Design And Implementation Of Biomedical Solar Autoclave

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To protect the environment from pollution the solar energy used as alternative source of energy. Solar energy is considered clean, economic and sustainable source of energy. In this project it was hired in building biomedical autoclave(Autoclave is important device used to sterilize medical tools to prevent infection.) by using photo-voltaic cell to accomplish sterilization process under 2 bar steam pressure at temperature of 120 within 15 minutes. The output of the PV-cell is a constant current, this current will be used to charge a two series 12Vdc batteries. Charger-controller is utilized to control the charging and discharging cycles of the series batteries. After some calculations and experiments it is found that this project needs one photo-voltaic cell to operate the device.

A solar autoclave is an autoclave working on solar system that uses sun's radiations to operate the device , by using photo-voltaic cell which used to convert solar energy to electrical energy (dc).the device needed Several control parameters: pressure control, temperature controller, quantity of water by using timer to control flowing 0.25ml into the autoclave chamber, and period of time which controlled by using another timer for controlling the period of sterilization process within 15 minutes .

This device will be used for ambulatory dental clinic or ambulances or when electricity is interrupted. The sterilization is a vital factor in health care sectors and institutions (laboratories, operating rooms and others).

The device has been experienced and it gives the desired results.