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 2.3.1. Hertz contact theory 2.3.2. The contact area; 2.3.3. Plastification of asperities; 2.3.4. Adhesive contact; 2.4. Friction; 2.4.1. The coefficient of friction; 2.4.2. Tribometers; 2.4.3. Laws and theories of friction; 2.5. Nanotribology; 2.5.1. Surface forces; 2.5.1.1. Electrostatic forces; 2.5.1.2. Capillary forces; 2.5.1.3. Van der Waals forces; 2.5.2. Surface forces measurements; 2.5.2.1. The surface forces apparatus (SFA); 2.5.2.2. The atomic force microscope (AFM); 2.5.2.3. Application: surface forces and micromanipulation; 2.5.3. Nanofriction; 2.6. Wear 2.6.1. The different forms of wear 2.6.1.1. Adhesive wear; 2.6.1.2. Abrasive wear; 2.6.1.3. Fatigue wear; 2.6.1.4. Tribochemical wear; 2.6.2. Wear maps; 2.6.3. Interface tribology: third body concept; 2.6.4. The PV product; 2.7. Lubrication; 2.7.1. Oils; 2.7.1.1. The notion of viscosity; 2.7.1.2. The viscosity index and the SAE standard; 2.7.1.3. The Stribeck curve; 2.7.1.4. The different types of oils; 2.7.1.5. Greases; 2.7.1.6. Anti-friction materials; 2.8. Wear-corrosion: tribocorrosion and erosion-corrosion; 2.8.1. Tribocorrosion; 2.8.2. Erosion-corrosion
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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
