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Working Fluid Selection for Organic Rankine Cycle and Other Related Cycles

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Message from the Guest Editor

During the last few decades, power generation from low-temperature heat sources (below 300 °C) like thermal solar, geothermal, biomass, or waste heat has become more and more significant. Since the traditional Rankine cycle using water as working fluid cannot be used with sufficient efficiency at low temperatures, the need to find novel working fluids for organic Rankine cycles or for similar, less frequently used, thermodynamic cycles (like Trilateral Flash Cycles) has become a priority.

Traditionally, the working fluid for a given ORC process is selected using a trial-and-error procedure through experience from chemically similar materials. This way, however, one might risk excluding novel, previously unused, working fluids, which could be more suitable for the given heat source than any of the traditional ones. In this Special Issue, more sophisticated methods will be presented, using optimization models, thermodynamic analyses, equation-of-state parameters, and molecular properties. The aim is to present a reliable source for researchers and innovators/developers working on ORC-related fields to help them to find the proper working fluid for any given heat source.



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Message from the Editor-in-Chief

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