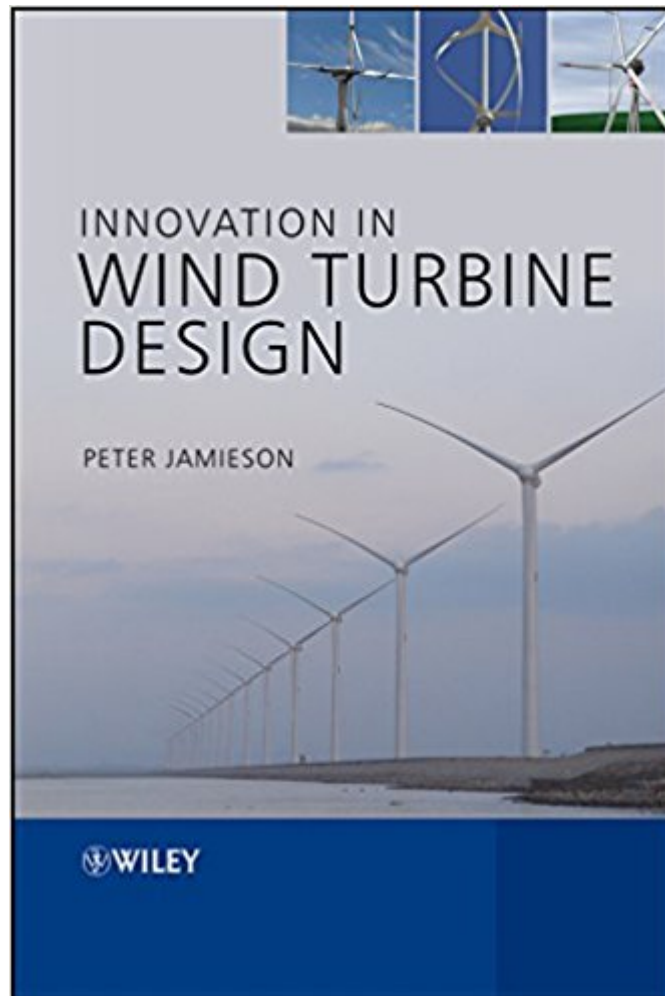




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# **Innovation In Wind Turbine Design**



## Synopsis

Innovation in Wind Turbine Design addresses the fundamentals of design, the reasons behind design choices, and describes the methodology for evaluating innovative systems and components. Always referencing a state of the art system for comparison, Jamieson discusses the basics of wind turbine theory and design, as well as how to apply existing engineering knowledge to further advance the technology, enabling the reader to gain a thorough understanding of current technology before assessing where it can go in the future. Innovation in Wind Turbine Design is divided into four main sections covering design background, technology evaluation, design themes and innovative technology examples: Section 1 reviews aerodynamic theory and the optimization of rotor design, discusses wind energy conversion systems, drive trains, scaling issues, offshore wind turbines, and concludes with an overview of technology trends with a glimpse of possible future technology. Section 2 comprises a global view of the multitude of design options for wind turbine systems and develops evaluation methodology, including cost of energy assessment with some specific examples. Section 3 discusses recurrent design themes such as blade number, pitch or stall, horizontal or vertical axis. Section 4 considers examples of innovative technology with case studies from real-life commercial clients. This groundbreaking synopsis of the state of the art in wind turbine design is must-have reading for professional wind engineers, power engineers and turbine designers, as well as consultants, researchers and academics working in renewable energy.

## Book Information

Hardcover: 316 pages

Publisher: Wiley; 1 edition (September 19, 2011)

Language: English

ISBN-10: 0470699817

ISBN-13: 978-0470699812

Product Dimensions: 6.9 x 0.9 x 9.7 inches

Shipping Weight: 1.7 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 stars 5 customer reviews

Best Sellers Rank: #2,340,940 in Books (See Top 100 in Books) #82 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Alternative & Renewable > Wind #3304 in Books > Textbooks > Engineering > Mechanical Engineering #8657 in Books > Engineering & Transportation > Engineering > Mechanical

## Customer Reviews

"I highly recommend the landmark and rigorous book *Innovation in Wind Turbine Design* by Peter Jamieson, to anyone in engineering, studying in engineering schools, wind turbine design, innovation and evaluation, business leadership, and policy making seeking a strong, engineering principles based book on design and innovation. This book, while containing some advanced mathematics, is also approachable as a guide to developing wind turbine innovations, and for evaluating the resulting designs from an economic and market perspective as well." (Blog Business World, 31 October 2011)

*Innovation in Wind Turbine Design* addresses the fundamentals of design, the reasons behind design choices, and describes the methodology for evaluating innovative systems and components. Always referencing a state of the art system for comparison, Jamieson discusses the basics of wind turbine theory and design, as well as how to apply existing engineering knowledge to further advance the technology, enabling the reader to gain a thorough understanding of current technology before assessing where it can go in the future. *Innovation in Wind Turbine Design* is divided into four main sections covering design background, technology evaluation, design themes and innovative technology examples: Section 1 reviews aerodynamic theory and the optimization of rotor design, discusses wind energy conversion systems, drive trains, scaling issues, offshore wind turbines, and concludes with an overview of technology trends with a glimpse of possible future technology. Section 2 comprises a global view of the multitude of design options for wind turbine systems and develops evaluation methodology, including cost of energy assessment with some specific examples. Section 3 discusses recurrent design themes such as blade number, pitch or stall, horizontal or vertical axis. Section 4 considers examples of innovative technology with case studies from real-life commercial clients. This groundbreaking synopsis of the state of the art in wind turbine design is must-have reading for professional wind engineers, power engineers and turbine designers, as well as consultants, researchers and academics working in renewable energy.

This is an excellent, up to date review of a wide range of wind turbine topics, from the underlying physics, to the tradeoffs between various configurations. It's got plenty of equations for those who want to go deeper into the technical aspects, but also a wealth of summary graphs that make the basic insights available to the reader efficiently. This book will be the most valuable to those with a solid technical background, but still provides content accessible to a broader technical audience. From one who has been a wind turbine rotor designer and researcher for over three decades - this is an excellent book, worth having on your shelf if you seek a technical understanding of what's

driving modern wind turbine design and evolution.

Great book with in depth insight to innovations in the wind industry

The technical breadth and balance of the material is excellent. It is well written and in a format that challenges one think beyond the current state of technologies.

This book did a good job of bringing me up to speed on the principles of wind turbine design.

Technology is a key to continued development and growth in the wind industry. This book present complex theory well and this is linked with technology examples from the industry. Why and how parameters relate and perform are in general very well explained. The book is a fundamental tool for understanding of present and future technologies and trends. If proper wind turbine design experience has value for you: Buy the book.

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