Alternate Vehicular Traffic Direction System Utilizing Solar Energy, Phase II

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This work is the second phase of an alternate vehicular traffic direction system using solar energy. The projections identified during the first phase of the project were incorporated in the new design. This system can be used as an alternate system to direct the traffic in the case of lack of electricity. The design was made in PVC (polymerizing vinyl chloride), real size and portable. The solar panel was changed by a monocrystalline panel, a charge controller and a 12V sealed lead acid battery. The lights were changed by an arrow shape design in PCB (printed circuit board) with LEDs diode lights due its low consumption. The system has 24 lights organized as an arrow which are connected to a board with 24 transistor and 24 resistors connected to the 12 port of the Arduino mega. The programming was done with the Arduino program giving a specific time to each color. The color pattern for the direction of traffic is green, yellow and red like a normal traffic light. As part of the research process, the time it took to charge the battery using solar energy and its consumption during the night were measured. The data indicates that the system can charge during the day in about 11 hours, even if it is cloudy and therefore can remain on at night. In addition, in the future this traffic system would be very useful and be an alternative to direct traffic in the absence of electricity.

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