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Waste Heat Recovery by Fluid Power System

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Abstract: *Waste heat recovery is a great way to increase energy efficiency in industrial and automotive regions through fluid power systems. This technique changes the heat to be ruined in useful energy, such as electricity or mechanical power. This paper discusses the principles and analysis of fluid power systems such as Organic Rankine Cycle (ORC), Rankine Cycle, and Hydraulic Systems. These systems can give 20–30% thermal efficiency and 50–70% heat recovery rate. They have applications in industrial furnaces, automotive exhaust, and power plants. However, there are challenges such as high cost and complexity of the system. Based on the research of 2018–2025, this paper suggests that advanced materials and AI optimization are solving these problems. In the future, these technology will take energy conservation and sustainability to new heights.*

Keywords: Waste heat recovery

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