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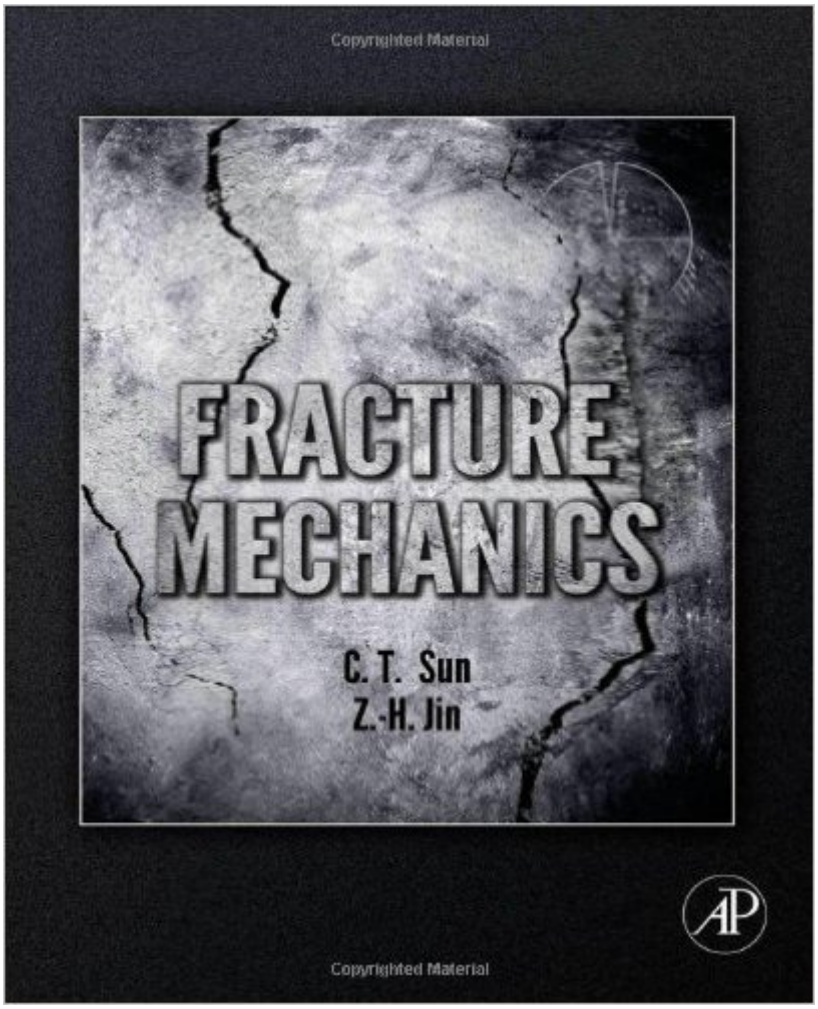
Fracture Mechanics



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Synopsis

Most design engineers are tasked to design against failure, and one of the biggest causes of product failure is failure of the material due to fatigue/fracture. From leading experts in fracture mechanics, this new text provides new approaches and new applications to advance the understanding of crack initiation and propagation. With applications in composite materials, layered structures, and microelectronic packaging, among others, this timely coverage is an important resource for anyone studying or applying concepts of fracture mechanics.Concise and easily understood mathematical treatment of crack tip fields (chapter 3) provides the basis for applying fracture mechanics in solving practical problemsUnique coverage of bi-material interfacial cracks (chapter 8), with applications to commercially important areas of composite materials, layered structures, and microelectronic packaging A full chapter (chapter 9) on the cohesive zone model approach, which has been extensively used in recent years to simulate crack propagationA unified discussion of fracture criteria involving nonlinear/plastic deformations

Book Information

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Customer Reviews

I used this book for a graduate level fracture mechanics class. It contains a lot of theory, but no practical problem solving. It has a problem set at the end of each chapter, but I don’t remember seeing very many, if any example problems in the book.Every student in my class complained about the book, so I wasn’t the only one.If you want a decent book, buy Anderson’s Fracture Mechanics - Fundamentals and Applications. Then you may want to take a look at this book for a more in depth

look at the theory.

I wholeheartedly agree with the other review on this page. This book is too concise to learn anything from it; rather I see it as a resource for someone who has already taken a course on Fracture Mechanics. Explanations are not always clear, and there are hardly any example problems worked out in the text. This lack of example problems makes the end-of-chapter problems extremely difficult and frustrating to do. My professor also had to post a list of corrections for several typos in this book.Overall, I have had to deal with/seen several textbooks written by C.T. Sun and they all seem to have the same problem: too concise in their explanations and too few example problems and applications.

This book is definitely written at the PhD graduate student level. I would not recommend that this book be used as anyone's first book on the subject of fracture mechanics. That being said, this is book contains a substantial amount of insight on specialty facture mechanics analysis topics that are not widely available in other fracture mechanics books.

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