摘 要

本设计根据传统独立光伏发电系统的优缺点进行改进，在不同工作环境、不同光照条件下设计相应的应对措施，理清现有的光伏发电系统的种类，根据设计所需选取最适合的类型，满足成本低、用途广、使用方便等优势。对独立式光伏发电系统进行深入了解并设计

该系统选用的设计类型是最小型离网式光伏发电系统，对器件的选型颇为缜密。系统围绕着太阳能电池，接入控制器、逆变器、继电器等元器件，完善系统功能，系统自我保护能力也十分可观。在详细分析系统的前提下设计软件、硬件，结合光伏发电软件以及项目需要，为相应的组件配置适应的参数，实现独立光伏发电系统的设计与仿真，对提高独立光伏发电系统的可靠性、稳定性以及实用性等方面有着显著提升。

关键词：最小型；优化设计；实用性

Abstract

According to the advantages and disadvantages of the traditional independent photovoltaic power generation system, the design of the corresponding measures under different working environment and different lighting conditions, sort out the types of the existing photovoltaic power generation system, select the most suitable type according to the design requirements, to meet the advantages of low cost, wide use and convenient use. In depth understanding and design of independent photovoltaic power generation system

The design type of the system is the smallest off grid photovoltaic power generation system, and the selection of devices is quite meticulous. The system is surrounded by solar cells, connected to controllers, inverters, relays and other components, and improved the system functions. The self-protection ability of the system is also considerable. On the premise of detailed analysis of the system, the design of software and hardware, combined with photovoltaic power generation software and project needs, configure appropriate parameters for the corresponding components, realize the design and Simulation of the independent photovoltaic power generation system, and significantly improve the reliability, stability and practicability of the independent photovoltaic power generation system.

Key words: miniaturization; optimal design; practicability