

Experimental Results of Photovoltaic Emulator Systems

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Abstract—In this paper, we present experimental results of photovoltaic (PV) emulator systems implemented in a low-cost microcontroller. The insufficiency of space for installation of real PV panels and the high costs of the commercial emulators require of alternative systems which allow the generation of the characteristic curves of the solar panels. Irradiance and temperature can be set on the emulator to emulate the behavior of a PV panel. The implementation methodology and their effects on the PV output are performed and discussed in detail for each scheme of PV emulator system.

Index Terms—PV Emulator; low cost; implementation; microcontroller; PV panel.

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