1. Record Nr. UNINA9910786507803321 Autore Pramatarova L. Titolo Modified inorganic surfaces as a model for hydroxyapatite growth / / Lilyana Pramatarova, Emilia Pecheva Pubbl/distr/stampa Uetikon-Zuerich;; Enfield, New Hampshire:,: Trans Tech Publications Ltd, , [2006] ©2006 **ISBN** 3-03813-105-9 Descrizione fisica 1 online resource (132 p.) Materials science foundations, , 1422-3597;; volume 26 Collana Disciplina 541.33 Surface chemistry Soggetti Hydroxyapatite 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. Nota di contenuto Modified Inorganic Surfaces as a Model for Hydroxyapatite Growth; Table of Contents: Preface: Abbreviations: Table of Contents: 1. Introduction to Biomineralization and Biomaterials; 1.1 Biological Mineralization. 1.2. Mechanism of Biomineralization; 1.3. In Vitro Systems for Studying Biomineralization; 1.4. Materials Commonly Used as Biomaterials; 1.5. Review of Methods for the Surface Modification of Biomaterials; 2. Experimental Approach; 2.1. Choice of Materials; 2.2. Crystallization Medium. Hydroxyapatite Growth on Solid Surfaces by Prolonged Soaking in an Aqueous Solution 2.3. Surface Modification of Materials3. Hydroxyapatite Growth on Modified Surfaces by Using the Two Approaches: Results and Discussion; 3.1. Prolonged Soaking in a Supersaturated Calcium Phosphate Aqueous Solution: 3.2. Novel Process for Hydroxyapatite Growth: Simultaneous Laser-Liquid-Solid Interaction; 3.3. Nanostructured Surfaces as a Template for Hydroxyapatite Growth by Applying Prolonged Soaking and Laser-Liquid-Solid Interaction Processes; 3.4. Bioactivation of Porous Silicon by Deposition of Hydroxyapatite Using the Two Approaches

3.5. Influence of Organic Substances on the Process of

References

Biomineralization4. Summary and Conclusions; 5. Acknowledgements;

Sommario/riassunto

The process by which organisms in Nature create minerals is known as biomineralization - a process that involves complex interactions between inorganic ions, crystals and organic molecules; resulting in a controlled nucleation and growth of minerals from aqueous solutions. During the last few decades, biomineralization has been intensively studied, due to its involvement in a wide range of biological events; starting with the formation of bones, teeth, cartilage, shells, coral (so-called physiological mineralization) and encompassing pathological mineralization, i.e. the formation of kidney st