## A NOVEL CONTROLLER FOR BIOMASS BASED HYBRID POWER SYSTEM

## SHANTHARAMA RAI C., SHREESHA C AND UDAYA KUMAR R. Y.

## Abstract

This paper presents a Novel Controller for a newly developed biomass based modular hybrid power system with an interconnected Photovoltaic generator consisting of Maximum Power Point Tracking (MPPT) system. Here the Alternator produces constant output voltage irrespective load by the use of a Microcontroller based feedback circuit. Here the IC Engine is used to drive the alternator, which is used to generate the electricity from biomass. The feedback circuit controls the throttle valve opening of the IC engine through stepper motor. The MPPT has a newly developed converter consisting of a fly back transformer for high frequency linkage and synchronous switches for connection to the AC grid line without a current sensor along with mechanical solar panel tracker. The mechanical panel tracker uses Light Dependent Resistor (LDR)\_sensors, which sense the position of the sun. The sensor output is fed to comparators and the resulting error signal is input to the micro-controller, which drives the stepper motor accordingly to enable the tracking of the panel to get the maximum intensity of the sun's rays falling on it.

**Keywords:** Maximum Power Point Tracking, Controller, Light Dependent Resistor (LDR) sensors, fly back transformer