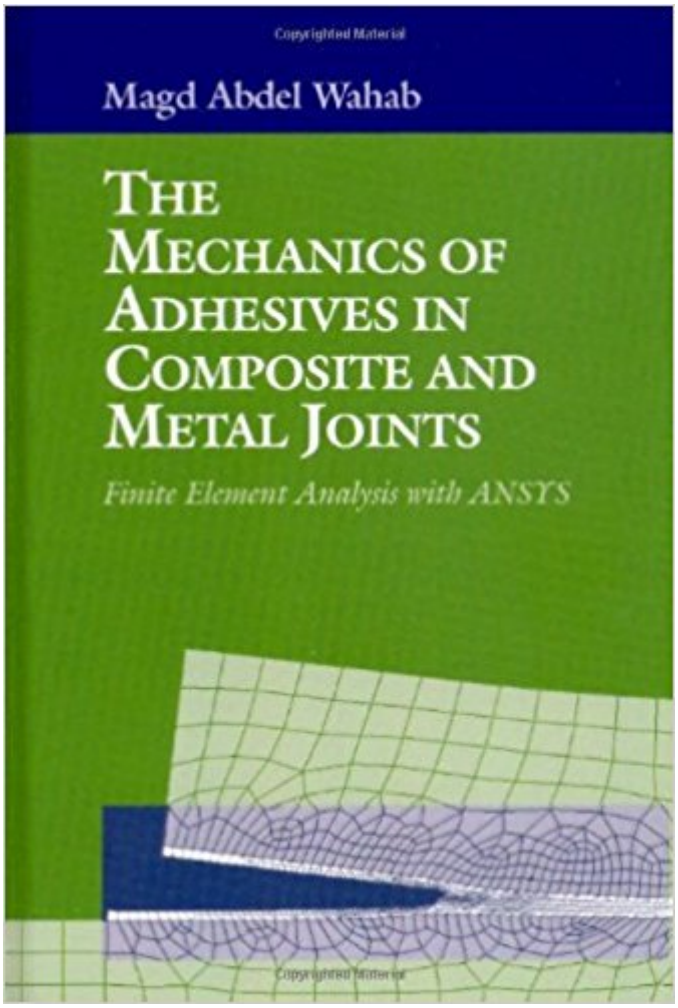
The Mechanics Of Adhesives In Composite And Metal Joints



Synopsis

Scientific background and practical methods for modeling adhered joints Tools for analyzing stress, fracture, fatigue crack propagation, thermal, diffusion and coupled thermal-stress/diffusion-stress, as well as life prediction of joints Book includes access to downloadable macrofiles for ANSYS This text investigates the mechanics of adhesively bonded composite and metallic joints using finite element analysis, and more specifically, ANSYS, the basics of which are presented. The book provides engineers and scientists with the technical know-how to simulate a variety of adhesively bonded joints using ANSYS. It explains how to model stress, fracture, fatigue crack propagation, thermal, diffusion and coupled field analysis of the following: single lap, double lap, lap strap/cracked lap shear, butt and cantilevered beam joints. Readers receive free digital access to a variety of input and program data, which can be downloaded as macrofiles for modeling with ANSYS.

Book Information

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Customer Reviews

This book describes finite element modelling of adhesive joints with composite and metal adherends. The contents are organized in 9 chapters from fundamentals to advanced modelling techniques. Classical solid elements, fracture mechanics elements and cohesive elements are treated. The main strength of the book is that it includes specific ANSYS commands for each type of analysis. This will certainly be very useful for the modelling engineer and for students. The analyses

presented range from simple models to very complex cases such as coupled thermal-stress and diffusion-stress. Finally, the editorial aspects are excellent with very clear English and quality figures and tables. --Lucas F M da Silva, Professor of Mechanical Engineering, University of Porto, Portugal

Magd Abdel Wahab, Ph.D., Professor and Chair Applied Mechanics, Ghent University, Belgium

The Mechanics of Adhesives in Composite and Metal Joints Damage Mechanics of Composite Materials, Volume 9 (Composite Materials Series) Composite Construction for Homebuilt Aircraft: The Basic Handbook of Composite Aircraft Aerodynamics, Construction, Maintenance and Repair Plus, How-To and Design Information Design and Analysis of Structural Joints with Composite Materials Heavy Metal Rhythm Guitar: The Essential Guide to Heavy Metal Rock Guitar (Learn Heavy Metal Guitar) (Volume 1) Mechanics of Composite Materials, Second Edition (Mechanical and Aerospace Engineering Series) Mechanics Of Composite Materials (Materials Science & Engineering Series) Engineering Mechanics of Composite Materials Principles of Composite Material Mechanics, Fourth Edition (Mechanical Engineering) Fracture Mechanics of Metals, Composites, Welds, and Bolted Joints: Application of LEFM, EPFM, and FMDM Theory Analysis and Deformulation of Polymeric Materials: Paints, Plastics, Adhesives, and Inks (Topics in Applied Chemistry) Botanicals Labels & Stickers: 150 Elegant Adhesives for Home and Gift-Giving Compounding Materials for the Polymer Industries: A Concise Guide to Polymers, Rubbers, Adhesives, and Coatings Joining Composites with Adhesives: Theory and Applications Book Binding With Adhesives Adhesives Technology Handbook, Third Edition (Plastics Design Library) Learn to Weld: Beginning MIG Welding and Metal Fabrication Basics - Includes techniques you can use for home and automotive repair, metal fabrication projects, sculpture, and more Sheet Metal Handbook: How to Form and Shape Sheet Metal for Competition, Custom and Restoration Use Heavy Metal Africa: Life, Passion, and Heavy Metal in the Forgotten Continent Full Metal Jackie Certified: The 50 Most Influential Heavy Metal Songs of the 80s and the True Stories Behind Their Lyrics