Development of Energy Storage System for Roadway Generator Machinery

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ABSTRACT

In recent years, the rapid development of technology makes the human demand for energy is increasing, resulting in the rapid consumption of the global oil inventories, also we will face three major issues in the future: energy, climate and ecological imbalance caused by the food crisis. Therefore, save energy, reduce pollution and develop alternative energy sources has become essential. It also attaches great importance to the world organization for renewable energy research. For renewable energy research, we focus on solar, hydro, wind and biomass energy. For sustainable development, we should actively develop diversified renewable energy, according to statistics, there are 800 million vehicles a day in a variety of highway, if we can use some kind of highway power installations, with the appropriate energy storage system design, is expected to be able to develop another effective and innovative green renewable energy. The development of Chinese green energy company based on roads generating device, the energy measurement platform for the design of power devices and energy storage system developed. Measurement platform can get the energy generated by the vehicle passes through the power installations, energy storage system of the device generators of electricity stored in the battery, the power required to supply street lights. Generating device of this road is set in a road, through traffic on this road device, to convert kinetic energy into electrical energy, this energy is an intermittent supply, causing the generator to produce electrical energy for a change in sexual power, power generation device is set in a road, through traffic device convert kinetic energy into electrical energy, this energy is an intermittent supply, causing the generator to produce electrical energy for a change in sexual power, so must be based on this feature whole new set of energy storage system. The key technology of this system is based on the current condition of the battery charging different, individual characteristics of the battery in the battery pack, will inevitably lead to a power imbalance, causing part of the battery from overcharging or excessive discharge, and even shorten the life of the battery, resulting in overall decreased system reliability, it is to design a special charge distribution unit, modular initiative to balance the charge control method to improve system performance. This article will use the microcomputer as the core of the control and operation, at any time adjust the rate of conduction of the power switching elements based on the condition of the battery to achieve the purpose of energy storage and energy balance of the battery pack. Finally, by experiments and tests of the actual road, the actual verification of the effectiveness of highway energy storage system developed in this paper.

Keywords: renewable energy, road generating system, green energy technology, battery energy storage system

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