Record Nr. UNINA9910820514703321 **Titolo** Functional marine biomaterials: properties and applications / / edited by Se-Kwon Kim Pubbl/distr/stampa Amsterdam:,: Elsevier,, [2015] ©2015 **ISBN** 1-78242-094-0 1-78242-086-X Descrizione fisica 1 online resource (169 p.) Woodhead Publishing series in biomaterials;; number 100 Collana Disciplina 620.115 Soggetti Marine biotechnology Biomedical materials Aquaculture industry Biochemical engineering Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Front Cover; Functional Marine Biomaterials: Properties and Applications; Copyright; Contents; List of contributors; Woodhead Publishing Series in Biomaterials; Part One: Introduction to marine biomaterials: Chapter 1: Discovery and development of marine biomaterials; 1.1. Introduction; 1.2. Marine environment; 1.2.1. Evolution; 1.2.2. Biomimicry; 1.3. Growing biomaterials with living cells; 1.3.1. Embryology; 1.4. Tissue engineering; 1.4.1. Natural skeletons; 1.4.2. Scaffolding development; 1.4.3. Sponge skeletons; 1.5. Learning crystallography from sea urchin 1.5.1. Amorphous hydroxyapatite to crystalline nanoplatelet formation 1.6. Nacre; 1.7. Echinoderm skeletal elements; 1.7.1. Coral skeletons; 1.8. Drug delivery and marine structures; 1.8.1. Foraminifera: template-mediated delivery; 1.9. Marine structures and stem cell regulation; 1.10. Concluding remarks; Acknowledgments; References; Chapter 2: Properties and applications of biosilica enzymatically synthesized by aquatic/marine sponges; 2.1. Introduction; 2.2. Silicatein-based siliceous spicule formation; 2.2.1. Silicatein; 2.3. Spiculogenesis; 2.3.1. Radial growth (Figure 2.3)

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Functional Marine Biomaterials: Properties and Applications provides readers with the latest information on the diverse marine environment as a resource for many new substances, including biopolymers, bioceramics, and biominerals. As recent advances and funding has enabled scientists to begin harnessing many of these materials for biomedical applications from drug delivery to bone tissue engineering and biosensors, this important new text provides readers with a comprehensive review of these materials and their functional applications in the biomedical field. Chapters discuss the proper