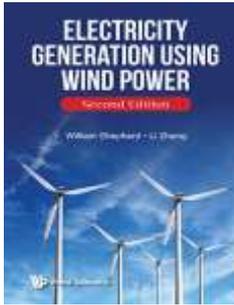


## Electricity Generation Using Wind Power



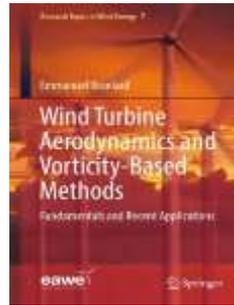
v pevné vazbě, 300 stran  
vyd. World Scientific, 2.vydání,  
III/2017  
ISBN 9789813148659

katalog.cena cca 2.730 Kč vč.DPH  
v této nabídce **2.190 Kč** vč.DPH

Is wind power the answer to our energy supply problems? Is there enough wind for everyone? Is offshore generation better than onshore generation? Can a roof-mounted wind turbine generate enough electricity to supply a typical domestic household? Electricity Generation Using Wind Power (2nd Edition) answers these pressing questions through its detailed coverage of the different types of electrical generator machines used, as well as the power electronic converter technologies and control principles employed. Also covered is the integration of wind farms into established electricity grid systems, plus environmental and economic aspects of wind generation. Written for technically minded readers, especially electrical engineers concerned with the possible use of wind power for generating electricity, it incorporates some global meteorological and geographical features of wind supply plus a survey of past and present wind turbines. Included is a technical assessment of the choice of turbine sites.

The principles and analysis of wind power conversion, transmission and efficiency evaluation are described. This book includes worked numerical examples in some chapters, plus end of chapter problems and review questions, with answers. As a textbook it is pitched at the level of final year undergraduate engineering study but may also be useful as a textbook or reference for wider technical studies.

## Wind Turbine Aerodynamics and Vorticity-Based Methods



v pevné vazbě, 632 stran  
vyd. Springer, IV/2017  
ISBN 9783319551630

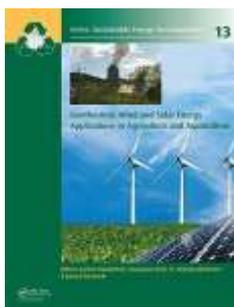
katalog.cena cca 5.860 Kč vč.DPH  
v této nabídce **4.680 Kč** vč.DPH

The book introduces the fundamentals of fluid-mechanics, momentum theories, vortex theories and vortex methods necessary for the study of rotors aerodynamics and wind-turbines aerodynamics in particular. Rotor theories are presented in a great level of details at the beginning of the book. These theories include: the blade element theory, the Kutta-Joukowski theory, the momentum theory and the blade element momentum method.

A part of the book is dedicated to the description and implementation of vortex methods. The remaining of the book focuses on the study of wind turbine aerodynamics using vortex-theory analyses or vortex-methods. Examples of vortex-theory applications are: optimal rotor design, tip-loss corrections, yaw-models and dynamic inflow models. Historical derivations and recent extensions of the models are presented. The cylindrical vortex model is another example of a simple analytical vortex model presented in this book. This model leads to the development of different BEM models and it is also used to provide the analytical velocity field upstream of a turbine or a wind farm under aligned or yawed conditions.

Different applications of numerical vortex methods are presented. Numerical methods are used for instance to investigate the influence of a wind turbine on the incoming turbulence. Sheared inflows and aero-elastic simulations are investigated using vortex methods for the first time.

## Geothermal, Wind and Solar Energy Applications in Agriculture and Aquaculture



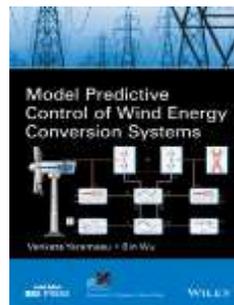
v pevné vazbě, 420 stran  
vyd. CRC Press, VII/2017  
ISBN 9781138029705

katalog.cena cca 5.220 Kč vč.DPH  
v této nabídce **4.170 Kč** vč.DPH

The agri-food chain consumes about one third of the world's energy production with about 12% of it for crop production and nearly 80% for processing, distribution, retail, preparation and cooking. The agri-food chain also accounts for 80-90% of total global freshwater use where 70% alone is for irrigation. Additionally, on a global scale, freshwater production consumes nearly 15% of the entire energy production. It can therefore be argued that making agriculture and the agri-food supply chain independent from fossil fuel use has a huge potential to contribute to global food security and climate protection not only for the next decades but also for the coming century. Provision of secure, accessible and environmentally sustainable supplies of water, energy and food must thus be a priority. One of the major objectives of the world's scientists, farmers, decisions makers and industrialists is to overcome the present dependence on fossil fuels in the agri-food sector.

This dependency increases the volatility of food prices and affects economic access to sustenance. The aim of this book is to critically review recent developments in solar, wind and geothermal energy applications in agriculture and the agri-food sector such as processing, distribution, retail, preparation and cooking.

## Model Predictive Control of Wind Energy Conversion Systems



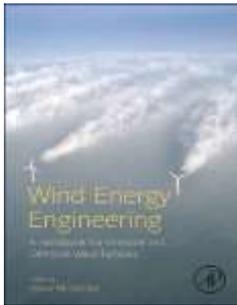
v pevné vazbě, 512 stran  
vyd. John Wiley & Sons, I/2017  
ISBN 9781118988589

katalog.cena cca 3.770 Kč vč.DPH  
v této nabídce **2.990 Kč** vč.DPH

Model Predictive Control of Wind Energy Conversion Systems addresses the predictive control strategy that has emerged as a promising digital control tool within the field of power electronics, variable-speed motor drives, and energy conversion systems. The authors provide a comprehensive analysis on the model predictive control of power converters employed in a wide variety of variable-speed wind energy conversion systems (WECS). The contents of this book includes an overview of wind energy system configurations, power converters for variable-speed WECS, digital control techniques, MPC, modeling of power converters and wind generators for MPC design. Other topics include the mapping of continuous-time models to discrete-time models by various exact, approximate, and quasi-exact discretization methods, modeling and control of wind turbine grid-side two-level and multilevel voltage source converters.

The authors also focus on the MPC of several power converter configurations for full variable-speed permanent magnet synchronous generator based WECS, squirrel-cage induction generator based WECS, and semi-variable-speed doubly fed induction generator based WECS.

## Wind Energy Engineering



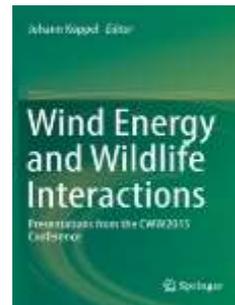
v pevné vazbě, 622 stran  
vyd. Academic Press, V/2017  
ISBN 9780128094518

katalog.cena cca 3.970 Kč vč.DPH  
v této nabídce **3.250 Kč** vč.DPH

Wind Energy Engineering: A Handbook for Onshore and Offshore Wind Turbines is the most advanced, up-to-date and research-focused text on all aspects of wind energy engineering. Wind energy is pivotal in global electricity generation and for achieving future essential energy demands and targets. In this fast moving field this must-have edition starts with an in-depth look at the present state of wind integration and distribution worldwide, and continues with a high-level assessment of the advances in turbine technology and how the investment, planning, and economic infrastructure can support those innovations.

Each chapter includes a research overview with a detailed analysis and new case studies looking at how recent research developments can be applied. Written by some of the most forward-thinking professionals in the field and giving a complete examination of one of the most promising and efficient sources of renewable energy, this book is an invaluable reference into this cross-disciplinary field for engineers.

## Wind Energy and Wildlife Interactions



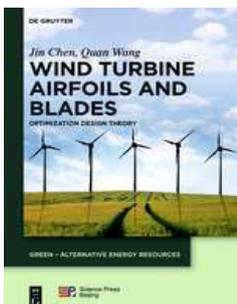
v pevné vazbě, 289 stran  
vyd. Springer, II/2017  
ISBN 9783319512709

katalog.cena cca 4.400 Kč vč.DPH  
v této nabídce **3.520 Kč** vč.DPH

This book presents a selection of new insights in understanding and mitigating impacts on wildlife and their habitats. Topics such as, species behaviour and responses; collision risk and fatality estimation; landscape features and gradients, are considered. Other chapters in the book cover the results of current research on mitigation; compensation; effectiveness of measures; monitoring and long-term effects; planning and siting.

Examples are given of current research on shutdown on demand and curtailment algorithms. By identifying what we have learned so far, and which predominate uncertainties and gaps remain for future research, this book contributes to the most up to date knowledge on research and management options. This book includes presentations from the Conference on Wind Energy and Wildlife impacts (CWW15), March 2015, hosted by the Berlin Institute of Technology, which offered a platform to national and international participants to showcase the current state of knowledge in wind energy's wildlife implications.

## Wind Turbine Airfoils and Blades

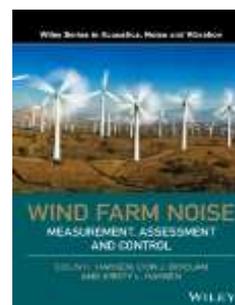


v pevné vazbě, 410 stran  
vyd. de Gruyter, VIII/2017  
ISBN 9783110344219

katalog.cena cca 2.930 Kč vč.DPH  
v této nabídce **2.390 Kč** vč.DPH

Wind Turbine Airfoils and Blades introduces new ideas in the design of wind turbine airfoils and blades based on functional integral theory and the finite element method, accompanied by results from wind tunnel testing. The authors also discuss the optimization of wind turbine blades as well as results from aerodynamic analysis. This book is suitable for researchers and engineers in aeronautics and can be used as a textbook for graduate students.

## Wind Farm Noise



v pevné vazbě, 624 stran  
vyd. John Wiley & Sons, III/2017  
ISBN 9781118826065

katalog.cena cca 3.030 Kč vč.DPH  
v této nabídce **2.390 Kč** vč.DPH

A comprehensive guide to wind farm noise prediction, measurement, assessment, control and effects on people Wind Farm Noise covers all aspects associated with the generation, measurement, propagation, regulation and adverse health effects of noise produced by large horizontal-axis wind turbines of the type used in wind farms. The book begins with a brief history of wind turbine development and the regulation of their noise at sensitive receivers. Also included is an introductory chapter on the fundamentals of acoustics relevant to wind turbine noise so that readers are well prepared for understanding later chapters on noise measurements, noise generation mechanisms, noise propagation modelling and the assessment of the noise at surrounding residences.

Key features: \* Potential adverse health effects of wind farm noise are discussed in an objective way. \* Means for calculating the noise at residences due to a wind farm prior to construction are covered in detail along with uncertainty estimates. \* The effects of meteorological conditions and other influences, such as obstacles, ground cover and atmospheric absorption, on noise levels at residences are explained. \* Quantities that should be measured as well as how to best measure them in order to properly characterise wind farm noise are discussed in detail. \* Noise generation mechanisms and possible means for their control are discussed as well as aspects of wind farm noise that still require further research to be properly understood. The book provides comprehensive coverage of the topic, containing both introductory and advanced level material.