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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"";</p> <p>""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"";</p>

""Proteins""; ""Tissue Constituents ""; ""Types of Tissues""; ""1.3.2. Cell a
€? Implant Interaction ""; ""Introduction""; ""Protein Adsorption""; ""Cell
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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""
