MFC 智慧型貼片應用於三明治蜂巢平板的振動控制

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摘 要

本論文是使用MFC壓電致動器作為振動控制元件，應用主動式速度回饋控制，並且用理論分析與實驗驗證MFC壓電致動器的控制效率。結構的振動抑制和噪音削減技術，從早期的被動式阻尼層，到近年來使用不同的智慧型材料作為感測器和致動器，並結合不同的控制原理，形成所謂的主動式控制。現今為了提升控制系統的效率、穩定性和可適性，而發展出主被動(混合式)技術。如何針對不同的系統應用，採取適當的控制，將是研究的方向。

本論文進行多模態振動控制則是將MFC壓電致動器當成致動器，用較少的致動器與感測器來控制一個寬頻的振動包括：⑴如何決定最佳的感測器和致動器的位置；⑵如何使用做少的能量來達到最大效果的控制；⑶如何選擇控制方法和控制方法穩定性、自我調整能力和對外界影響的調適性等。以上問題皆為從事消除或抑制結構的振動與噪音的學者重要研究領域。

關鍵詞 : 阻尼層、智慧型、致動器、三明治、穩定性

目錄

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