

Title (en)  
A PANEL-SHAPED, HYBRID PHOTOVOLTAIC/THERMAL DEVICE

Title (de)  
PLATTENFÖRMIGE HYBRIDE PHOTOVOLTAISCHE TERMISCHE ANORDNUNG

Title (fr)  
DISPOSITIF PHOTOVOLTAIQUE/THERMIQUE HYBRIDE EN FORME DE PANNEAU

Publication  
**EP 1012886 A1 20000628 (EN)**

Application  
**EP 98940680 A 19980825**

Priority

- NL 9800477 W 19980825
- NL 1006838 A 19970825

Abstract (en)  
[origin: WO9910934A1] A panel-shaped hybrid photovoltaic/thermal device (1) comprising metal absorption means (6) for converting solar energy into thermal energy, and laminated, panel-shaped photovoltaic means (2) comprising photovoltaic cells (3) of a crystalline silicon for converting solar energy into electric energy. The photovoltaic means (2) and the absorption means (6) have been joined to form a single assembly with the interposition of a metal-containing plastic material (10) having bonding properties. The device (1) is constructionally simple and suited for optimizing the electric and thermal efficiency.

IPC 1-7  
**H01L 31/058; F24J 2/24**

IPC 8 full level  
**F24J 2/04** (2006.01); **F24S 10/75** (2018.01); **F24S 23/30** (2018.01); **F28F 13/00** (2006.01); **H01L 31/048** (2014.01); **H01L 31/058** (2006.01); **H02S 40/44** (2014.01)

CPC (source: EP)  
**F24S 10/20** (2018.04); **F24S 10/25** (2018.04); **F24S 10/75** (2018.04); **F24S 23/31** (2018.04); **F28F 13/00** (2013.01); **H01L 31/048** (2013.01); **H02S 40/44** (2014.12); **F24S 2025/601** (2018.04); **Y02B 10/20** (2013.01); **Y02B 10/70** (2013.01); **Y02E 10/44** (2013.01); **Y02E 10/50** (2013.01); **Y02E 10/60** (2013.01)

Citation (search report)  
See references of WO 9910934A1

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US11018623B2; US11264947B2; US11687112B2; US11894806B2; US9853565B2; US10992238B2; US9960731B2; US11579235B2; US11961922B2; US12032080B2; US9935458B2; US10637393B2; US11271394B2; US11476799B2; US11996488B2; US9876430B2; US10673229B2; US11070051B2; US11489330B2; US12057807B2; US10461687B2; US10468878B2; US10693415B2; US11183969B2; US11296650B2; US11424616B2; US9680304B2; US9948233B2; US10097007B2; US11063440B2; US11962243B2; US9639106B2; US9866098B2; US10007288B2; US10666125B2; US11205946B2; US11881814B2; DE102010013673A1; US9853490B2; US9941813B2; US11545912B2; US11742777B2; US12027849B2; US12119758B2; US9644993B2; US9923516B2; US10381977B2; US11002774B2; US11073543B2; US11183968B2; US11598652B2; US11620885B2; US12094306B2; US9647442B2; US9853538B2; US9869701B2; US10447150B2; US10673222B2; US10931228B2; US10969412B2; US11183922B2; US11349432B2; US11867729B2; US12003215B2; US10115841B2; US10396662B2; US10778025B2; US10931119B2; US11177663B2; US11177768B2; US11201476B2; US11728768B2; US11870250B2; US11979037B2; US12003107B2; US9831824B2; US9979280B2; US10230310B2; US10644589B2; US10886832B2; US10886831B2; US11183923B2; US11296590B2; US11632058B2; US11693080B2; US12055647B2; US9812984B2; US9819178B2; US9966766B2; US10230245B2; US10608553B2; US10651647B2; US10673253B2; US11043820B2; US11424617B2; US11682918B2; US11888387B2; US11929620B2; US12027970B2; US12046940B2; US12132125B2; US9673711B2; US9960667B2; US10116217B2; US10516336B2; US11031861B2; US11309832B2; US11575260B2; US11575261B2; US11594968B2; US11594882B2; US11594881B2; US11594880B2; US11658482B2; US11735910B2; US12068599B2; US12107417B2

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