

# 永磁直流無刷馬達無感測控制技術之研究

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## 摘要

本文提出無刷直流馬達(BLDC)偵測反電動勢的架構，發展結合類比與數位控制的無感測控制技術。控制核心採用Microchip公司所生產之單晶片PIC16F877，作為無感測控制IC，並且整合無感測控制技術及馬達驅動功率模組設計之關鍵技術。在馬達靜止時偵測轉子之初始位置，依啟動程序使馬達以較低的開環速度運轉，隨後加速到某一特定的轉速值；當反電動勢大小足以提供無感測演算法正確的估測轉子位置時，即切換至無感測驅動模式，不需要額外的位置感測器，可降低成本。實驗結果驗證所提出方法之可行性。

關鍵詞：無刷直流馬達(BLDC)、反電動勢、無感測控制、馬達控制晶片、馬達驅動功率模組

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