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Study and Development of a Photovoltaic Panel Simulator

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | The rising cost of conventional energy sources and their environmental impact requires the implementation of renewable energies such the photovoltaic energy, which had increased exponentially in the last years. Thus, it is important to develop emulators that allow the testing and improving these systems. The motivation corresponds to the need for a simulator able to test PV inverters and their MPPT algorithms in conditions near to real-time. During the work to prepare the dissertation, various topics regarding the photovoltaic panel, LabVIEW programming and programmable power supply were addressed. In particular, is presented the theoretical basis of the elements involved and then deal with the programming and application development that will control the simulator. Through this, it became possible to build a test platform that allowed emulate one solar panel. The simulator calculates the voltage-current characteristic curve through the construction details of the panel, solar radiation levels and temperature. Likewise, the application provides other useful information such as the power developed at any time, the fill factor, or its efficiency in a given area. | Format: Paperback | Language/Sprache: english | 68 pp.



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