Abstract

Title : Performance evaluation of solar pump
Researcher : Mr.Thewan Yang-ngam
Mr.Sookkasem Parisake
Ms.Supatip Arunsri
Degree : Bachelor of Engineering
Major : Mechanical Engineering
Advisors : Assistant Professor Umphisak Teeboonma, Ph.D
Co-advisor : Assistant Professor Sirivit Taechajedcadarungsri, Ph.D

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The objective of this project is to study the concept design and performance evaluation of solar pumping systems. The design condition of solar pumping system is pumping rate not less than 5 cubic meters per hour at the depth well of 30 meters. To evaluate the performance of solar pumping system, the following parameters are investigated: pumping rate per day, solar cell performance, pump performance and system efficiency. The solar pumping systems are tested in both direct and alternating current pumps. The study result of solar pumping design showed that peak power of solar panels and power of pump should be ranging of 2,000-2,500 watts and 1,000-1,500 watts, respectively. In case of performance evaluation, it was revealed that solar radiation affects significantly on the rate of pumping per day, solar cell performance, pump performance and system efficiency. Moreover, it was found that the performance of solar pumping system using the direct current pump is higher than that using alternating current pump.