Solar inverter based on improved PR control

This paper introduces a robust and adaptive control framework that integrates a Proportional-Integral-Derivative (PID) controller with the bio-inspired Grey Wolf Optimization (GWO) algorithm...

The study presents an innovative dynamic voltage restorer (DVR) using two control strategies--sliding mode control (SMC) and proportional resonance (PR)--to enhance power quality in on ...

This study presents a modified proportional-resonant (M-PR) control topology for single-stage photovoltaic (PV) system, operating both in grid-connected and stand-alone modes.

This article introduces a PR control-based approach integrated into the Boost converter''s current loop, offering a simple yet effective solution for harmonic suppression in the single-phase inverter.

This paper applies an adaptive method for regulating the proportional resonance (PR) controller for frequency and phase synchronization in 500 kW photovoltaic g

Figure 6 illustrates the proposed inverter control system utilizing the Firefly algorithm, which optimizes PI and PR controller parameters by minimizing errors between current controllers and voltage ...

To achieve improved precision in control and enhanced quality in the output waveform of the inverters, this article presents a single-phase photovoltaic inverter designed for both grid-connected...

The single-phase inverter with PR controller is modeled and simulated as per the design calculation. The inverter power switches are triggered by unipolar PWM pulses generated by the PR controller block.

This paper proposes the modelling of PR (proportional resonant) controller for a grid connected single phase inverter and observation of its performance during load fluctuation condition.

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This study proposes an integrated control-optimization framework for harmonic mitigation in two-level, grid-connected inverters with battery energy storage operating under unbalanced grid conditions.

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