表面聲波元件應用在扭力感測器之製作測試與分析

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摘 要

利用表面聲波技術來製作感測器，近年來已被廣泛應用及研究，由於表面聲波元件本身特性的優勢，無論在氣體、液體、或是生物方面的檢測都已有相當多的研究成果以及產品。

本篇研究先從表面聲波感測器本身做瞭解，再經由軟體來模擬設計微帶線電路，由於表面聲波元件屬於高頻元件，故在電路設計上，需注意阻抗是否有匹配，否則訊號以耦合天線傳遞時，會衰減以致於無法清楚判別，完成感測器本體後再使用應變規做應變/頻率飄移的測試並做有線式與非接觸式的性能測試。

未來可由詢答系統取代網路分析儀，利用掃頻的方式來得知中心頻率的漂移程度，接著利用A/D卡或數位信號處理晶片來擷取詢答系統處理完的訊號，利用曲線擬合可得知感測量的資訊。

關鍵詞 : 表面聲波元件、扭力感測器

目錄

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