products -- Molecular Organization and Topography of Prolamin Protein Films -- Assessment of Internal and External Quality of Fruits and Vegetables -- Microstructural imaging of chocolate confectionery -- Physical-bioimaging characterization of nuts.
Sommario/riassunto	Food products are complex in nature which makes their analysis difficult. Different scientific disciplines such as biochemistry, microbiology, and nutrition, together with engineering concepts are involved in their characterization. However, imaging of food materials

and data analysis has gained more importance due to innovations in the food industry, as well as the emergence of food nanotechnology. Image analysis protocols and techniques can be used in food structure analysis and process monitoring. Therefore, food structure imaging is crucial for various sections of the food chain starting from the raw material to the end product. This book provides information on imaging techniques such as electron microscopy, laser microscopy, x-ray tomography, raman and infrared imaging, together with data analysis protocols. It addresses the most recent advances in imaging technologies and data analysis of grains, liquid food systems (i.e. emulsions and gels), semi-solid and solid foams (i.e. bakery products, dough, expanded snacks), protein films, fruits and vegetable confectionery and nuts. This book also: Provides in-depth view of raw material characterization and process control Covers structure-functionality and structure-texture relationships Reviews applications to emerging areas of food science with an insight into future trends.