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(54) **APPARATUS AND METHOD FOR CONTROLLING OPERATION OF SECONDARY BATTERY USING RELATIVE DETERIORATION DEGREE OF ELECTRODE**

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ABSTRACT

Disclosed is an apparatus and method for controlling an operation of a secondary battery using a relative deterioration degree of an electrode. The method includes determining a SOC of the secondary battery whenever a pulse current flows through the secondary battery; determining an electrochemical reaction resistance from a voltage change amount measured during a preset initial time in each pulse current section and determining a lithium ion diffusion resistance from a voltage change amount measured during a remaining time except for the initial time; determining a deterioration-biased electrode by comparing a deterioration diagnosing resistance ratio, which is a relative ratio of the lithium ion diffusion resistance to the electrochemical reaction resistance, with a preset reference deterioration diagnosing resistance ratio; and adaptively adjusting an operation condition of a next charging/discharging cycle according to the type of the deterioration-biased electrode.

