

Title (en)

HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES

Title (de)

MIT HOHEM DURCHSATZ ERFOLGENDE BESTÜCKUNG EINER HALBLEITER-VORLÄUFERSCHICHT AUS INTERMETALLISCHEN MIKROSPLITTERN

Title (fr)

IMPRESSION A HAUT RENDEMENT DE COUCHE PRECURSEUR SEMI-CONDUCTRICE A PARTIR DE PARTICULES DE MICROFLOCONS INTERMETALLIQUES

Publication

EP 1997149 A2 20081203 (EN)

Application

EP 07757445 A 20070223

Priority

- US 2007062763 W 20070223
- US 36149806 A 20060223
- US 36168806 A 20060223
- US 36152206 A 20060223
- US 36143306 A 20060223
- US 36152106 A 20060223
- US 36149706 A 20060223
- US 36151506 A 20060223
- US 36226606 A 20060223
- US 39542606 A 20060330
- US 39619906 A 20060330
- US 39543806 A 20060330
- US 39566806 A 20060330
- US 39484906 A 20060330

Abstract (en)

[origin: WO2007101135A2] Methods and devices are provided for high-throughput printing of semiconductor precursor layer from microflake particles. In one embodiment, the method comprises of transforming non-planar or planar precursor materials in an appropriate vehicle under the appropriate conditions to create dispersions of planar particles with stoichiometric ratios of elements equal to that of the feedstock or precursor materials, even after settling. In particular, planar particles disperse more easily, form much denser coatings (or form coatings with more interparticle contact area), and anneal into fused, dense films at a lower temperature and/or time than their counterparts made from spherical nanoparticles. These planar particles may be microflakes that have a high aspect ratio. The resulting dense film formed from microflakes is particularly useful in forming photovoltaic devices. In one embodiment, at least one set of the particles in the ink may be inter-metallic flake particles (microflake or nanoflake) containing at least one group IB-IIIa inter-metallic alloy phase.

IPC 8 full level

H01L 31/00 (2006.01)

CPC (source: EP)

H01L 31/0322 (2013.01); **H01L 31/06** (2013.01); **H01L 31/0749** (2013.01); **H01L 31/18** (2013.01); **Y02E 10/541** (2013.01); **Y02P 70/50** (2015.11)

Citation (search report)

See references of WO 2007101135A2

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)

WO 2007101135 A2 20070907; **WO 2007101135 A3 20080207**; CN 101438416 A 20090520; CN 101438416 B 20111123; EP 1997149 A2 20081203; JP 2009540537 A 20091119

DOCDB simple family (application)

US 2007062763 W 20070223; CN 200780014585 A 20070223; EP 07757445 A 20070223; JP 2008556570 A 20070223