

Title (en)

METHOD AND DEVICE FOR CRYOGENIC COOLING

Title (de)

VERFAHREN UND VORRICHTUNG ZUR KRYOGENEN KÜHLUNG

Title (fr)

PROCÉDÉ ET DISPOSITIF DE REFROIDISSEMENT CRYOGÉNIQUE

Publication

**EP 4158270 A1 20230405 (FR)**

Application

**EP 21714158 A 20210325**

Priority

- FR 2005565 A 20200527
- EP 2021057695 W 20210325

Abstract (en)

[origin: WO2021239293A1] Method for cryogenic cooling of a first fluid (2) by heat exchange with at least one second fluid (3) in a heat exchanger (1), the first fluid (2) and/or the second fluid (3) being at a temperature between -100°C and -273°C, characterized in that the heat exchanger (1) is of the type with polymer microtubes, i.e. comprising a plurality of microtubes (4) made of polymer and having a diameter of between 0.1 mm and 1 cm, one of the first (2) and second (3) fluids being circulated inside said microtubes (4) whilst the other fluid is circulated around said microtubes (4).

IPC 8 full level

**F28F 21/06** (2006.01)

CPC (source: EP US)

**F25J 1/0262** (2013.01 - US); **F28D 1/05333** (2013.01 - US); **F28F 21/06** (2013.01 - EP US); **F28D 2021/0033** (2013.01 - EP US);  
**F28F 2260/02** (2013.01 - US)

Citation (search report)

See references of WO 2021239293A1

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

**FR 3110961 A1 20211203; FR 3110961 B1 20220701;** EP 4158270 A1 20230405; US 2023194195 A1 20230622; WO 2021239293 A1 20211202

DOCDB simple family (application)

**FR 2005565 A 20200527;** EP 2021057695 W 20210325; EP 21714158 A 20210325; US 202117926524 A 20210325