

Title (en)  
EPICATALYTIC THERMAL DIODE

Title (de)  
EPIKATALYTISCHE THERMISCHE DIODE

Title (fr)  
DIODE THERMIQUE ÉPICATALYTIQUE

Publication  
**EP 3003547 A4 20161228 (EN)**

Application  
**EP 14803740 A 20140529**

Priority  

- US 201361828421 P 20130529
- US 201361828419 P 20130529
- US 201414289322 A 20140528
- US 2014040089 W 20140529

Abstract (en)  
[origin: WO2014194138A1] An Epicatalytic Thermal Diode (ETD) includes one or more ETD cells. Each cell comprises first and second surfaces with a cavity between them, which contains a gas that is epicatalytically active with respect to the pair of surfaces. The surfaces chemically interact with the gas such that the gas dissociates at a faster rate proximate to the first surface than it does proximate to the second surface. Thus, a steady-state temperature differential between the first surface and the second surface is created and maintained. In various applications, multiple ETD cells are connected in series and/or parallel.

IPC 8 full level  
**B01J 15/00** (2006.01); **F24J 1/00** (2006.01); **F24V 30/00** (2018.01); **F28D 15/00** (2006.01); **F28F 23/00** (2006.01)

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Citation (search report)  

- [A] EP 0885369 A1 19981223 - EUDOSIA S P A [IT]
- [A] CN 101216204 A 20080709 - UNIV NANJING AERONAUTICS [CN]
- [XI] VLADISLAV CÁPEK ET AL: "Passages: Challenges to the Second Law of Thermodynamics: Theory and Experiment", 1 January 2005 (2005-01-01), XP008181328, ISBN: 978-1-4020-3015-4, Retrieved from the Internet <URL:http://exvacuo.free.fr/div/Sciences/Dossiers/Thermo/Challenges%20to%20The%20Second%20Law%20of%20Thermodynamics.pdf>
- See references of WO 2014194138A1

Designated contracting state (EPC)  
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**WO 2014194138 A1 20141204**; AU 2014274104 A1 20151217; CN 105473218 A 20160406; CN 105473218 B 20180522; EP 3003547 A1 20160413; EP 3003547 A4 20161228; KR 20160034856 A 20160330

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**US 2014040089 W 20140529**; AU 2014274104 A 20140529; CN 201480038411 A 20140529; EP 14803740 A 20140529; KR 20157036821 A 20140529