**Design and analysis of Salt water battery**

**ABSTRACT**

Thermal management in an electric vehicle is important to extend the life of the battery. This paper is about modelling and analysis of a salt water battery module for improving the thermal performance battery in electric vehicles with PCMs (phase change materials). For a battery thermal management system, we considered phase change materials such as Sodium acetate trihydrate (CH3COONa·3H2O), Stearic acid, and Magnesium Nitrate + Magnesium chloride hexahydrate (Mg(NO3)2·6H2O + MgCl2·6H2O) as different thermal properties. The salt water battery was designed and simulation analysis was performed with three different PCMs to enhance heat transfer rate. The simulation and experiment results on a single battery were satisfied to control the battery temperature within the safe operating conditions. Hence the proposed battery thermal management system (BTMS) was applied on a battery pack. The design of the battery module was done in CATIA and analysis was done in ANSYS workbench software tool.

Keywords : salt water, battery, ansys, thermal, electric vehicle, module

Price: 7500/-