

|                         |  |
|-------------------------|--|
| 1. Record Nr.           | UNINA9910450235203321  |
| Titolo                  | Structural biological materials [[electronic resource] ] : design and structure-property relationships / / edited by Manuel Elices   |
| Pubbl/distr/stampa      | Amsterdam ; ; New York, : Pergamon, 2000   |
| ISBN                    | 1-281-04597-7<br>9786611045975<br>0-08-054190-9  |
| Edizione                | [1st ed.]  |
| Descrizione fisica      | 1 online resource (379 p.)   |
| Collana                 | Pergamon materials series ; ; v. 4   |
| Altri autori (Persone)  | ElicesManuel   |
| Disciplina              | 610/.28  |
| Soggetti                | Biomedical materials<br>Electronic books.  |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | Front Cover; Structural Biological Materials: Design and Structure-Property Relationships; Copyright Page; Series Preface; Acknowledgements; List of Contributors; Introduction; Contents; PART 1: GENERAL CONCEPTS; Chapter 1. Structure-Property Relationships in Biological Materials; Chapter 2. Design and Function of Structural Biological Materials; PART 2: HARD TISSUE ENGINEERING; Chapter 3. Structure and Mechanical Properties of Bone; PART 3: SOFT TISSUE ENGINEERING; Chapter 4. Structure-Properties of Soft Tissues. Articular Cartilage<br>Chapter 5. Bioartificial Implants: Design and Tissue Engineering<br>Chapter 6. Mechanical Characterisation of Tendons in Vitro; Chapter 7. Biomimicking Materials with Smart Polymers; PART 4: ENGINEERING WITH FIBERS; Chapter 8. Biological Fibrous Materials; Chapter 9. Computer Model for the Mechanical Properties of Fibers; Chapter 10. Silk Fibers: Origins, Nature and Consequences of Structure; Chapter 11. Modeling of the Stress-Strain Behaviour of Spider Dragline; Glossary; Subject Index |
| Sommario/riassunto      | The ongoing process of bio-evolution has produced materials which are perfectly adapted to fulfil a specific functional role. The natural world provides us with a multitude of examples of materials with   |

durability, strength, mechanisms of programmed self-assembly and biodegradability. The materials industry has sought to observe and appreciate the relationship between structure, properties and function of these biological materials. A multidisciplinary approach, building on recent advances at the forefront of physics, chemistry and molecular biology, has been successful in producin

---