

Abstract

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m. a. teamah, m.m. khairat dawoodw. m. el-maghlany "thermoacoustic refrigeration in different gases for different frequencies" alexandria eng. journal vol. (48) no. 3, pp 333-340 (2009).

thermoacoustic refrigerator is a device that transfers heat from a cold medium to warm medium by using sound energy as an input work. this investigation deals with the constructionperformance of the thermoacoustic refrigerator. three different gases of air, nitrogenhelium were used as working fluids in the resonance tube. the experiments were performed at different frequencies 300, 400, 500600 hz. the length of the tube was typically a half wavelength of the driving frequency. the position of the stack was studied experimentallyoptimized for maximum temperature difference for different gases at different frequencies. it is observed that the helium gives the highest temperature difference as it has the highest sound speed. the experimental results were compared with previous published resultsshowed satisfactory agreement. © faculty of engineering alexandria university, egypt.