

## Polymer Composites in the Aerospace Industry (Woodhead Publishing Series in Composites)


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### Editorial Review

#### Review

"...well-written and provides a useful entry point into a large majority of the topics that currently effect design of aerospace structures. As such the book is thoroughly recommended." --**The Aeronautical Journal**

#### From the Back Cover

making them ideal for use in aerospace applications. Polymer Composite in the Aerospace Industry outlines the requirements of aerospace manufacture and the suitability of polymer composites to fulfil these needs. In addition to polymer composite processes, properties and design for aerospace applications, the assessment of fatigue and damage tolerance are also reviewed.

Part I introduces key factors involved in the design and manufacture of composite components for aerospace structures. Following an initial outlining of techniques for modelling the structure and behaviour of woven composites, it goes on to explore manufacturing and strengthening processes, with composite performance then discussed in more detail in Part II. Strength and stiffness modelling, fatigue under multiaxial loading, fracture mechanics, testing and failure analysis are all reviewed alongside composite responses to specific conditions and impacts and techniques for the repair of damaged structures. Polymer Composites in the Aerospace Industry then concludes by discussing non-destructive testing and structural health monitoring.

This book is a comprehensive guide to the principles determining the use of polymer composites in the Aerospace industry for students, academics and designers of polymer composite and aerospace construction materials.

Philip Irving is Professor of Damage Tolerance in the Manufacturing and Materials Department at the University of Cranfield, UK, and has worked with many of the biggest companies and organisations in the aerospace industry. Costas Soutis is Professor of Aerospace Engineering and Director of the Aerospace Research Institute at the University of Manchester. He has taught and performed research at some of the most respected Universities in the world and has recently been elected as a Fellow of the Royal Academy of Engineering, FEng.

#### About the Author

P. Irving, Cranfield University, UK and C. Soutis, University of Manchester, UK.

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