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| Autore | Pelleg Joshua |
| Titolo | The Influence of Environment on Mechanical Characteristics of Key Semiconductor Components / / by Joshua Pelleg |
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| ISBN | 3-031-34530-4 |
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| Descrizione fisica | 1 online resource (228 pages) |
| Disciplina | 621.38152 |
| Soggetti | Semiconductors<br>Materials<br>Materials - Fatigue<br>Materials for Devices<br>Materials Engineering<br>Materials Fatigue |
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| Nota di contenuto | The Environmental Challenge in Semiconductor production -- Elastic Properties -- Plastic deformation -- Hardness and tensile properties. The Effect of Environment -- Strength - The Effect of Environment -- Brittle Behavior the Effect of Environment -- Creep –Time dependent deformation. Effect of Environment -- Fatigue-Cyclic deformation. Effect of Environment -- Fracture - Effect of Environment -- Twinning - Effect of Environment -- Fracture toughness - Effect of Environment -- Deformation in Nanostructure - Effect of Environmen. |
| Sommario/riassunto | This book provides a comprehensive overview of the impact of environmental constituents on the mechanical properties of semiconductors. Chapter 1 sets the stage by outlining the various environmental constituents that can have deleterious effects on both the mechanical properties of materials and the health of those who handle them. This includes gases such as oxygen, nitrogen, hydrogen, air, and moisture in the air, some of which are responsible for greenhouse gas emissions that directly affect the climate. Chapters 2 through 12 delve into specific aspects of mechanical behavior, including elastic properties, plastic deformation, defects, hardness, |

brittle behavior, impact testing, deformation processes, and time-dependent deformation. The book also examines how the behavior of semiconductors differs at the nano scale and provides insights into improving their mechanical properties. This book is a valuable resource for researchers, engineers, and students inthe fields of materials science and engineering, semiconductor technology, and nanotechnology. It highlights the urgent need to assess the global environmental impacts of these materials and suggests alternate uses for their production in order to preserve life on earth.