

## Title (en)

LIGHT EMITTING, POWER GENERATING OR OTHER ELECTRONIC APPARATUS AND METHOD OF MANUFACTURING SAME

## Title (de)

LICHTEMITTIERENDE, STROMERZEUGENDE ODER ANDERE ELEKTRONISCHE VORRICHTUNG SOWIE HERSTELLUNGSVERFAHREN DAFÜR

## Title (fr)

APPAREIL ÉLECTROLUMINESCENT, GÉNÉRATEUR D'ÉNERGIE OU AUTRE APPAREIL ÉLECTRONIQUE ET SON PROCÉDÉ DE FABRICATION

## Publication

**EP 2612380 A4 20150114 (EN)**

## Application

**EP 11822653 A 20110901**

## Priority

- US 201113223302 A 20110831
- US 201113223279 A 20110831
- US 37983010 P 20100903
- US 37922510 P 20100901
- US 201113223294 A 20110831
- US 201113223286 A 20110831
- US 37928410 P 20100901
- US 37982010 P 20100903
- US 201113223297 A 20110831
- US 201113223289 A 20110831
- US 201113223293 A 20110831
- US 2011050174 W 20110901

## Abstract (en)

[origin: WO2012031096A2] An exemplary printable composition of a liquid or gel suspension of diodes comprises a plurality of diodes, a first solvent and/or a viscosity modifier. An exemplary apparatus comprises: a plurality of diodes; at least a trace amount of a first solvent; and a polymeric or resin film at least partially surrounding each diode of the plurality of diodes. Various exemplary diodes have a lateral dimension between about 10 to 50 microns and about 5 to 25 microns in height. Other embodiments may also include a plurality of substantially chemically inert particles having a range of sizes between about 10 to about 50 microns.

## IPC 8 full level

**C09D 11/00** (2014.01); **H01L 25/00** (2006.01); **H01L 25/075** (2006.01); **H01L 33/20** (2010.01); **H01L 33/38** (2010.01)

## CPC (source: CN EP KR)

**C09D 11/52** (2013.01 - EP); **F21K 9/00** (2013.01 - KR); **F21V 23/003** (2013.01 - KR); **H01L 24/95** (2013.01 - EP KR); **H01L 25/0753** (2013.01 - CN EP KR); **H01L 25/167** (2013.01 - KR); **H01L 25/50** (2013.01 - CN EP KR); **H01L 33/20** (2013.01 - CN EP KR); **H01L 33/38** (2013.01 - CN EP KR); **H01L 2224/95101** (2013.01 - EP); **H01L 2924/09701** (2013.01 - CN EP); **H01L 2924/12041** (2013.01 - EP); **H01L 2924/13033** (2013.01 - EP); **H01L 2924/13034** (2013.01 - EP); **H01L 2924/1305** (2013.01 - EP); **H01L 2924/1306** (2013.01 - EP); **H01L 2924/13062** (2013.01 - EP); **H01L 2924/13091** (2013.01 - CN EP); **H01L 2924/14** (2013.01 - EP); **H01L 2924/181** (2013.01 - EP)

## C-Set (source: EP)

1. **H01L 2924/12041** + **H01L 2924/00**
2. **H01L 2924/13062** + **H01L 2924/00**
3. **H01L 2924/1306** + **H01L 2924/00**
4. **H01L 2924/13033** + **H01L 2924/00**
5. **H01L 2924/1305** + **H01L 2924/00**
6. **H01L 2924/13034** + **H01L 2924/00**
7. **H01L 2924/181** + **H01L 2924/00**
8. **H01L 2924/14** + **H01L 2924/00**

## Citation (search report)

- [I] US 2008224153 A1 20080918 - TOMODA KATSUHIRO [JP]
- [A] WO 2007149362 A2 20071227 - ARTICULATED TECHNOLOGIES LLC [US], et al
- [A] WO 9517005 A1 19950622 - UNIV CALIFORNIA [US], et al
- [A] EP 2048704 A1 20090415 - SONY CORP [JP]
- [A] US 2006278886 A1 20061214 - TOMODA KATSUHIRO [JP], et al
- [A] WO 0045443 A1 20000803 - NOVA CRYSTALS INC [US]
- [A] US 5469020 A 19951121 - HERRICK BRADLEY R [US]
- [A] US 2009230174 A1 20090917 - KIM SAMUEL [US], et al
- [A] EP 0747948 A2 19961211 - UNIV CALIFORNIA [US]
- [A] HWANG ET AL: "Optical and electrical properties of GaN micron-scale light-emitting diode", JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, PERGAMON PRESS, LONDON, GB, vol. 69, no. 2-3, 1 February 2008 (2008-02-01), pages 752 - 758, XP022456345, ISSN: 0022-3697, DOI: 10.1016/J.JPCS.2007.07.111
- [A] BARRY C R ET AL: "Approaching Programmable Self-Assembly from Nanoparticle-Based Devices to Integrated Circuits", PROCEEDINGS OF THE FOUNDATIONS OF NANOSCIENCE, XX, XX, 21 April 2004 (2004-04-21), XP002367627
- See references of WO 2012031096A2

## 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 RS SE SI SK SM TR

## DOCDB simple family (publication)

**WO 2012031096 A2 20120308**; **WO 2012031096 A3 20140320**; CN 103582962 A 20140212; CN 103582962 B 20170322; EP 2612380 A2 20130710; EP 2612380 A4 20150114; KR 102030331 B1 20191010; KR 102156532 B1 20200916; KR 102321916 B1 20211105; KR 102404843 B1 20220607; KR 20130108575 A 20131004; KR 20190116535 A 20191014; KR 20200106995 A 20200915; KR 20210136146 A 20211116

DOCDB simple family (application)

**US 2011050174 W 20110901**; CN 201180052548 A 20110901; EP 11822653 A 20110901; KR 20137008391 A 20110901;  
KR 20197028661 A 20110901; KR 20207025886 A 20110901; KR 20217035378 A 20110901