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Solar-Wind Hybrid Power Generation Systems with PIC controller based Battery charging Module

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Abstract : Due to intermittent natural energy resources and energy resources seasonal un-balance, a Solar-wind hybrid electrical power supply system was developed for many remote locations where a conventional grid connection is inconvenient or expensive. Hybrid power system can be used to reduce energy storage requirements. This paper deals with the detailed of a hybrid model of a solar - wind, which is using battery as its storage system with the PIC controller based charging module. It comprises photovoltaic array, wind turbine, Stepper motor, controller, lead-acid storage batteries, and an inverter unit to convert DC power to AC power. The perfect solution is to combine these two forms of energy sources to create a constant energy flow. Main objective of this paper is to study and implement feasibility of stand-alone solar-wind hybrid power system and to maximize use of renewable energy generation system while minimizing the total system cost.