Abstract

Energy is a basic requirement for economic development of a nation. On the other hand, the rising price of conventional energy along with the gap between demand and supply has been a major concern in most of the developing countries, particularly in India. In this context, renewable energy sources can play a vital role in meeting the future energy demand. Also, among all the renewable energy sources, solar and wind energy have emerged worldwide as the most focused ones due to their availability, free of cost, omnipresence and eco-friendly nature. However, availability of both theses sources is suffered from temporal and/or geographic variations. An efficient hybrid system can reduce the effect of these variations on the desired output to some extent. In this work, an attempt has been made to use the solar PV module and wind turbine generator in hybrid mode for the purpose of multiple battery charging. The necessary signal conditioning and control circuits have been designed and fabricated and the performance of component circuits as well as the complete system is investigated.