

Title (en)  
Atomic clock operated with Helium-3

Title (de)  
Mit Helium-3 angetriebene Atomuhr

Title (fr)  
Horloge atomique fonctionnant à l'hélium 3

Publication  
**EP 2261758 A1 20101215 (FR)**

Application  
**EP 10165184 A 20100608**

Priority  
FR 0953901 A 20090611

Abstract (en)  
The clock has a cell (1) filled with a measuring medium, and an exciter (2) i.e. laser diode, for exciting particles of the medium until a higher energy level. A photodetector (4) collects frequency of light energy reproduced by the medium, and transmits a signal to a counting device (5). An application device (9) applies static magnetic field parallel to a laser beam. A control unit (8) controls the application device to adjust the magnetic field. The medium includes helium-3 plasma. Another exciter (10) provokes the helium-3 plasma from gaseous helium-3.

Abstract (fr)  
Cette horloge atomique comprend de l'hélium 3 plasma comme milieu de mesure, qui est porté à l'état de plasma pour exploiter l'état métastable de la matière et les niveaux de la structure hyperfine, dont la durée de vie est longue et qui permettent donc une mesure plus facile que les excitations d'atomes gazeux.

IPC 8 full level  
**G04F 5/14** (2006.01)

CPC (source: EP US)  
**G04F 5/14** (2013.01 - EP US)

Citation (applicant)  
US 2007247241 A1 20071025 - BRAUN ALAN MICHAEL [US], et al

Citation (search report)

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- [AP] WO 2009074616 A1 20090618 - COMMISSARIAT ENERGIE ATOMIQUE [FR], et al
- [AP] WO 2009074619 A1 20090618 - COMMISSARIAT ENERGIE ATOMIQUE [FR], et al
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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 SE SI SK SM TR

Designated extension state (EPC)  
BA ME RS

DOCDB simple family (publication)  
**EP 2261758 A1 20101215; EP 2261758 B1 20111207**; AT E536573 T1 20111215; FR 2946766 A1 20101217; FR 2946766 B1 20110701; JP 2010286490 A 20101224; US 2010315173 A1 20101216; US 8183942 B2 20120522

DOCDB simple family (application)  
**EP 10165184 A 20100608**; AT 10165184 T 20100608; FR 0953901 A 20090611; JP 2010132868 A 20100610; US 79661510 A 20100608