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Nota di contenuto	Multiscale modeling of biomaterials and tissues -- The mechanics of individual collagen fibrils: experiments using MEMS platforms, multiscale modeling and theory -- Multiscale simulations of collagen fibril mechanics -- Optical tweezers -- Experiment of human physiology and disease -- Advances in experimental cell biology and cell-material interactions.
Sommario/riassunto	Multiscale mechanics of hierarchical materials plays a crucial role in understanding and engineering biological and bioinspired materials and systems. The mechanical science of hierarchical tissues and cells in biological systems has recently emerged as an exciting area of research and provides enormous opportunities for innovative basic research and technological advancement. Such advances could enable us to provide engineered materials and structure with properties that resemble those of biological systems, in particular the ability to self-assemble, to self-repair, to adapt and evolve, and to provide multiple functions that can be controlled through external cues. This book presents material from leading researchers in the field of mechanical sciences of biological materials and structure, with the aim to introduce methods and applications to a wider range of engineers.