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| 1. Record Nr. | UNINA9910139485203321 |
| Autore | Takadoum Jamal |
| Titolo | Materials and surface engineering in tribology [[electronic resource] /] / Jamal Takadoum ; translated from the French by Veronique Beguin |
| Pubbl/distr/stampa | London, : ISTE Hoboken, NJ, : John Wiley & Sons, 2008 |
| ISBN | 1-282-16532-1 9786612165320 0-470-61152-9 0-470-39417-X |
| Descrizione fisica | 1 online resource (242 p.) |
| Collana | ISTE ; ; v.69 |
| Altri autori (Persone) | TakadoumJamal |
| Disciplina | 621.8/9 621.89 |
| Soggetti | Tribology Surfaces (Technology) Mechanical wear |
| 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 | Materials and Surface Engineering in Tribology; Table of Contents; Foreword; Preface; Chapter 1. Surfaces; 1.1. Introduction; 1.2. The surface state; 1.2.1. Structural state of a surface; 1.2.2. Topographic state of a surface; 1.2.2.1. Atomic-scale topographic state; 1.2.2.2. Micrometer-scale topographic state; 1.2.2.3. Experimental techniques; 1.2.3. Surface energy; 1.2.3.1 Surface energy measurements; 1.2.4. Mechanical state of a surface; 1.2.4.1. Hardness; 1.2.4.2. Young's modulus; 1.2.4.3. Nano-indentation; 1.2.4.4. Fracture toughness; 1.2.4.5. Residual stresses 1.2.5. Chemical composition of a surface 1.2.5.1. Energy dispersive X-ray analysis; 1.2.5.2. X-ray photoelectron spectroscopy; 1.2.5.3. Auger electron spectroscopy; 1.2.5.4. Glow discharge optical emission spectroscopy; 1.2.5.5. Rutherford backscattering spectroscopy; 1.2.5.6. Secondary ion mass spectroscopy; 1.2.5.7. Infrared spectrometry; Chapter 2. Tribology; 2.1. Introduction; 2.2. Elements of solid mechanics; 2.2.1. The stress vector; 2.2.2. The stress tensor; 2.2.3. |

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Sommario/riassunto

This title is designed to provide a clear and comprehensive overview of tribology. The book introduces the notion of a surface in tribology where a solid surface is described from topographical, structural, mechanical, and energetic perspectives. It also describes the principal techniques used to characterize and analyze surfaces. The title then discusses what may be called the fundamentals of tribology by introducing and describing the concepts of adhesion, friction, wear, and lubrication. The book focuses on the materials used in tribology, introducing the major classes of materials used, ei
