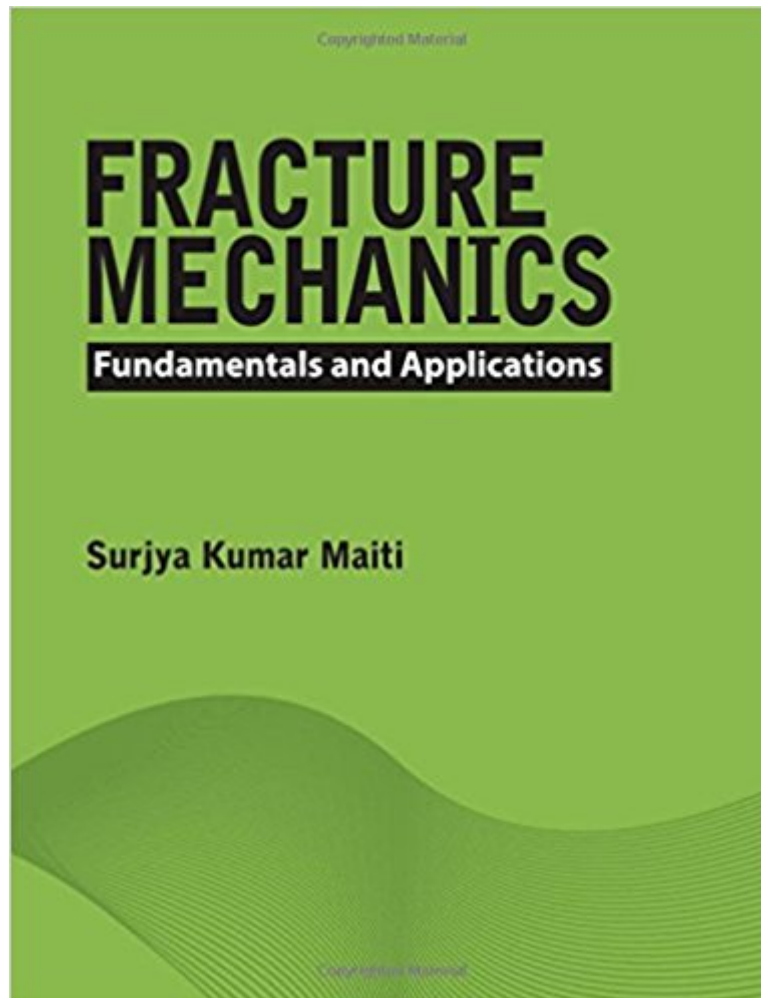




**Ebook Directory**  
the best source of ebook

The book was found

# Fracture Mechanics: Fundamentals And Applications



## Synopsis

Fracture mechanics studies the development and spreading of cracks in materials. The study uses two techniques including analytical and experimental solid mechanics. The former is used to determine the driving force on a crack and the latter is used to measure material's resistance to fracture. The text begins with a detailed discussion of fundamental concepts including linear elastic fracture mechanics (LEFM), yielding fracture mechanics, mixed mode fracture and computational aspects of linear elastic fracture mechanics. It explains important topics including Griffith theory of brittle crack propagation and its Irwin and Orowan modification, calculation of theoretical cohesive strength of materials through an atomic model and analytical determination of crack tip stress field. This book covers MATLAB programs for calculating fatigue life under variable amplitude cyclic loading. The experimental measurements of fracture toughness parameters K<sub>IC</sub>, J<sub>IC</sub> and crack opening displacement (COD) are provided in the last chapter.

## Book Information

Hardcover: 295 pages

Publisher: Cambridge University Press; 1 edition (October 1, 2015)

Language: English

ISBN-10: 1107096766

ISBN-13: 978-1107096769

Product Dimensions: 6.7 x 0.8 x 9.6 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #2,791,387 in Books (See Top 100 in Books) #88 in [Books > Engineering &](#)

[Transportation > Engineering > Materials & Material Science > Fracture Mechanics](#) #661

[in Books > Engineering & Transportation > Engineering > Chemical > Fluid Dynamics](#) #1983

[in Books > Science & Math > Physics > Dynamics](#)

## Customer Reviews

This book introduces the fundamental concepts and their mathematical foundations from the mechanics perspective. Real-life applications and numerical examples are provided throughout the text wherever necessary.

Surjya Kumar Maiti is a Professor in the Department of Mechanical Engineering, Indian Institute of Technology, Bombay. He has more than thirty-five years of teaching and research experience and

has published nearly 100 papers in national and international journals. He received his PhD from the Indian Institute of Technology, Bombay, and worked as postdoctoral assistant at the University of Cambridge for two years (1981-1983). He has taught courses on solid mechanics, strength of materials, stress analysis and pressure vessel design at both the undergraduate and postgraduate levels. His areas of research include fracture mechanics, finite element and boundary element methods, structural health monitoring and stress corrosion cracking.

good book, fast delivery

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

Fracture and Fatigue Control in Structures: Applications of Fracture Mechanics (Prentice-Hall International Series in Civil Engineering and Engineering Mechanics) Probabilistic fracture mechanics and reliability (Engineering Applications of Fracture Mechanics) Fracture Mechanics of Concrete: Applications of Fracture Mechanics to Concrete, Rock and Other Quasi-Brittle Materials Fracture and Fatigue Control in Structures: Applications of Fracture Mechanics (Astm Manual Series) Fracture Mechanics: Fundamentals and Applications, Fourth Edition Fracture Mechanics: Fundamentals and Applications, Third Edition By T. L. Anderson - Fracture Mechanics: Fundamentals and Applications, Third Edition (3rd Edition) (5/25/05) Fracture Mechanics: Fundamentals and Applications, Second Edition Fracture Mechanics: Fundamentals and Applications Dynamic Fracture Mechanics (Cambridge Monographs on Mechanics) Fundamentals of Fracture Mechanics Fracture Mechanics of Metals, Composites, Welds, and Bolted Joints: Application of LEFM, EPFM, and FMDM Theory Deformation and Fracture Mechanics of Engineering Materials Deformation and Fracture Mechanics of Engineering Materials, 5th Edition Analytical Fracture Mechanics (Dover Civil and Mechanical Engineering) Mechanics and Mechanisms of Fracture: An Introduction Principles of Fracture Mechanics Advanced Fracture Mechanics (Oxford Engineering Science Series) Fracture Mechanics The Practical Use of Fracture Mechanics

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)