Application of signal processing in microgrids

A review is made on the operation, application, and control system for microgrids. This paper is structured as follows: the microgrid structure and operation are presented in Section 2.

To enhance the accuracy of identifying power quality disturbances in microgrids, this paper introduces a Multi-level Global Convolutional Neural Network combined with a Simplified ...

Signal processing-based techniques: These methods employ advanced signal analysis tools, including Fourier, wavelet, and Hilbert-Huang transforms, to extract fault features in the time ...

Signal processing methods have recently gained significant popularity due to their numerous advantages. Motivated by these benefits, researchers have dedicated their efforts to ...

The work published in this book is related to the application of advanced signal processing in smart grids, including power quality, data management, stability and economic management in presence of ...

This review article comprehensively investigates and evaluates the application of signal processing and machine learning techniques in the context of islanding detection and diagnosis ...

This paper proposes a hybrid arc fault detection technique that integrates empirical mode decomposition (EMD) based signal processing technique with Bagging Tree (BT) based learning algorithm to ...

They are the enabling technology for many applications of microgrids, e.g., renewable energy integration, transportation electrification, energy storage, and power supplies for computing.

Kanche Anjaiah, Jonnalagadda Divya, Eluri N.V.D.V.Prasad, et al. Signal processing and machine learning techniques in DC microgrids:a review [J]. Global energy interconnection, 2025, (4).

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