

This thesis presents controller designs of a 2 kVA single-phase inverter for photovoltaic (PV) applications. The demand for better controller designs is constantly rising as the renewable ...

This paper presents a new grid-forming controller which considers the PV source dynamics and limitations and maintains dc-link stability under transient and overload conditions.

By embedding intelligent metaheuristic optimization into a classical PID framework, this work advances the state of inverter control strategies for PV systems.

Hence, by considering the limitations of the dc-link and the dc source behind the inverter, the proposed controller proves to be more suitable to connect a PV source with a dispatchable grid-forming ...

It discusses VSI and its control techniques, including using proportional-integral control loops and pulse width modulation to regulate grid current and DC link voltage for power conditioning and grid ...

This paper presents a systematic design methodology to tune the gains of the PI-based DC-link voltage controller so that the DC-link voltage fluctuations as well as the grid current THD are ...

In this paper, a control technique for a photovoltaic system connected to the grid based on digital pulse-width modulation (DSPWM) which can synchronize a sinusoidal output current with a ...

This paper presents a hierarchical control scheme for voltage controlled photovoltaic (PV) inverters with unbalanced and nonlinear loads in micro-grids. The hierarchical control consists of primary control, ...

This reference design implements single-phase inverter (DC/AC) control using a C2000™ microcontroller (MCU). The design supports two modes of operation for the inverter: a voltage source ...

The two-stage, grid-connected PV inverter controls the DC link voltage (front stage) and the inverter circuit PWM (backstage), and adds a control loop for the bus voltage in the front stage.



PV inverter DC control loop

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