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# Intelligent Data Mining and Analysis in Power and Energy Systems

Models and Applications for  
Smarter Efficient Power Systems

EDITED BY Zita Vale, Tiago Pinto, Michael Negnevitsky,  
Ganesh Kumar Venayagamoorthy



  
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## **Intelligent Data Mining and Analysis in Power and Energy Systems**

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# Intelligent Data Mining and Analysis in Power and Energy Systems

Models and Applications for Smarter Efficient Power Systems

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*“To our dear Parents and Children”*





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## Foreword

Recent machine learning and data analytics methods have proliferated into most areas of science, engineering, and commerce. There are excellent reasons for their increasing popularity and applications. Many real-world problems are too complex to come up with closed-form analytical solutions. However, such challenges did not make practitioners idle; instead, they have created working models, prototypes and even built systems with a careful understanding of critical components of the systems as a first step. The data generated from such systems are then analyzed by machine learning and data analytics methods to have a more comprehensive understanding of the systems.

This book titled *Intelligent Data Mining and Analysis in Power and Energy Systems* makes a huge leap in this direction in providing a better understanding of power and energy systems. Compiled by Zita Vale, Tiago Pinto, Michael Negnevitsky, and Ganesh Kumar Venayagamoorthy, the book begins with an introduction to machine learning and data analytics methods and then lays out state-of-the-art methods in addressing various topics in power and energy system design, clustering, classification, forecasting, and analysis with latest machine learning and data analytics methods.

The book is self-contained and written for both novice and experts on the topic. The topics are discussed in simple manner with adequate references and details, so that readers can understand the current state-of-the-art and also find relevant past studies in a single volume.

If you are working in power and energy systems either as a researcher or a practitioner, this is a must-have book to stay ahead in the game. Authors are experts in their own fields. The book will save your efforts in searching for materials on the topic, provide you with the latest methodologies, and direct you to other similar past studies.

Kudos to the editors for this compilation and authors for their contributions.

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