Photovoltaic DC Microgrid System

Abstract: The increasing prominence of DC microgrids (MGs) in modern power systems necessitates effective power control and management frameworks, particularly for integrating ...

In this article, an operation mode and power regulation strategy for multi-PV islanded DC microgrid based on two-layer fuzzy control are proposed to address the challenges in conventional ...

In recent years, researchers" focus has shifted to DC-based microgrids as a better and more feasible solution for meeting local loads at the consumer level while complementing a given ...

In this paper, the photovoltaic-based DC microgrid (PVDCM) system is designed, which is composed of a solar power system and a battery connected to the common bus via a boost ...

To improve the voltage regulation in the system, this paper proposes a Model reference adaptive controller (MRAC) designed with MIT (Massachusetts Institute of Technology) rule. MRAC ...

In this paper, we introduce a proposed microgrid system with three different energy sources LIB, PV array, and fuel cells, and controlled using a MPPT controller. The three different energy sources are ...

With the rapid development of renewable energy, photovoltaic (PV) energy storage hybrid DC microgrids have become a research hotspot due to their high efficiency and flexibility. To address issues such ...

To test the feasibility of the system, we have developed a demonstration facility consisting of silicon photovoltaic (Si-PV) units, copper indium gallium (di)selenide photovoltaic (CIGS-PV) units, ...

The goal is to maintain a constant DC-link voltage while balancing demand and supply. The study establishes a hybrid control approach for a DC microgrid involving PV, BESS, and DC ...

Web: https://mhlengwesecurityservices.co.za