HYBRID PHOTOVOLTAIC INVERTER FOR SMART GRIDS

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ABSTRACT

This paper describes a bidirectional solar-battery-grid inverter, its principle and features as well as control functions and recent semiconductors which are used. The device is designed for smart grid applications, where the operator decides about a power and its direction for each active device. Our inverter is able to supply power grid by power and phase shift which are defined by superior logic. Or it can take required amount of power from the grid and store it in battery. Stored energy is used later for covering deficiency of solar energy. Solar cells are efficiently driven by MPP tracker and power balancing function ensures maximal usage of all sources.