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Solar power management with super capacitor in GSM network monitoring application system

Alvin T Dela Pena

Colegio de San Juan de Letran–Bataan, Philippines

The researchers gathered data regarding the electric bill consumption for the last two years where there was an increase in the population of high school students. The data showed that in every 15% increase in the student's population, there is 20% increase in the electric bill consumption rate. Considering the number of consumers using computers, laboratory facilities, mobile phones and other electronic gadgets had been the factors to proliferate the electric bill consumption. This has led the researchers to conduct a study in creating a charging device harnessing solar energy which is an alternative source of direct current electrical energy; two hardware designs were developed in building a solar to electrical energy harnessing device, such as the installation of an IRF520 MOSFET driver module with a DC to DC boost converter and a relay module board. The study concluded that the installation of a relay module board is the best alternative, for it is the most practical design to sustain the current control of the charge building up within the device. The charging unit that uses the super capacitors maximized the charging time into an average of 86.444 minutes compared to the existing design that has twice of its charging time condition in equivalence of three hours. The researchers recommended that the Colegio de San Juan de Letran, Bataan should implement the installation of this project study, or another study on improving the hardware design components of the system which can be extended to the employees and students of the institution.

atdelapena@letranbataan.edu.ph