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Design and Implementation of Arduino Based Control of Solar Powered DC Motor Pump Load

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Abstract : An investigation into the design of a stand-alone Photo Voltaic (PV) water pumping system for supplying rural areas is presented. The work is about increasing energy extraction by improving maximum power point tracking (MPPT) to provide continuous water supply to their needs. The PV source output power and the speed of the DC pump motor are used as input variables. Arduino controller is used for generating the signal and the relay to operate. MPPT technique is used for the maximum power generation with respect to atmospheric condition. By this technique, maximum power is obtained for the process and also for battery storage. Thus there is no need to depend on other sources. MPPT technique extracts maximum power with faster dynamic response and also eliminates oscillations around the MPP under steady-state conditions and it is a suitable optimization tool for locating MPP regardless of atmospheric variations This work enhances the usage of renewable energy to perform energy saving and to reduce the pollutions created by some other resources.

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