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Jet Propulsion: A Simple Guide To The Aerodynamics And Thermodynamic Design And Performance Of Jet Engines





Synopsis

This book is a self-contained introduction to the aerodynamic and thermodynamic design of modern civil and military jet engine design. Through two engine design projects for a large passenger and a new fighter aircraft, the text explains modern engine design. Individual sections cover aircraft requirements, aerodynamics, principles of gas turbines and jet engines, elementary compressible fluid mechanics, bypass ratio selection, scaling and dimensional analysis, turbine and compressor design and characteristics, design optimization, and off-design performance. The civil aircraft, which was the core of the Part 1 of earlier editions, has now been in service for several years as the Airbus A380. Attention in the aircraft industry has now shifted to two-engine aircraft with a greater emphasis on reduction of fuel burn, so the model created for Part 1 is the new efficient aircraft, a twin aimed at high efficiency.

Book Information

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Customer Reviews

"This book provides an excellent overview of the thermodynamic analysis and performance of turbojet based engines for the aircraft industry. ... The book includes an excellent set of example questions for each section which are given a relevant contemporary context. ... This is an excellent resource for anyone wishing to use this as a textbook as part of an undergraduate aerospace engineering programme. The authors have used their extensive industrial links to develop a textbook that is not only useful to undergraduate students on any programme covering aero gas turbine engines but would find a suitable place on the desk of professionals working in the industry."

This book is a self-contained introduction to the design of modern civil and military jet engines through two engine design projects for a large passenger and a new fighter aircraft. Numerous exercises, with solutions for the instructor, are included. The book emphasizes principles enriched by industrial examples from the author's experience.

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