
Rankine cycle with low-potential heat source

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The article justifies the selection of the organic Rankine cycle for waste-heat recovery. An algorithm for calculating the useful work in installations where the temperature of the heating source is about 100 °C and the actual efficiency of the cycle is about 7 % is presented. Different working media has been analyzed. The particular attention has been paid to the selection of the expander. The possibility of using radial and axial turbomachinery, rotor, piston, plate and spiral expanders is considered. The spiral expander is regarded as preferable, because it has a number of advantages, such as the absence of valves, the possibility of full equilibration, compactness, long service life. Several options for the use of the Rankine cycle has been analyzed, the prospects of further research are outlined.

Keywords: organic Rankine cycle, Rankine cycle, waste-heat recovery

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