1. Record Nr. UNINA990008938500403321

Titolo	Chemical engineering and processing
Pubbl/distr/stampa	Lausanne, : Elsevier Sequoia
ISSN	0255-2701
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico

2. Record Nr. UNINA9911015874903321

Autore	Cheng Xu
Titolo	Computational Methods for Blade Icing Detection of Wind Turbines / / by Xu Cheng, Fan Shi, Xiufeng Liu, Shengyong Chen
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9667-63-1
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (347 pages)
Collana	Engineering Applications of Computational Methods, , 2662-3374 ; ; 24
Altri autori (Persone)	ShiFan LiuXiufeng ChenShengyong
Disciplina	629.8
Soggetti	Mechatronics Renewable energy sources Time-series analysis Machine learning Renewable Energy Time Series Analysis Machine Learning
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- State of the art -- Modeling of time series -- Attention-based convolutional neural network for blade icing detection

-- Multiscale Graph-based neural network for blade icing detection -- Multiscale Wavelet-Driven Graph Convolutional Network for Blade Icing Detection -- Prototype-based Semi-supervised blade icing detection -- Class Imbalanced Federated Learning Model for Blade Icing Detection -- Heterogeneous Federated Learning Model for Blade Icing Detection -- Blockchain-enhanced Federated Learning Model for Blade Icing Detection -- Concluding remarks.

Sommario/riassunto

This book thoroughly explores the realm of data-driven blade-icing detection for wind turbines, focusing on multivariate time series classification to enhance the reliability and efficiency of wind energy utilization. The widespread prevalence of sensor technology in wind turbines, coupled with substantial data collection, has paved the way for advanced data-driven methodologies, which do not require extensive domain knowledge or additional mechanical tools. The interdisciplinary appeal of this study has drawn attention from experts in fields like computer science, mechanical engineering, and renewable energy systems. Adopting a comprehensive approach, the book lays down a foundational framework for blade-icing detection, stressing the critical role of sensor data integration and the profound impact of machine learning techniques in refining the detection processes. The book is designed for undergraduate and graduate students keen on renewable energy technologies, researchers delving into machine learning applications in energy systems, and engineers focusing on sustainable solutions for enhancing wind turbine performance.