

SOLAR BASED GRID MATCHING SYSTEM USING FPGA CONTROLLER AND SPEIC CONVERTER

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The increasing demand for renewable energy sources has led to the development of solar-based grid matching systems that can effectively manage power generation from solar panels and feed it into the power grid. This paper proposes a solar-based grid matching system that utilizes a Field-Programmable Gate Array (FPGA) controller and a SPEIC converter to achieve efficient power conversion and control. The FPGA controller is responsible for managing the system's operations, including power regulation, monitoring, and communication with the power grid. The SPEIC converter is used to convert DC power generated by the solar panels to AC power that can be fed into the grid. The proposed system's performance is evaluated using simulations, and the results show that it can effectively regulate power output and maintain stability during changes in environmental conditions. The system's implementation using FPGA and SPEIC technology makes it an efficient and cost-effective solution for solar-based grid matching systems.

Keywords: Field-Programmable Gate Array (FPGA), SPEIC converter

BIOMETRIC BASED ELECTRIC POLE SYSTEM WITH IOT TECHNOLOGY

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A biometric-based electric pole system is a technological solution aimed at improving the security and management of electric poles. The system utilizes biometric technology to authenticate access to electric poles, ensuring that only authorized personnel have access to them. The system also includes sensors that can detect unusual activity around the electric poles, alerting authorities to potential security breaches or maintenance issues. The proposed biometric-based electric pole system with IoT technology provides an effective solution for enhancing the security and maintenance of electric poles. It can help reduce accidents and theft, while also improving the efficiency of maintenance operations. The system can be scaled up and integrated into the existing infrastructure, making it a viable solution for the power sector.

Keyword: Biometric, Electric Pole, Internet of Things (IOT)