

Title (en)
HIGH EFFICIENCY ORGANIC RANKINE CYCLE WITH FLEXIBLE HEAT DETACHMENT

Title (de)
HOCHEFFIZIENTER ORGANISCHER RANKINE-ZYKLUS MIT FLEXIBLER WÄRMEABGABE

Title (fr)
CYCLE DE RANKINE ORGANIQUE HAUTEMENT EFFICACE AVEC DÉCHARGE DE CHALEUR FLEXIBLE

Publication
EP 3835556 A1 20210616 (EN)

Application
EP 20211476 A 20201203

Priority
IT 201900023364 A 20191210

Abstract (en)
Organic Rankine cycle (300, 400, 500) comprising:- an evaporator (1) where the pressurized fluid is heated, vaporized and brought into subcritical or supercritical conditions using the heat of a source;- a turbine (2) where the fluid while expanding provides the useful work of the cycle;- at least one pump (5, 5') where the liquid is brought from the pressure of at least one condenser (4, 4') to the evaporator pressure (1);- a pre-heater (6), which using the same source supplies heat to the working fluid, bringing it to a temperature close to the vaporization temperature, said organic Rankine cycle (300, 400, 500) further comprising- a first recuperator (3) which receives a first portion of organic fluid vapor extracted from the turbine (2), and is connected to a first condenser (4), by means of a first circuit (10) at medium pressure;- at least one second recuperator (3', 403', 404') which receives a second portion organic fluid vapor leaving the turbine (2) and is connected to a second condenser (4'), by means of a second low pressure circuit (11), said organic Rankine cycle (300, 400, 500) being characterized by at least one further pre-heater (301, 301') positioned in parallel with one or both of said first and second recuperator (3, 3').

IPC 8 full level
F01K 7/34 (2006.01); **F01K 17/00** (2006.01)

CPC (source: EP)
F01K 7/34 (2013.01); **F01K 17/00** (2013.01)

Citation (search report)
• [X] US 2015076831 A1 20150319 - GIEGEL JOSUA [US]
• [I] EP 1936129 A2 20080625 - EXERGY INC [US]
• [A] US 2012131919 A1 20120531 - HELD TIMOTHY JAMES [US], et al

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CN113898429A; CN117432493A; WO2023148605A1

Designated contracting state (EPC)
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