1. **Record Nr.** UNINA9910767544603321

Autore Dmitriev Victor

Titolo Partial Discharges in Hydroelectric Generators [[electronic resource]] : Detection, Processing, Classification, and Pinpointing / / by Victor Dmitriev, Rodrigo M. S. Oliveira, Ronaldo F. Zampolo, Paulo R. Moutinho de Vilhena, Fernando de Souza Brasil, Martim Felipe Fernandes

Pubbl/distr/stampa Cham : , : Springer International Publishing : , : Imprint : Springer, , 2024

ISBN 3-031-36604-2

Edizione [1st ed. 2024.]

Descrizione fisica 1 online resource (238 pages)

Collana Power Systems, , 1860-4676

Altri autori (Persone) OliveiraRodrigo M. S
ZampoloRonaldo F
Moutinho de VilhenaPaulo R
de Souza BrasilFernando
FernandesMartim Felipe

Disciplina 621.312134

Soggetti Electric power production
Water-power
Electric power-plants
Electric machinery
Power electronics
Electrical Power Engineering
Hydroenergy
Power Stations
Electrical Machines
Power Electronics

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Introduction -- Physics and Types of PDs -- PD Frequency Characteristics, Sensors, and Methods to Measure PD -- Partial Discharge Measurements in Synchronous Generators -- Digital Signal Processing Techniques Applied to Partial Discharge Monitoring and Classification -- Pinpointing Partial Discharges -- Partial Discharges and Ozone -- Conclusions.

Sommario/riassunto

Effective implementation of predictive maintenance programs in power plants requires the online condition monitoring of electrical generators. This book offers a comprehensive guide on the measurement, detection, and interpretation of partial discharges in hydroelectric generators. It covers a range of essential topics such as the physics of partial discharge phenomenon, various types of defects and partial discharge patterns, sensors and acquisition procedures, signal processing techniques, automatic classification of discharge types, and correlation between partial discharge occurrence and ozone generation. Numerical modelling of partial discharges and calculation of the associated radiating electromagnetic fields are also discussed. To aid understanding, the book provides theoretical explanations, practical examples, and functional Python code on Google's Colaboratory platform. This book is a valuable resource for anyone seeking a deep understanding of partial discharges in hydroelectric generators. Presents in-depth theory with examples; Provides experimental data illustrating effects of PD in machine components; Includes functional Python and C code examples.