

Title (en)

A MULTISTAGE EVAPORATION ORGANIC RANKINE CYCLE

Title (de)

ORGANISCHER RANKINE-KREISLAUF MIT MEHRSTUFIGER VERDAMPFUNG

Title (fr)

PROCÉDÉS ET MODES DE RÉALISATION DE TECHNOLOGIE DE COMPOSITION D'ENTHALPIE ET LEURS MACHINES

Publication

EP 3353387 A1 20180801 (EN)

Application

EP 15841686 A 20150921

Priority

- SE 2015050982 W 20150921
- SE 1451108 A 20140919

Abstract (en)

[origin: WO2016043653A1] The invention ECT relates to methods for improving the amount of electricity gained from preferably waste heat by a normal or an organic (ORC) Rankine process with vaporization in several stages, normally three. The waste heat in sensible form is exchanged in at least two in series coupled evaporators to a receiving working fluid (e.g. a refrigerant) that passes at least two of said evaporators, but coupled in parallel. Of the waste heat between the temperature of the heat source and that of the heat sink about 80 % can be used for direct electricity generation. An embodiment of the invention uses a radial turbine with a centripetal (inwards) flow direction. The different vapor enthalpies from the said vaporization stages enters a turbine wheel/runner 51 at different outside diameters D2, D2' and/or with suitable tangential velocities obtained by different guiding vane sets 65, 66 and 67.

IPC 8 full level

F01K 25/10 (2006.01); **F01C 1/00** (2006.01); **F01D 1/02** (2006.01); **F01K 7/18** (2006.01)

CPC (source: EP US)

F01K 7/18 (2013.01 - EP US); **F01K 25/06** (2013.01 - US); **F01K 25/08** (2013.01 - EP US); **F01K 25/10** (2013.01 - US)

Citation (search report)

See references of WO 2016043653A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2016043653 A1 20160324; EP 3353387 A1 20180801; US 2018258799 A1 20180913

DOCDB simple family (application)

SE 2015050982 W 20150921; EP 15841686 A 20150921; US 201515760795 A 20150921