

loss is developed, and assessed by application to several test cases.

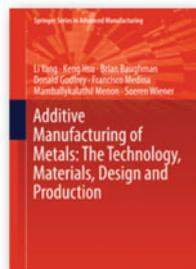
Chapter 4 presents an overview of the principles of active noise control and looks at some examples of practical applications. It then goes on to develop an adaptive feed-forward control scheme, in which an input signal highly correlated with the disturbance is used to derive the control signal, and the magnitude and phase of the control inputs are adapted using feedback from error sensors. Multi-input/multi-output controllers are developed using three different control algorithms. Numerical simulations are then performed using varying numbers of actuators and sensors.

Chapter 6 describes an experimental demonstration of the active control system in the form of a 'smart window' on a laboratory test bed. A real-time control system is implemented using equipment and software that would be familiar to users of most university acoustic labs. It is pleasing that imperfections in the experimental setup are acknowledged and discussed rather than ignored. Finally, the results are evaluated in terms of passenger comfort using a 'virtual passenger model' which considers the subjective human response to sound quality as well as objective parameters such as pressure level.

There are three appendices. The first two present numerical studies of structures with surface-bonded piezoelectric actuators and sound power radiation from baffled rectangular plates. The third describes some preliminary experimental studies of the actuators used in the main experiment. A comprehensive bibliography and index are also provided.

The text is well written and supported by clear and useful illustrations. This would be a useful textbook for postgraduate or advanced undergraduate studies and would also make a good introductory text for engineers moving into the field. The literature survey and bibliography provide a useful starting point for further study.

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Additive Manufacturing of Metals: The Technology, Materials, Design and Production

L. Yang et al.

Springer. 2017. 168pp. Illustrated. £69.99.
ISBN 978-3-319-55127-2.

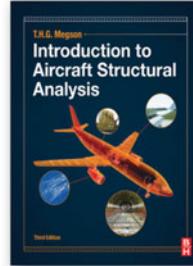
The book topic, focusing on metals, is relevant and highly marketable due to the current interest in this area. However, the book is more of a general look at Additive Manufacturing (AM) and does not put as much detail into 'Metals' as one might expect from reading the book title.

For instance the book is 168 pages, but only has 14 pages dedicated to metal AM. There are an additional 16 pages in Chapter 3 dedicated to metal properties, but this chapter could quite easily be extracted from a non-AM related book focusing on other metal processing technologies. There are other related metal AM sections scattered across the book (for instance, when discussing design), however, not enough to merit a book entitled *Additive Manufacturing of Metals*.

To me, the book seems a bit disjointed in regards to topics covered and incomplete. For instance, why is there a chapter dedicated to Electron Beam Manufacturing (EBM) but none to Selective Laser Melting (SLM)? SLM is by far a more widely used metal AM process throughout the world, much more compared to EBM. Some aspects of SLM are covered but are scattered throughout the book, i.e. placed in Chapter 5.5 in design considerations; the topics covered here should not fall within a 'design considerations section' but rather a dedicated chapter to SLM-related processing conditions.

Overall, the book covers some interesting topics that are not included in other AM books; however, in the book topics, structure and detail related to metal AM are incomplete. People will buy this (but perhaps not intermediate to advanced users of this technology) within industry and academia, but the subject area has more potential to be covered in a more detailed and logical manner.

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Introduction to Aircraft Structural Analysis – 3rd Edition

T. H. G. Megson

Elsevier Butterworth-Heinemann, The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB, UK. 2017. xiii; 743pp. Illustrated. £62.50. ISBN 978-0-08-102076-0.

The analysis of thin-walled aircraft structures normally takes two forms. Firstly, the actual aircraft structure is idealised locally as a component such that an exact solution is then obtainable using classical applied mechanics. Secondly, the structure is approximated numerically (by finite elements) such that by using modern computer power, the model can be virtually exact and a numerical value given of the stresses etc.

The first approach has been used for decades, before the advent of computers, and this book has been a classic aid for such analysis, popular for students and practicing engineers. A list of the subjects of the chapter headings shows how many forms of idealised components can be analysed.