

## A Study on Energy Efficiency of Vertical Water Treatment System with DC Power Supply

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**Abstract :** Water supply system consumes large amount of power load during water treatment and transportation of purified water. Many energy conserving high efficiency materials such as DC motor and LED light have recently been introduced to water supply system for energy conservation. This paper performed empirical analysis on BLDC, AC motors, and comparatively analyzed the change in power according to DC power supply ratio in order to conserve energy of a next-generation water treatment system called vertical water treatment system. In addition, a DC distribution system linked with photovoltaic generation was simulated to analyze the energy conserving effect of DC load.

**Keywords :** vertical water treatment system, DC power supply, energy efficiency, BLDC

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