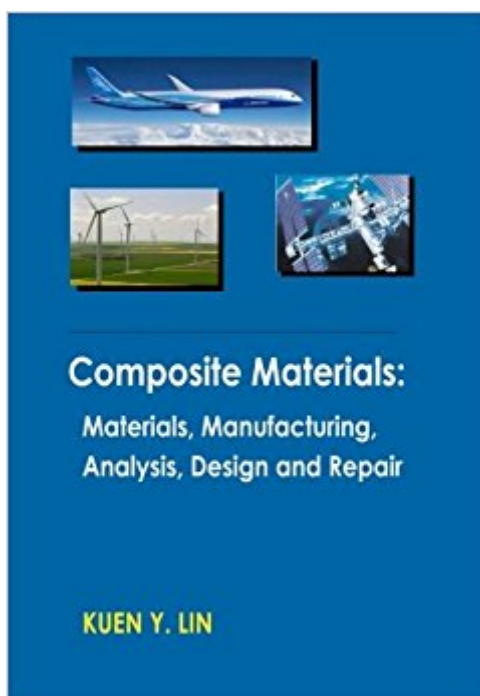


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# Composite Materials: Materials, Manufacturing, Analysis, Design And Repair



## Synopsis

This book provides an introduction to the fundamentals of composite materials for high performance structures from the point of view of engineering design, manufacturing, analysis, and repair. It is designed to address eight critical areas of composite technologies. Readers will learn how composite materials achieve properties of strength, stiffness, weight ratios and durability that surpass aluminum in high performance structures. For these applications, engineers typically rely on laminated structures, which are built up from many varying layers of ply-materials. Using this process the mechanical properties of the composite part can be tailored to specific applications resulting in significant weight and cost savings. Tailoring specific properties and designing innovative laminate structures highlights the multidisciplinary nature of this industry.

## Book Information

Paperback: 232 pages

Publisher: CreateSpace Independent Publishing Platform; 2 edition (April 3, 2015)

Language: English

ISBN-10: 151158534X

ISBN-13: 978-1511585347

Product Dimensions: 6.7 x 0.5 x 9.6 inches

Shipping Weight: 1.1 pounds (View shipping rates and policies)

Average Customer Review: 4.0 out of 5 stars 5 customer reviews

Best Sellers Rank: #206,485 in Books (See Top 100 in Books) #25 in [Books > Engineering & Transportation > Engineering > Aerospace > Aircraft Design & Construction](#) #306 in [Books > Science & Math > Astronomy & Space Science > Aeronautics & Astronautics](#)

## Customer Reviews

Dr. Kuen Y. Lin is currently a Professor in the William E. Boeing Department of Aeronautics and Astronautics at the University of Washington. Dr. Lin received his Master's degree in 1973 and Ph.D. degree in 1977 from Massachusetts Institute of Technology, specializing in Composite Materials and Aircraft Structures. Dr. Lin has over 40 years of research and teaching experience in advanced composite materials and structures. He has pioneered a singular hybrid finite element method for the accurate analysis of bi-material fracture problems (1976), and co-developed the well-known "Mar-Lin" fracture model (1977) for the damage tolerance analysis of composite structures. During the period 1978-1983, Dr. Lin was a senior specialist engineer at Boeing, working on Boeing's first major composite aircraft development program. Since his appointment to

the University of Washington faculty in 1984, he has developed an extensive research program in aerospace composite materials and structures. He has been awarded numerous research grants by FAA, NASA, DOD, Toray and Boeing in the analysis, design, testing, and repair of advanced composite materials. His current research focuses on critical composite technologies for the next generation of aerospace vehicles. In collaboration with The Boeing Company, Dr. Lin co-developed an award-winning certificate program in Aircraft Composite Structural Analysis and Design at the University of Washington. He has taught Composites courses to over 1,800 engineers working in the U.S. aerospace industry. Dr. Lin is the instructor of a UW online course on Composite Materials, which has attracted more than 11,800 students from 153 countries in Fall Quarter 2014.

This is an amazing book as an introductory lesson about composites. Many books make the mistake to jump right into equations and derivations, sometimes lacking of the explanations of mechanisms, which are far more important first to understand. Well, this book does not make that mistake. It explains very well the applications and the mechanism related to composite materials, giving also insights in the theory as well. Absolutely advised for new students in mechanics of composite materials aided with a more theory-complete book such as the Jones. Professor Lin is an outstanding Professor with a lot of experience in this field! Looking forward to future editions of this book.

The book covers the theory and practice of composites with special emphasis on carbon fiber materials. I used the book as companion of the course Composites from the University of Washington conducted by the author Dr. K.Y Lin. Using the course, the book and some Pre-Preg that I purchased from I got pretty good training in Composite materials. The book presents and excellent summary of theory and practice in the subject.

Not a bot. I am tired and lazy though so short review: good book for easy understanding. Great text to start on for beginning to learn about composites. Not the best for super fine intricate details. But ya gotta start somewhere.

Limited information and diagrams - not recommended

This is an amazing book as an introductory lesson about composites. Many books make the mistake to jump right into equations and derivations, sometimes lacking of the explanations of

mechanisms, which are far more important first to understand. Well, this book does not make that mistake. It explains very well the applications and the mechanism related to composite materials, giving also insights in the theory as well. Absolutely advised for new students in mechanics of composite materials aided with a more theory-complete book such as the Jones. Professor Lin is an outstanding Professor with a lot of experience in this field! Looking forward to future editions of this book.

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