

Title (en)  
DEVICE FOR MULTI-STAGE HEAT EXCHANGE AND METHOD FOR PRODUCING ONE SUCH DEVICE

Title (de)  
VORRICHTUNG ZUM MEHRSTUFIGEN WÄRMEAUSTAUSCH UND VERFAHREN ZUR HERSTELLUNG EINER DERARTIGEN VORRICHTUNG

Title (fr)  
DISPOSITIF D'ECHANGE THERMIQUE POLYETAGE ET PROCEDE DE FABRICATION D'UN TEL DISPOSITIF

Publication  
**EP 1642076 A1 20060405 (DE)**

Application  
**EP 04739733 A 20040609**

Priority  
• EP 2004006224 W 20040609  
• DE 10328746 A 20030625

Abstract (en)  
[origin: WO2004113815A1] The invention relates to a device for multi-stage heat exchange and to a method for producing one such device, whereby at least three free-flowing media (fluids) are used in three flow devices subdivided into at least two heat-exchanging or flow modules. Said modules respectively consist of at least two flow elements that are arranged in such a way that different fluids alternately flow through the same. For essentially liquid fluids, the fluids are distributed to the flow elements by means of fluid collecting devices or fluid distributing devices connected in a gas-tight and liquid-tight manner. The main flow directions of all fluids in the flow elements are in essentially parallel planes. At least two flow modules are directly mounted in series and/or by means of fluid distributing devices in a flow-connected manner at least in relation to one flow device.

IPC 1-7  
**F28D 9/00; F28D 7/00**

IPC 8 full level  
**F02B 29/04** (2006.01); **F28D 7/00** (2006.01); **F28D 9/00** (2006.01); **F01P 3/18** (2006.01); **F01P 7/16** (2006.01)

CPC (source: EP US)  
**F02B 29/0412** (2013.01 - EP US); **F02B 29/0462** (2013.01 - EP US); **F28D 7/0066** (2013.01 - EP US); **F28D 7/0083** (2013.01 - EP US);  
**F28D 7/1692** (2013.01 - EP US); **F28D 9/005** (2013.01 - EP US); **F28D 9/0056** (2013.01 - EP US); **F28D 9/0093** (2013.01 - EP US);  
**F01P 7/165** (2013.01 - EP US); **F01P 2003/182** (2013.01 - EP US); **F01P 2060/16** (2013.01 - EP US); **F28D 21/0003** (2013.01 - EP US);  
**F28F 2275/025** (2013.01 - EP US); **Y02T 10/12** (2013.01 - EP US)

Citation (search report)  
See references of WO 2004113815A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2004113815 A1 20041229**; BR PI0411930 A 20060815; CN 1813164 A 20060802; DE 10328746 A1 20050113; EP 1642076 A1 20060405;  
JP 2007506928 A 20070322; MX PA05014018 A 20060317; US 2007125527 A1 20070607

DOCDB simple family (application)  
**EP 200406224 W 20040609**; BR PI0411930 A 20040609; CN 200480018049 A 20040609; DE 10328746 A 20030625;  
EP 04739733 A 20040609; JP 2006515866 A 20040609; MX PA05014018 A 20040609; US 56197504 A 20040609