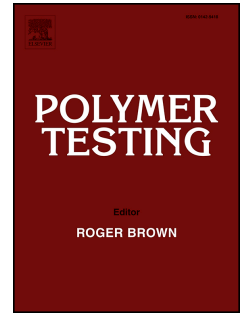


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**Experimental and numerical study on the modal characteristics of  
hybrid carbon fiber composite foam filled corrugated sandwich  
cylindrical panels**

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**Abstract**

To further improve the vibration damping behavior of carbon fiber composite sandwich structures without too much redundant weight, empty and foam filled corrugated sandwich cylindrical panels (CSCPs) are designed and their corresponding modal characteristics are investigated experimentally and numerically. Axial and circular CSCPs (ACSCPs and CCSCPs) are simultaneously manufactured by a hot press moulding and post-assembly approach. It has been demonstrated that foam filled CSCPs can obviously improve the structural damping compared to the empty CSCPs without significant change of the corresponding natural frequencies. Furthermore, validated finite element analysis (FEA) models are adopted to systematically study the effects of the corrugated inclination angle, sandwich core thickness, arc-length and

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