電動機車串聯鋰電池平衡管理系統之研究 = Study of series connected lithium-ion batteries balance management system for ele

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摘 要

本文探討串聯鋰電池組作為電動機車之動力來源特性分析，電池之間充放電特性與老化程度的不相同，使用次數增加，導致電量不平衡，造成過度充電(Over Charge)或過度放電(Over Discharge)，因而無法充分利用電池的蓄電能力，甚至縮短電池的壽命，影響到殘電量偵測準確性。 為了提高串聯電池壽命與殘電量估測的精準度，本研究分成二個研究方向：⑴鋰電池性能檢測實驗平台，進行不同放電條件與環境溫度，電池進行充放電過程資料記錄分析，建構鋰鐵電池性能資料庫，作為電池電容量評估。⑵發展串聯電池平衡機制，以四顆鋰鐵電池串聯運行組成平衡電路模組，經前述模組串成四組形成十六顆電池串聯鋰鐵電池組，經由平衡模組，使每顆電池擁有均等電量。 最後，透過一連串的實驗證明本論文所提的電池平衡技術是有效的。

關鍵詞 : 電動機車、鋰電池、殘電量、串聯電池平衡

目錄

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