

Title (en)

NANO-POROUS METAL OXIDE SEMICONDUCTOR SPECTRALLY SENSITIZED WITH METAL CHALCOGENIDE NANO-PARTICLES

Title (de)

SPEKTRAL MIT METALLKALKOGENIDNANOPARTIKELN SENSIBILISIERTER NANOPORÖSER METALLOXIDHALBLEITER

Title (fr)

SEMICONDUCTEUR A OXYDE METALLIQUE NANOPOREUX SPECTRALEMENT SENSIBILISE A L'AIDE DE NANOPARTICULES DE CHALCOGENURE METALLIQUE

Publication

**EP 1547160 A1 20050629 (EN)**

Application

**EP 03787809 A 20030729**

Priority

- EP 03787809 A 20030729
- EP 0350346 W 20030729
- EP 02102130 A 20020813

Abstract (en)

[origin: WO2004017427A1] A nano-porous metal oxide semiconductor with a band-gap of greater than 2.9 eV in-situ spectrally sensitized on its internal and external surface with metal chalcogenide nano-particles with a band-gap of less than 2.9 eV containing at least one metal chalcogenide, characterized in that the nano-porous metal oxide further contains a phosphoric acid or a phosphate; and a process for in-situ spectral sensitization of nano-porous metal oxide semiconductor with a band-gap of greater than 2.9 eV on its internal and external surface with metal chalcogenide nanoparticles with a band-gap of less than 2.9 eV, containing at least one metal chalcogenide, comprising a metal chalcogenide-forming cycle comprising the steps of: contacting nano-porous metal oxide with a solution of metal ions; contacting nano-porous metal oxide with a solution of chalcogenide ions; and subsequent to metal chalcogenide formation rinsing the nano-porous metal oxide with an aqueous solution containing a phosphoric acid or a phosphate.

IPC 1-7

**H01L 31/072**; **H01L 31/0352**

IPC 8 full level

**H01L 31/0352** (2006.01); **H01L 31/072** (2006.01)

CPC (source: EP)

**H01G 9/2031** (2013.01); **H01L 31/035281** (2013.01); **H01M 14/005** (2013.01); **Y02E 10/542** (2013.01)

Citation (search report)

See references of WO 2004017427A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**WO 2004017427 A1 20040226**; AU 2003262550 A1 20040303; EP 1547160 A1 20050629; JP 2006501640 A 20060112

DOCDB simple family (application)

**EP 0350346 W 20030729**; AU 2003262550 A 20030729; EP 03787809 A 20030729; JP 2004528514 A 20030729