

Title (en)

MULTICOMPONENT NANOPARTICLES FORMED USING A DISPERSING AGENT

Title (de)

MIT EINEM DISPERSIONSMITTEL HERGESTELLTE MEHRKOMPONENTEN-NANOPARTIKEL

Title (fr)

NANOPARTICULES MULTICOMPOSANT FORMEES AU MOYEN D'UN DISPERSANT

Publication

**EP 1812158 A4 20101124 (EN)**

Application

**EP 05858246 A 20051019**

Priority

- US 2005037545 W 20051019
- US 99061604 A 20041117
- US 10367605 A 20050412

Abstract (en)

[origin: WO2007001418A2] Nanoparticles include a plurality of two or more dissimilar components selected from the group of noble metals, base transition metals, alkali earth metals, and rare earth metals and/or different groups of the periodic table of elements. The two or more dissimilar components are dispersed using a dispersing agent such that the nanoparticles have a substantially uniform distribution of the two or more dissimilar components. The dispersing agents can be poly functional small organic molecules, polymers, or oligomers, or salts of these. The molecules of the dispersing agent bind to the particle atoms to overcome same-component attractions, thereby allowing dissimilar components to form heterogeneous nanoparticles. Dissimilar components such as iron and platinum can be complexed using the dispersing agent to form substantially uniform heterogeneous nanoparticles. The nanoparticles can be used alone or applied to a support. At least a portion of the dispersing agent can be removed by reduction and/or oxidation.

IPC 8 full level

**B01J 23/00** (2006.01); **B01J 23/89** (2006.01); **B01J 35/00** (2006.01)

CPC (source: EP KR)

**B01J 23/00** (2013.01 - KR); **B01J 23/40** (2013.01 - KR); **B01J 23/745** (2013.01 - KR); **B01J 23/8906** (2013.01 - EP); **B01J 23/8933** (2013.01 - EP); **B01J 35/23** (2024.01 - EP); **B01J 35/393** (2024.01 - EP); **B01J 37/0203** (2013.01 - EP); **B01J 37/18** (2013.01 - EP); **B82B 3/00** (2013.01 - KR); **B82Y 30/00** (2013.01 - EP); **B82Y 40/00** (2013.01 - EP); **B01J 21/18** (2013.01 - EP); **B01J 23/8946** (2013.01 - EP)

Citation (search report)

- [X] US 2003121364 A1 20030703 - SUN SHOUHENG [US]
- [X] JP 2003226901 A 20030815 - HITACHI MAXELL
- [XP] EP 1522341 A1 20050413 - TANAKA PRECIOUS METAL IND [JP]
- [X] SUN S ET AL: "Controlled synthesis and assembly of FePt nanoparticles", JOURNAL OF PHYSICAL CHEMISTRY B AMERICAN CHEMICAL SOCIETY US, vol. 107, no. 23, 12 June 2003 (2003-06-12), pages 5419 - 5425, XP002603840
- [X] WEI-YONG YU ET AL: "PREPARATION OF POLYMER-PROTECTED PT/CO BIMETALLIC COLLOID AND ITS CATALYTIC PROPERTIES IN SELECTIVE HYDROGENATION OF CINNAMALDEHYDE TO CINNAMYL ALCOHOL", POLYMERS FOR ADVANCED TECHNOLOGIES, vol. 7, no. 8, 1 August 1996 (1996-08-01), pages 719 - 722, XP000623432, ISSN: 1042-7147
- See references of WO 2007001418A2

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 2007001418 A2 20070104**; **WO 2007001418 A3 20070518**; CA 2579785 A1 20070104; EP 1812158 A2 20070801; EP 1812158 A4 20101124; KR 20070062548 A 20070615

DOCDB simple family (application)

**US 2005037545 W 20051019**; CA 2579785 A 20051019; EP 05858246 A 20051019; KR 20077008177 A 20070410