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Design and implementation of a low-cost turbidity monitoring system

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This thesis deals with the design and fabrication of simple but efficient photovoltaic water pumping system. It provides theoretical and practical studies of photovoltaic water pump and modeling techniques using equivalent electric circuits. The thesis decides on the output sensing direct control method because it requires fewer sensors. This allows a lower cost system. The whole system contains solar panel, solar controller, power storage battery, DC motor and a positive displacement pump. We prefer to utilize a screw type positive displacement pump in the system. Every device of the system has been discussed in a separate chapter of this thesis in detail, which provides a proper guidance about the whole system. In locations where electricity is not available, other needs of necessary to pump water for consumption; one option is of photovoltaic (PV) pumping system. Advantages of PV pumping system includes low operating cost, un-attended operation, low maintenances, easy installation and long life. These are all important in remote locations where electricity is unavailable and are not sufficient according to the needs. So far the development of these projects focuses to estimate the availability of sun light radiation at a particular location or remote areas on the earth surface and then analyze the characteristics of photo voltaic panel, photo voltaic network, Dc Motor and Dc Water Pump. The purpose of this project is to examine all the necessary steps and key components needed to design and fabrication of solar water pump.

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