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Experimental Investigations on high frequency thermoacoustic engine useful for driving a pulse tube cooler

Content :

Thermoacoustic technology has been the area of interest in recent years due to its structural simplicity, high reliability, ability to use low grade heat, no moving components etc. One of its many application is thermoacoustic engine (TAE) driven pulse tube cooler (PTC). There has been lot of work going on in this area and much advancement has been achieved. Performance of this combine system depends on the ability of TAE to produce effective acoustic power in terms of pressure amplitude. In Current work, investigations are carried out on various components of TAE to improve its performance and to study the effect of parameters like stack, stack length and stack position on the performance of TAE which is to be used for driving PTC. Experiments with different cold heat exchangers are also carried out. This study may help in deciding certain aspects of TAE so that the whole system becomes more efficient.

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