

1. Record Nr.	UNINA9910779512803321
Titolo	Titanium alloys [[electronic resource]] : preparation, properties, and applications // Pedro N. Sanchez, editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2010
ISBN	1-61122-323-7
Descrizione fisica	1 online resource (519 p.)
Collana	Materials science and technologies
Altri autori (Persone)	SanchezPedro N
Disciplina	620.1/89322
Soggetti	Titanium alloys Alloys
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	<p>""TITANIUM ALLOYS: PREPARATION, PROPERTIES AND APPLICATIONS "";</p> <p>""TITANIUM ALLOYS: PREPARATION, PROPERTIES AND APPLICATIONS "";</p> <p>""CONTENTS ""; ""PREFACE ""; ""FUNDAMENTALS OF BIOMEDICAL APPLICATIONS OF LASER INDUCED SURFACE MODIFICATION OF TITANIUM ALLOYS ""; ""Abstract""; ""1.1. Introduction to the Lasers""; ""1.1.1. Nature of Light ""; ""1.1.2. Basic Laser Principles""; ""Einstein Relations""; ""How a Laser Works""; ""1.1.3. Properties of Laser Light ""; ""Monochromaticity""; ""Coherence""; ""Divergence""; ""High Intensity""; ""Brightness""; ""1.2. Laser a€? Matter Interaction ""</p> <p>""1.2.1. The Structure and Properties of Matter""""Molecules: The Basic Components of Matter""; ""Atoms: The Building Blocks of Molecules""; ""Atomic Structure and Quantum Theory""; ""The Nature of the Electron ""; ""Structure of Crystalline Solids""; ""Crystal Unit Cell Structures""; ""Cubic Structures ""; ""Hexagonal Structure""; ""Example""; ""Atomic Bonds ""; ""Example ""; ""Ionic Bond""; ""Covalent Bond ""; ""Metallic Bond""; ""Other Bonds""; ""Van Der Waals Forces ""; ""Retardation Effects in Van Der Waals Forces""; ""Repulsion Forces ""; ""Potential Energy""; ""Intermolecular Forces""</p> <p>""1.2.2. Interaction of Light with Matter""""Interaction Mechanisms""; ""Heat Transport ""; ""1.3. Biomedical Applications of Nd:YAG Laser Surface Modification of Titanium Implants ""; ""1.3.1. Introductory Biological Concepts ""; ""Various Types of Cells""; ""Cellular Processes""; ""Proteins""; ""Tissue Constituents ""; ""Types of Tissues""; ""1.3.2. Cell a</p>

€? Implant Interaction "; "Introduction"; "Protein Adsorption"; "Cell
a€? Adhesion "; "1.3.3. Osteoblasts Adhesion to Orthopaedic
Implants"; "Bone Composition"; "Orthopaedic Implants"; "Bone a€?
Cell Adhesion ""
"1.3.4. Surface Heat Treatment Processes""Material Parameters";
"Laser Parameters "; "Applied Relations"; "Heat Transfer via
Conduction"; "1.3.5. Studies of Pulsed Nd:YAG Laser Surface
Modification of Ti-6Al-4V Alloy for Orthopaedic Applications ";
"Materials and Methods "; "Sample Preparation"; "Experimental
Setup "; "Surface Roughness"; "Surface Hardness"; "Corrosion Tests
"; "Surface Tension"; "In Vitro Test"; "In Vivo Test ";
"Anesthetization"; "Animal Implantation"; "Cell Analysis ";
"Histopathology"; "SEM of Adhered Cells ""
"Statistical Analysis ""Results"; "Characterization of Surface
Topography "; "Optical and Mechanical Effects "; "Emery Effect";
"Surface Roughness"; "Surface Hardness"; "EDX Analysis ";
"Corrosion Test"; "Surface Tension"; "In Vitro "; "In Vivo"; "Cell
Spreading Analysis"; "Histopathology"; "Discussion"; "Conclusion ";
"References "; "NONDESTRUCTIVE EVALUATION OF
MATERIALIMPERFECTIONS IN A TITANIUM ALLOY"; "Abstract"; "1.
Introduction"; "2. Thermoelectric Background Signature Produced
byAnisotropic Materials"; "2.1. Fretting Damage"
"2.2. Analytical Predictions"
