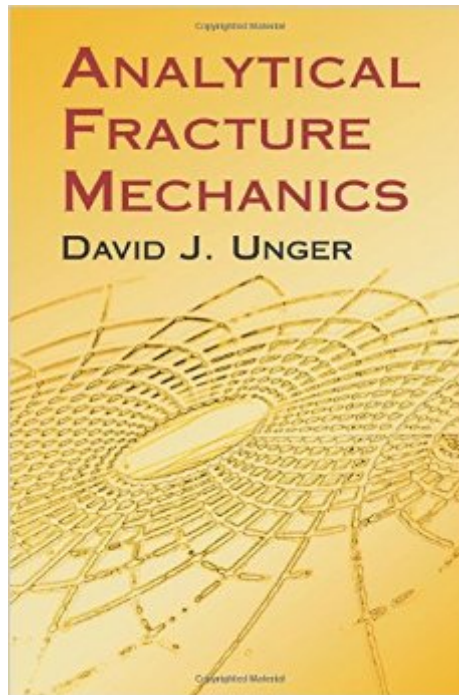


The book was found

Analytical Fracture Mechanics (Dover Civil And Mechanical Engineering)



Synopsis

"Analytical Fracture Mechanics should prove to be a valuable resource to both the new student and the experienced researcher in fracture mechanics. It is recommended." — Applied Mechanics Review

One of the central concerns of engineering is the failure of materials. Addressing this concern, fracture mechanics — an interdisciplinary subject spanning mechanical, civil, and materials engineering, applied mathematics, and physics — predicts the conditions under which such failure will occur due to crack growth. This valuable self-contained text by an expert in the field supplements standard fracture mechanics texts by focusing on analytical methods for determining crack-tip stress and strain fields. Following a comprehensive 120-page introduction — which provides all the background necessary for understanding the remaining chapters — the book is organized around a series of elastoplastic and hydrogen-assisted crack-tip problems and their solutions. The first chapter presents the only proven solution technique for the second order nonlinear partial differential equation governing a mode I elastoplastic crack problem. Other chapters deal with plastic zone transitions, environmental cracking, and small-scale yielding versus exact linear elastic solutions. One of the excellent features of this book is the clarity with which groups of problems are presented and related to each other. Another is the careful attention it gives to the various modes of fracture (I, II, and III) and to showing the circumstances under which information from a solution for one mode may be used to infer information in another mode. For this edition, the author has added a new appendix, "Stress Across an Elastoplastic Boundary of a Mode I Crack: Parabolic to Hyperbolic Plasticity Transition."

Book Information

Series: Dover Civil and Mechanical Engineering

Paperback: 336 pages

Publisher: Dover Publications (November 10, 2011)

Language: English

ISBN-10: 0486417379

ISBN-13: 978-0486417370

Product Dimensions: 0.8 x 6 x 9 inches

Shipping Weight: 1.2 pounds

Average Customer Review: Be the first to review this item

Best Sellers Rank: #2,286,708 in Books (See Top 100 in Books) #74 in Books > Engineering & Transportation > Engineering > Materials & Material Science > Fracture Mechanics #8699

inÂ Books > Engineering & Transportation > Engineering > Mechanical #12904 inÂ Books > Engineering & Transportation > Engineering > Civil & Environmental

[Download to continue reading...](#)

Analytical Fracture Mechanics (Dover Civil and Mechanical Engineering) Fracture and Fatigue Control in Structures: Applications of Fracture Mechanics (Astm Manual Series) Fracture and Fatigue Control in Structures: Applications of Fracture Mechanics Reinforced Concrete: Mechanics and Design (4th Edition) (Civil Engineering and Engineering Mechanics) Fundamentals of Air Pollution Engineering (Dover Civil and Mechanical Engineering) Flow-Induced Vibrations: An Engineering Guide (Dover Civil and Mechanical Engineering) Code Check Plumbing & Mechanical 4th Edition: An Illustrated Guide to the Plumbing and Mechanical Codes (Code Check Plumbing & Mechanical: An Illustrated Guide) Shigley's Mechanical Engineering Design (McGraw-Hill Series in Mechanical Engineering) Mechanical Engineering Design (McGraw-Hill Mechanical Engineering) Fundamentals of Earthquake Engineering (Civil engineering and engineering mechanics series) Deformation and Fracture Mechanics of Engineering Materials Elementary engineering fracture mechanics Advanced Fracture Mechanics (Oxford Engineering Science Series) The Finite Element Method: Linear Static and Dynamic Finite Element Analysis (Dover Civil and Mechanical Engineering) Lyapunov Matrix Equation in System Stability and Control (Dover Civil and Mechanical Engineering) Dynamics of Fluids in Porous Media (Dover Civil and Mechanical Engineering) Theory of Elastic Stability (Dover Civil and Mechanical Engineering) PE Mechanical Engineering: Mechanical Systems and Materials Practice Exam The Mechanical Design Process (Mcgraw-Hill Series in Mechanical Engineering) Fundamentals of Mechanical Vibrations: IBM PC 3.5 Version (Mcgraw Hill Series in Mechanical Engineering)

[Dmca](#)