
Prospects of using vortex devices in cryogenics

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The study focuses on the problems of using low-consumption low-temperature machine-less apparatuses. We give examples of using gas-dynamic coolers in technologies for extracting rare gases and show, in particular, that a decrease in the phase equilibrium temperature of the mixture during the purification of Ne-He-concentrate from nitrogen makes it possible to halve the presence of the secondary component at the exit from the phase separator. In this case, this positive effect is achieved by using the existing pressure difference, which eliminates the need for additional energy costs.

Keywords: cryogenic engineering, rare gases, gas-dynamic cooler, vortex tube

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