

Title (en)

METALLIC NANOPARTICLES STABILISED WITH DERIVATISED POLYETHYLENIMINES OR POLYVINYLAMINES

Title (de)

MIT DERIVATISIERTEN POLYETHYLENIMINEN ODER POLYVINYLAMINEN STABILISIERTE METALL-NANOPARTIKEL

Title (fr)

NANOPARTICULES MÉTALLIQUES STABILISÉES AVEC DES POLYÉTHYLÈNE IMINES OU DES POLYVINYLE AMINES DÉRIVÉES

Publication

**EP 2274123 A2 20110119 (DE)**

Application

**EP 09722099 A 20090317**

Priority

- EP 2009053114 W 20090317
- EP 08152996 A 20080319
- EP 09722099 A 20090317

Abstract (en)

[origin: WO2009115506A2] The invention relates to metal-nanoparticles and to methods for the production thereof in which a metallic salt solution is reduced by means of a reducing agent in the presence of the derivatised polyethylenimines or polyvinylamines. Metal salt solutions of two or more different metals can be reduced at the same time or successively. The metallic nanoparticles are obtained from two or more different metals. Metals are preferably silver, palladium and platinum. Suitable reducing agents are, for example, formic acid, formaldehyde, diethanolamine, 5-pentenic acids and sodium borohydride. Silver can be used in the form of silver oxide and/or silver nitrate, palladium can be used in the form of alkali tetrachloropalladate or palladium(II)nitrate and platinum can be used in the form of alkali tetrachloroplatinate or tetraamine platinum(II)nitrate.

IPC 8 full level

**B22F 1/054** (2022.01); **B22F 1/10** (2022.01); **B22F 9/24** (2006.01); **C01G 3/00** (2006.01); **C01G 5/00** (2006.01); **C01G 7/00** (2006.01); **C01G 9/00** (2006.01); **C01G 29/00** (2006.01); **C01G 55/00** (2006.01); **C09C 1/62** (2006.01)

CPC (source: EP US)

**B22F 1/054** (2022.01 - EP US); **B22F 1/10** (2022.01 - EP US); **B22F 9/24** (2013.01 - EP US); **B82Y 30/00** (2013.01 - EP US); **C01G 3/00** (2013.01 - EP US); **C01G 5/00** (2013.01 - EP US); **C01G 7/00** (2013.01 - EP US); **C01G 9/00** (2013.01 - EP US); **C01G 29/00** (2013.01 - EP US); **C01G 55/00** (2013.01 - EP US); **C09C 1/62** (2013.01 - EP US); **C01P 2002/01** (2013.01 - EP US); **C01P 2002/84** (2013.01 - EP US); **C01P 2004/04** (2013.01 - EP US); **C01P 2004/64** (2013.01 - EP US); **C01P 2006/40** (2013.01 - EP US)

Citation (search report)

See references of WO 2009115506A2

Cited by

RU2610197C2

Designated contracting state (EPC)

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 SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

**WO 2009115506 A2 20090924**; **WO 2009115506 A3 20100506**; CN 102036773 A 20110427; EP 2274123 A2 20110119; JP 2011517728 A 20110616; US 2011020170 A1 20110127

DOCDB simple family (application)

**EP 2009053114 W 20090317**; CN 200980118001 A 20090317; EP 09722099 A 20090317; JP 2011500188 A 20090317; US 93339709 A 20090317