Abstract:
In the modern era demand for energy is growing gradually, but the sources are limited to provide that much energy. To convince the increasing demand for energy, new sources are needed to be found and take the renewable energy in the count as source and allocate the efficiently. This paper aims to reduce the usage of grid electricity by proposing a solar photovoltaic (PV)-based smart metering system. The system consists of solar dc power which can be converted into ac power by using grid inverter. Both grid and solar supply information will be given to the microcontroller and supply will be selected automatically according to the requirement of the appliances. Finally, voltage, current and power consumption parameters will be displayed on an LCD monitor and controlled using GSM module.

Keywords: Electricity generation, smart metering system, renewable energy, microcontroller, GSM module