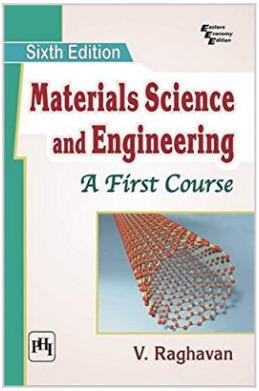

Materials Science and Engineering: A First Course

By V. Raghavan

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Now in its sixth edition, this text provides a thorough analysis of the subject in an easy-to-read style. It systematically and logically analyses the basic concepts and their applications to enable easy comprehension of the subject for students. The book begins by examining the background topics in chemical equilibrium, kinetics, atomic structure and chemical bonding. Then follows a detailed discussion of the structure of solids, crystal imperfections, phase diagrams, solid-state diffusion and phase transformations. This provides insight into the structural control necessary for optimizing the various properties of materials. The mechanical properties covered include elastic, anelastic and viscoelastic behaviour, plastic deformation, creep, and fracture phenomena. The next four chapters are devoted to a detailed description of electrical conduction, superconductivity, semiconductors, and magnetic and dielectric properties. The final chapter on Nanomaterials describes state-of-art developments in this new field. This student-friendly text provides thorough analysis of all relevant topics through the use of diagrams, illustrative tables, and worked-out examples. It is primarily intended for undergraduate students of all branches of engineering, and postgraduate students of physics, chemistry and materials science.

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Editorial Review

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