

System and method for using Organic Rankine Cycle to recover electrolyte waste heat for electricity generation

Abstract

Disclosed in the present invention are a system and method for using an Organic Rankine Cycle to recover electrolyte waste heat for electricity generation. The system comprises at least one electrolyte cycle loop and at least one Organic Rankine Cycle loop, wherein an electrolyte heat exchanger is simultaneously located in the two cycle loops, and an electrolyte circulating stream flowing in the electrolyte cycle loop exchanges heat via the electrolyte heat exchanger with an organic working medium stream flowing in the Organic Rankine Cycle loop, during which the former stream is cooled and the later stream is vaporized. After being vaporized, the organic working medium stream does work via an expander, and drives a generator to generate electricity. The electrical energy generated can be incorporated into a power grid or converted to DC electricity and then inputted to an electrolysis apparatus.

[Figure 1]