

In a microgrid, with several distributed generators (DGs), energy storage units and loads, one of the most important considerations is the control of power converters. These converters implement interfaces between the DGs ...

The technologies that support smart grids can also be used to drive efficiency in microgrids. A smart microgrid utilizes sensors, automation and control systems for optimization of energy production, storage and distribution. Smart microgrids ...

To simulate micro-grid systems, an effective three-legged IGBT inverter has been developed using Matlab R2016a/Simulink. The inverter switches are controlled by a pulse controller, ...

This paper proposes a fusion algorithm for online reliability evaluation of microgrid inverter IGBT, which combines condition monitoring and reliability evaluation. Firstly, ...

A smart grid is an advanced electrical grid that uses digital technology and two-way communication to optimize energy production, distribution, and consumption, while a microgrid is a localized grid that can operate independently or in ...

Recently, a global trend for environment-friendly power generation systems is combined with increased usage of renewable energies, enhancing the complexity and size of microgrids. 1 ...

A "smart inverter" should offer some features such as plug and play, self-awareness, adaptability, autonomy and cooperativeness. These features are introduced and comprehensively explained in ...

Faster switching speeds can be seen in insulated gate bipolar transistor (IGBT) whose switching speed can be represented as 53 - 56. where V_{sw} and V_{dc} are the input of the ...

4 ???; This chapter goes through the concepts of microgrids and smart grids. The microgrid can be considered as a small-scale grid that uses distributed energy resources like solar PV ...

Microgrids können unabhängig vom Stromnetz agieren und erhöhen die Versorgungssicherheit bei Netzstörungen. Im Gegensatz zu Smart Grids, die smarte Technologien integrieren, sind ...

Various control aspects used in AC microgrids are summarized, which play a crucial role in the improvement of smart MGs. The control techniques of MG are classified into three layers: primary, secondary, and tertiary and four sub ...

The losses of the IGCTs are lower than IGBTs and suitable for MVDC microgrids . In, an IGCT-based protection system was applied to a DC microgrid and used as an reverse blocking IGCT ...

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