並聯式液壓混合動力車節能控制策略開發

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摘 要

混合動力車是汽車工業中一種新型技術，其中液壓混合動力車相關液壓設備和技術的研發正廣泛地興起，液壓混合動力車具有其他種混合動力系統所沒有的優勢：高功率密度、不易起火爆炸、 輕量化…等等。但也有一些劣勢：低能量密度、無法像電動車一般預先充電…等等。在改善油耗和環保價值方面是一項不錯的新興技術。 本研究中將利用商用軟體MATLAB下的Simulink環境，尤其是SimScape工具列來發展並聯式液壓混合動力系統模型，系統中包含車體、油箱蓄壓器、液壓泵浦、液壓馬達及引擎等重要關鍵元件。 根據回收後可用之液壓能以及引擎提供之動能提出一套能量管理方法，以評估車輛加裝液壓混合動力系統後平均油耗改善之表現，本研究中並建立並聯式液壓混合動力車油耗控制策略，以多種不同城 市道路行駛駕駛循環進行分析，模擬結果顯示本研究之並聯式混合動力系統對車輛油耗方面能有顯著的改善

關鍵詞 : 並聯式液壓混合動力車輛、內燃機、蓄壓器、泵浦/馬達、PHHV模擬、PHHV油耗控制策略

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