1. Record Nr. UNINA9910452677303321 New nanotechniques [[electronic resource] /] / editors, A. Malik and R.J. **Titolo** Pubbl/distr/stampa Hauppauge, N.Y.,: Nova Science Publishers, c2009 **ISBN** 1-60876-470-2 Descrizione fisica 1 online resource (708 p.) Altri autori (Persone) MalikA. <1964-> RawatR. J. <1962-> Disciplina 620.1/1 Soggetti High temperature plasmas Nanostructured materials Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia ""NEW NANOTECHNIQUES""; ""CONTENTS""; ""PREFACE ""; ""Chapter 1 Nota di contenuto THERMAL PLASMA ASSISTED TECHNIQUES FOR SYNTHESIS OF HIGH TEMPERATURE MATERIAL NANOPARTICLES": ""1. ABSTRACT"": ""2. INTRODUCTION""; ""2.1. The Essential Steps of Thermal Plasma Aided Synthesis of Nanoparticles""; ""2.2. Advantages and Disadvantages of Thermal Plasma Assisted Techniques""; ""3. THERMAL PLASMA ASSISTED NANOTECHNIQUES ""; ""3.1. DC Transferred Arc Aided Systems""; ""3.2. DC Non-Transferred Plasma Torch Systems""; ""3.3. High Frequency Plasmas ""; ""3.4. Hybrid Reactors "" ""4. THE TECHNIQUE OF PLASMA EXPANSION""""4.1. A Segmented Plasma Torch Assisted System for Synthesis of Nanocrystalline Ceramics by Supersonic Expansion of Plasma""; ""5. CONCLUSION""; ""6. ACKNOWLEDGMENT ""; ""7. REFERENCES""; ""Chapter 2 STRUCTURE AND PROPERTIES OF PROTECTIVE COMPOSITE COATINGS AND MODIFIED SURFACES PRIOR AND AFTER PLASMA HIGH ENERGY JETS TREATMENT""; ""ABSTRACT""; ""1. INTRODUCTION""; ""2. MATERIAL PROCESSING BY THERMAL PLASMAS ""; ""2.2. Production of Pulsed Plasma Jets ""; ""2.3. Description of the Method of High-Energy Plasma

""3. MODIFICATION OF THE PROPERTIES OF METALS, ALLOYS, AND SURFACE LAYER HARDENING USING A PULSED PLASMA JET""""3.1.

Jet Production""

Doping and Mass Transfer due to the Action of a Pulsed High-Speed Jet""; ""3.2. Face-Hardening and Modification of Titanium Alloys Employing Pulsed Plasma Technologies""; ""3.3. Deposition of Metal Coatings on Substrates""; ""3.3.1 Coatings of SS 316 L Stainless Steel on a Low-Carbon Steel Substrate"; ""3.3.2. Investigation of the Structure and Properties of Ni-Based Hastelloy C Coatings""; ""4. CERAMIC AND CERAMIC-METAL COATINGS DEPOSITED ON A METAL SUBSTRATE"" ""4.1. Phase and Elemental Composition of Aluminum Oxide and Its Properties"""4.2. Properties and Structure of Protecting Coatings Hard WC-Co Alloy Base""; ""4.3. Structure and Morphology of the Coating of the Hard Cr3C2-Ni Alloy""; ""4.4. Structure and Properties of the Powder Coating of Aluminum Alloys (Al-Co, Al-Ni) ""; ""5. CHARACTERISTICS OF THE STRUCTURE AND PHYSICO-MECHANICAL PROPERTIES OF HYBRID AND COMBINED COATINGS "": ""5.1. TiN/Cr/Al2O3 and TiN/Al2O3 Hybrid Coatings Structure Features and Properties Resulting from Combined Treatment "" ""5.2. Physico-Mechanical Properties and Structure of Nickel-Alloy Coatings Prior to and after Electron-Beam Irradiation """5.3 Investigation of Mass-Transfer and Implantation Processes Occurring in the Substrate Surface and the Coating Itself under Deposition of Coatings and Powders "": ""5.4. Studies of the Structure-Phase Transformations and Servicing Properties of the Coatings, which Were Deposited Using the High-Velocity Plasma Jet ""; ""5.5. Studies of Structure and Properties of Coatings on Co-Cr Base after Duplex Treatment ""

""6. PULSED PLASMA INTERACTION WITH A METAL SURFACE ""