

Title (en)
SOLID STATE CRYOCOOLER

Title (de)
FESTKÖRPER-KRYOKÜHLER

Title (fr)
DISPOSITIF DE REFROIDISSEMENT CRYOGENIQUE A L'ETAT SOLIDE

Publication
EP 1882131 A4 20090909 (EN)

Application
EP 06759755 A 20060515

Priority
• US 2006018561 W 20060515
• US 13042405 A 20050516

Abstract (en)
[origin: US2006254286A1] A cryocooler is disclosed which includes a reservoir (11), an electrochemical cell or proton conductive membrane (PCM) compressor (12) coupled to a source of AC current, and a gas expander in the form of a pulse tube expander module (13). The compressor (12) includes a proton conductive membrane (17) positioned between a pair of electrically conductive electrodes (18) and (19). The pulse tube expander module 13 includes a regenerator (21), a pulse tube (22), and in inertance tube (23). The regenerator (21) has a heat rejection part or aftercooler (25) and a cooling part or cold heat exchanger (26). The pulse tube (22) includes a heat rejection portion or hot heat exchanger (27).

IPC 8 full level
F25B 9/00 (2006.01)

CPC (source: EP US)
F04B 35/00 (2013.01 - EP US); **F25B 9/14** (2013.01 - EP US); **F25B 9/145** (2013.01 - EP US); **F25B 2309/1408** (2013.01 - EP US); **F25B 2309/1421** (2013.01 - EP US); **F25B 2309/1423** (2013.01 - EP US); **F25B 2309/1424** (2013.01 - EP US)

Citation (search report)
• [XY] US 4671080 A 19870609 - GROSS SIDNEY [US]
• [DY] US 2004011060 A1 20040122 - KAMOSHITA TOMOYOSHI [JP], et al
• [Y] US 5063747 A 19911112 - JONES JACK A [US], et al
• See references of WO 2006124679A2

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

DOCDB simple family (publication)
US 2006254286 A1 20061116; EP 1882131 A2 20080130; EP 1882131 A4 20090909; IL 187133 A0 20080209; JP 2008541004 A 20081120; WO 2006124679 A2 20061123; WO 2006124679 A3 20071206

DOCDB simple family (application)
US 13042405 A 20050516; EP 06759755 A 20060515; IL 18713307 A 20071104; JP 2008512379 A 20060515; US 2006018561 W 20060515