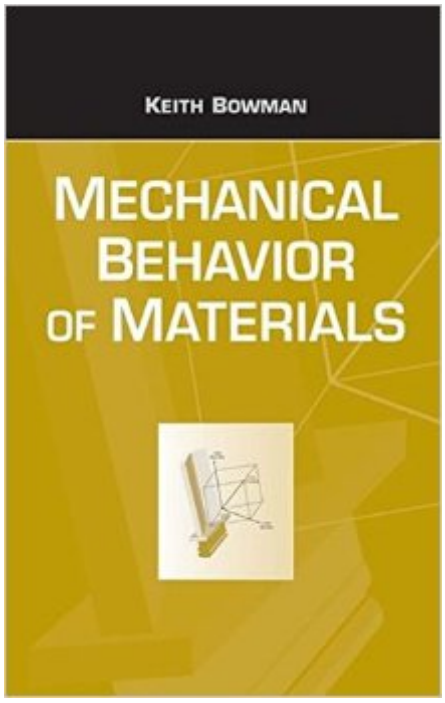
Introduction To Mechanical Behavior Of Materials



Synopsis

An understanding of mechanisms for mechanical behavior is essential to applications of new materials and new designs using established materials. Focusing on the similarities and differences in mechanical response within and between the material classes, this book provides a balanced approach between practical engineering applications and the science behind mechanical behavior of materials. Covering the three main material classes: metals, ceramics and polymers, topics covered include stress, strain, tensors, elasticity, dislocations, strengthening mechanisms, high temperature deformation, fracture, fatigue, wear and deformation processing. Designed to provide a bridge between introductory coverage of materials science and strength of materials books and specialized treatments on elasticity, deformation and mechanical processing, this title: Successfully employs the principles of physics and mathematics to the materials science topics covered. Provides short biographical or historical background on key contributors to the field of materials science. Includes over one hundred new figures and mechanical test data that illustrate the subjects covered. Features numerous examples and more than 150 homework problems, with problems pitched at three levels.

Book Information

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