

Title (en)
HEAT EXCHANGER

Title (de)
WÄRMETAUSCHER

Title (fr)
ÉCHANGEUR DE CHALEUR

Publication
EP 2573494 A1 20130327 (EN)

Application
EP 11783340 A 20110406

Priority
• JP 2011065860 A 20110324
• JP 2010114356 A 20100518
• JP 2011058709 W 20110406

Abstract (en)
A heat exchanger is provided of which the heat exchange efficiency is significantly improved by providing a flat tube with an increased surface area and increasing the flow speed of fluid that flows outside the flat tube. The heat exchanger includes an outer case (2) defining therein a tubular space (3), and a flat tube (4) received in the tubular space (3). A first fluid and a second fluid are fed through the tubular space, outside and inside the flat tube, respectively, to exchange heat between the first and second fluids. The flat tube (4), which defines a flow passage (6) therein, includes a peripheral wall having a surface increasing shape (15) which is in the form of a longitudinally continuous helical corrugation, longitudinally continuous corrugations, corrugations continuous in section in a width direction, or longitudinally extending fins formed on an outer surface of the peripheral wall of the flat tube so as to be spaced apart from each other in the width direction. Fluid passages (5) are defined by a large number of fluid flow rectifying grooves (5a) formed parallel to each other in the inner periphery of the tubular space (3) of the outer case (2).

IPC 8 full level
F28D 7/10 (2006.01); **F24H 9/00** (2006.01); **F28F 1/02** (2006.01); **F28F 1/40** (2006.01); **F28F 1/42** (2006.01); **F28F 3/12** (2006.01); **F28F 9/26** (2006.01); **F28F 21/06** (2006.01)

CPC (source: EP KR)
F24H 9/00 (2013.01 - KR); **F24H 9/02** (2013.01 - KR); **F28D 7/00** (2013.01 - KR); **F28D 7/10** (2013.01 - KR); **F28D 7/106** (2013.01 - EP KR); **F28F 1/022** (2013.01 - EP KR); **F28F 1/40** (2013.01 - EP KR); **F28F 1/426** (2013.01 - EP KR); **F28F 3/00** (2013.01 - KR); **F28F 3/12** (2013.01 - KR); **F28F 9/26** (2013.01 - EP KR); **F28F 21/06** (2013.01 - EP KR); **F28F 2225/02** (2013.01 - EP KR); **F28F 2255/143** (2013.01 - EP KR)

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

DOCDB simple family (publication)
EP 2573494 A1 20130327; **EP 2573494 A4 20141015**; **EP 2573494 B1 20220330**; CN 102297614 A 20111228; CN 102297614 B 20141210; DE 112011101673 T5 20130508; JP 2012002495 A 20120105; JP 5559088 B2 20140723; KR 101827401 B1 20180208; KR 20130124150 A 20131113; MY 160271 A 20170228; TW 201207349 A 20120216; TW I453367 B 20140921; WO 2011145403 A1 20111124

DOCDB simple family (application)
EP 11783340 A 20110406; CN 201110130807 A 20110516; DE 112011101673 T 20110406; JP 2011058709 W 20110406; JP 2011065860 A 20110324; KR 20127028589 A 20110406; MY PI2012700902 A 20110406; TW 100117470 A 20110518