

ENERGY STORAGE SYSTEM AND METHOD TO IMPROVE BATTERY PERFORMANCE BY BATTERY CONNECTION METHOD

ABSTRACT

Two or more batteries may be in a switching para-series circuit arrangement where a set of batteries are connected, in both parallel and series arrangement in two independent phases, using fast switching devices, where the output to the load is the average voltage based on the duty cycles. Renewable energy power source such as solar panels may be coupled with batteries in parallel connection in a first phase and the same batteries connected in series to the load in a second phase, using transistor switches that, first, enables simultaneous charging and discharging of the batteries, and second, enables voltage shifting from the solar panel, as the additional batteries in series provide the required voltage to the load and where the duty cycles of charging and discharging is adjustable to convert the voltage waveform.

[FIG. 1A, 1B]