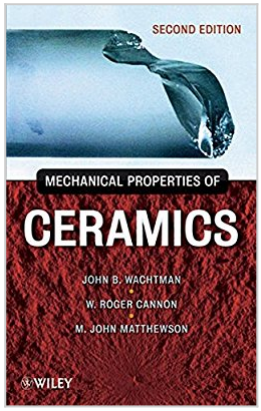

Mechanical Properties of Ceramics

By John B. Wachtman, W. Roger Cannon, M. John Matthewson

Mechanical Properties of Ceramics By John B. Wachtman, W. Roger Cannon, M. John Matthewson

A Comprehensive and Self-Contained Treatment of the Theory and Practical Applications of Ceramic Materials

When failure occurs in ceramic materials, it is often catastrophic, instantaneous, and total. Now in its *Second Edition*, this important book arms readers with a thorough and accurate understanding of the causes of these failures and how to design ceramics for failure avoidance. It systematically covers:

- Stress and strain
- Types of mechanical behavior
- Strength of defect-free solids
- Linear elastic fracture mechanics
- Measurements of elasticity, strength, and fracture toughness
- Subcritical crack propagation
- Toughening mechanisms in ceramics
- Effects of microstructure on toughness and strength
- Cyclic fatigue of ceramics
- Thermal stress and thermal shock in ceramics
- Fractography
- Dislocation and plastic deformation in ceramics
- Creep and superplasticity of ceramics
- Creep rupture at high temperatures and safe life design
- Hardness and wear
- And more

While maintaining the first edition's reputation for being an indispensable professional resource, this new edition has been updated with sketches, explanations, figures, tables, summaries, and problem sets to make it more student-friendly as a textbook in undergraduate and graduate courses on the mechanical properties of ceramics.

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Editorial Review

From the Inside Flap

The Mechanical Properties of Ceramics

Second Edition

A comprehensive and self-contained treatment of the theory and practical applications of ceramic materials

From the Back Cover
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John B. Wachtman, PHD, was Sosman Professor of Ceramics at Rutgers University in New Jersey. Since he received his degree from the University of Maryland in 1961, he has worked as a research scientist, division chief, and director of the Center for Materials Research at the National Bureau of Standards. Dr. Wachtman is the author of several books and holds many awards, honors, and offices in various scientific societies.

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