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Titolo	Information Materials : Smart Materials for Adaptive Architecture / / by Manuel Kretzer
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ISBN	3-319-35150-8
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource : illustrations (chiefly color)
Disciplina	620.11
Soggetti	Structural materials Buildings Buildings—Design and construction Building Construction Engineering, Architectural Building materials Technical education Structural Materials Building Types and Functions Building Construction and Design Building Materials Engineering/Technology Education
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Current Global Challenges, the Concept of Adaptive Architecture, and the Possibilities of Information Materials -- The Ever-Changing Nature of Materiality and the Meaning of Materials in Architecture and Construction -- Materiability - An Attempt for the Education of an Information Material Literacy in Respect to Emerging Materials -- A Selection of Emerging Information Materials, their Properties, Fabrication, and Application in Speculative Spatial Installations -- Towards a New Softness.
Sommario/riassunto	This book considers the potential of new, smart materials and their use

in architecture. It begins with an overview of current global tendencies (technological, demographic, and socio-anthropological) and their relevance for architectural design. Expanding upon approaches for flexible design solutions to address change and uncertainty, Dr. Kretzer begins by exploring adaptive architecture and proceeds to introduce the topic of “information materials,” which encompasses smart and functional materials, their current usage, and their potential for the creation of future spaces. The second chapter provides a comprehensive overview of architectural materials, past and present, split into the topics: natural, industrial, synthetic, digital, and information materials. Chapter three introduces an educational approach for the mediation of information material usage in design courses and student workshops. The final section provides detailed information on a range of emerging material phenomena, including aerogels, bioluminescence, bio plastics, dye-sensitized solar cells, electroluminescent displays, electroactive polymers, soft robotics, and thermochromics. Each section explains its respective history, working principles, fabrication and (potential) usage in architecture and design, and provides hands-on tutorials on how to self-produce these materials, and displays class-tested experimental installations. The book concludes with an outlook into the domain of synthetic biology and the prospects of a “living” architecture. It is ideal for students of structural materials engineering, architecture, and urban planning; professionals working these in areas, as well as materials science/engineering and architecture educators. Imparts a comprehensive but concise historical overview of material usage in architecture; Provides an explanation of an educational methodology to mediate new material usage; Describes a detailed scientific display of various emerging materials; Illustrates step-by-step instructions to self-produce a range of smart materials; Features a display of various speculative installations challenging the use of emerging materials in a design context.