

Title (en)
PROCESS, PLANT AND THERMODYNAMIC CYCLE FOR PRODUCTION OF POWER FROM VARIABLE TEMPERATURE HEAT SOURCES

Title (de)
VERFAHREN, ANLAGE UND THERMODYNAMISCHER KREISLAUF ZUR ENERGIEERZEUGUNG AUS WÄRMEQUELLEN VARIABLER TEMPERATUR

Title (fr)
PROCÉDÉ, INSTALLATION ET CYCLE THERMODYNAMIQUE POUR LA PRODUCTION D'ÉNERGIE À PARTIR DE SOURCES DE CHALEUR À TEMPÉRATURE VARIABLE

Publication
EP 3728802 A1 20201028 (EN)

Application
EP 18836405 A 20181218

Priority
• IT 201700145913 A 20171218
• IB 2018060245 W 20181218

Abstract (en)
[origin: WO2019123243A1] A cascade process for the production of power from variable temperature heat sources, comprises: circulating a main working fluid selected from perfluorinated compounds (like Perfluoro-2-methylpentane/Perfluoro-i-hexane) in a main circuit (2) according to a main supercritical organic Rankine cycle, operatively coupling in a boiler (4) a variable temperature heat source (9) with the main working fluid of the main circuit (2) to heat and vaporize the main working fluid; circulating an auxiliary working fluid in an auxiliary circuit (3) according to an auxiliary Rankine cycle; thermally coupling in cascade the expanded main working fluid of the main Rankine cycle with the auxiliary working fluid of the auxiliary Rankine cycle, in order to cool the main working fluid and heating the vaporizing the auxiliary working fluid by heat transfer from the main Rankine cycle to the auxiliary Rankine cycle before the expansion of the auxiliary working fluid in an auxiliary expander (12).

IPC 8 full level
F01K 23/04 (2006.01); **F01K 7/32** (2006.01); **F01K 25/08** (2006.01)

CPC (source: EP US)
F01K 7/32 (2013.01 - EP US); **F01K 23/04** (2013.01 - EP US); **F01K 25/08** (2013.01 - EP US); **F01K 7/025** (2013.01 - US); **F01K 9/003** (2013.01 - US)

Citation (search report)
See references of WO 2019123243A1

Designated contracting state (EPC)
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Designated extension state (EPC)
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WO 2019123243 A1 20190627; AU 2018392903 A1 20200730; CA 3085850 A1 20190627; CN 111699302 A 20200922; EP 3728802 A1 20201028; US 2021017883 A1 20210121

DOCDB simple family (application)
IB 2018060245 W 20181218; AU 2018392903 A 20181218; CA 3085850 A 20181218; CN 201880088116 A 20181218; EP 18836405 A 20181218; US 201816955354 A 20181218