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Titolo	Food materials science : principles and practice // Jose Miguel Aguilera, Peter J. Lillford, editors
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Collana	Food engineering series
Altri autori (Persone)	AguileraJose Miguel LillfordP
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Fundamentals -- Why Food Materials Science? -- The Composite Structure of Biological Tissue Used for Food -- Food Polymers -- The Crystalline State -- The Glassy State -- Rubber Elasticity and Wheat Gluten Proteins -- State Diagrams of Food Materials -- Nanotechnology in Food Materials Research -- Assembly of Structures in Foods -- Solid Food Foams -- Probing Food Structure -- Structuring Operations -- Structure-Property Relationships in Foods -- Structuring Water by Gelation -- Bubble-Containing Foods -- Emulsions: Principles and Preparation -- Processing of Food Powders -- Fat Crystal Networks -- Extrusion -- Polyphasic Food Systems -- Structuring Dairy Products by Means of Processing and Matrix Design -- Structured Cereal Products -- Structured Meat Products -- Structured Chocolate Products -- Edible Moisture Barriers for Food Product Stabilization -- Encapsulation of Bioactives.
Sommario/riassunto	Food Materials Science provides the science behind structuring processes for foods and applications in food product design. The first in its field, the book is an invaluable reference. The creation of added

value from raw food materials is a legitimate aspiration of the modern food industry. Adding value to foods requires knowledge of what the consumer wants and creating products that satisfy the demand. Quality, convenience and safety are the major drivers of the modern food industry. Food manufacture is about producing billions of units of standardized products which must be cheap, nutritious, safe and appealing to the consumer's taste. Food products are complex multicomponent and structured edible materials that nevertheless must comply with the laws of physics and fundamentals of engineering sciences. In the last 20 years the design of food products with specific functionalities has advanced significantly by the application of scientific knowledge from disciplines such as polymer physics, colloidal and mesoscopic physics, materials science and new imaging and probing techniques borrowed from chemistry, biology and medicine. Our knowledge of the relationship between microstructure, processing, and macroscopic properties continues to increase as the science of food materials advances at a fast pace. This book is intended to those interested in viewing food technology as a way to preserve, transform and create structures in foods and the related materials science aspects of it. It attempts to present a unified vision of what today is considered to be food materials science and some derived applications. The book may be used as a text in a course in food materials science at the senior or graduate level or as a supplement text in an advanced food technology course. It will also serve as a reference book for professionals in the food industry. About the Editors José Miguel Aguilera, is a professor in the Department of Chemical Engineering and Bioprocesses at the Universidad Católica de Chile, Santiago, Chile Peter J. Lillford, is a professor in the Department of Biology at the University of York, Heslington, York, UK.
