微型壓力感測器之設計與製作

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摘 要

中文摘要　本文目的乃於應用微機電製程技術之表面微細加工技術製作成可撓式微型壓阻式壓力感測器。微型感測器除了較一般傳統感測器有更小的體積外，也因其尺寸的微型化而更易達到精密的量測與較佳的靈敏度。而不管是何種元件在與量測電路或儀器作整合時，微小的尺寸更易達到良好的整合與方便的攜帶性。本研究是利用沉積一層白金做為感測層，而金則是做為導線，再利用聚醯亞胺(polyimide)進行上下的保護層，而基底利用鑽數個不同孔徑大小的PDMS軟墊,在量測上，藉由不同砝碼的重量及不同孔徑的大小，觀察到的電阻值及靈敏度都有所不同。本研究之實驗結果顯示孔徑和重量越大所量到的電阻值越大，利用同一組砝碼重量及不同孔徑所量測的數據，觀察其靈敏度，發現孔徑越小靈敏度越小，孔徑越大靈敏度越大，故以簡單的構造與材料之特性即可達到量測壓力的效果。 關鍵字 : 聚醯亞胺，壓力感測器，PDMS，微機電系統

關鍵詞 : 關鍵字 : 聚醯亞胺，壓力感測器，PDMS，微機電系統

目錄

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