

## عنوان مقاله:

Design and Implementation of a Low-Cost Photovoltaic Traffic Light Signal System

## محل انتشار:

پانزدهمین کنفرانس دانشجویی مهندسی برق ایران (سال: 1391)

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## خلاصه مقاله:

Power failures in roads and intersections can cause serious difficulties and dangers due to non-availability of traffic light signals. Recently, use of solar energy has been increased to power-up the traffic light signals all over the world. This paper proposes the use of solar energy in powering traffic signal systems for rural areas with no power grid. A photovoltaic system is used to capture the energy. Three students were involved in this educational project. The implemented system is simple, low-cost and free-maintenance. The nominal output voltage of the employed solar cell is 12volts. Captured solar energy is saved into a 12 volts lead-acid battery. Instead of dc-dc converters, a circuit including IC regulator is used to control the flow of charge through the battery. Timing of the traffic light is carried out via AVR microcontroller. Experimental results for different angles of radiation at different times of the day are also shown in this paper.

## کلمات کلیدی:

solar cell, traffic signal light, photovoltaic, lead-acid battery, voltage regulation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/170937>

