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Investigation of Inertance Phase Shifting Characteristics in Small Scale Pulse Tube Cryocooler

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Phase shifting characteristics of inertance tube in small scale pulse tube cryocooler are investigated experimentally. It was found that the length of inertance tube whose diameter is 1mm has a more significant influence on the optimal frequency of the pulse tube cryocooler than the inertance tube with diameter 3mm. The performances of the pulse tube at each optimal frequency is not significantly affected when the length of inertance tubes with 1mm diameter and 3mm diameter is changed .
The compressor dynamic behavior as influenced by the inertance tube is investigated too. It was found that in the case of the best performance of the cryocooler dynamic behavior of the compressor is more sensitive to the length of the inertance tube.

Primary authors: Dr CHEN, Houlei (Technical Institute of Physics and Chemistry, CAS, China); Prof. CAI, Jinghui (Technical Institute of Physics and Chemistry, CAS, China); Mr TANG, Qingjun (Technical Institute of Physics and Chemistry, CAS, China)

Presenter: Dr CHEN, Houlei (Technical Institute of Physics and Chemistry, CAS, China)

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