

A Numerical Study on the Detailed knowledge-based toolkit for Characterization of Ni-MH Battery using Multi-Regression Analysis – MRA

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ABSTRACT

A numerical study is given during this paper to look at the dynamic behavior for the elaborate characterization of commercially offered Ni-MH battery. within the gift study, a unique Multi-Regression Analysis (MRA) based mostly model for the D-size HHR650D battery from panasonic is adopted to determine the charge and discharge characteristics along side its SoC estimation. element gas formation at the atomic number 28 conductor throughout charging and overcharging that affects the pressure variations within the battery is crucial to be analyzed for its characterization. Henceforth, the impact of battery charging conditions over the pressure and temperature variations square measure thought of within the developed MRA model and therefore the corresponding performance profiles subjected to repeated load cycles square measure reportable. Model validation of the steady state behavior is performed supported the benchmark information obtained from a vi.5Ah, 1.2V Nickel-Metal binary compound battery. As international fuel reserves consume whereas the discharge of greenhouse waste matter gases into the atmosphere and therefore the fuel costs hugely will increase, there's a necessity for the researchers to produce applicable solutions for a property transportation strategies rather than ICE based mostly propulsion systems. the sole thanks to eliminate the dependency of oil and crude consumption is thru electrification [1] thereby, it's wise and reliable for each environmental position and economy within the gift study, a unique Multi-Regression Analysis (MLRA) model is planned for the elaborate characterization of a vi.5Ah, 1.2V Ni-MH battery to research its dynamic behavior.

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