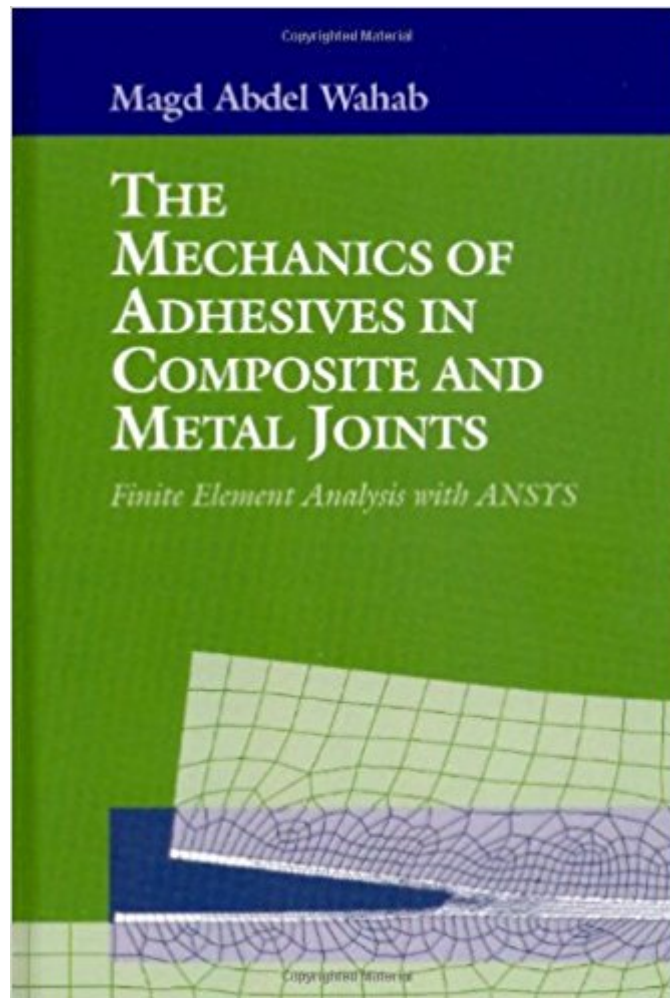




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# The Mechanics Of Adhesives In Composite And Metal Joints



## 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

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