

Title (en)  
METHOD FOR SYNTHESISING CORE-SHELL SILICON-GERMANIUM NANOPARTICLES BY LASER PYROLYSIS, METHOD FOR PRODUCING AN ELECTRODE FOR A LITHIUM BATTERY AND ASSOCIATED ELECTRODE

Title (de)  
VERFAHREN ZUR SYNTHESE VON SILICIUM-GERMANIUM-KERN-HÜLLE-NANOPARTIKELN DURCH LASERPYROLYSE, VERFAHREN ZUR HERSTELLUNG EINER ELEKTRODE FÜR EINE LITHIUMBATTERIE UND ZUGEHÖRIGE ELEKTRODE

Title (fr)  
PROCEDE DE SYNTHESE DE NANOPARTICULES SILICIUM-GERMANIUM DE TYPE C?UR-COQUILLE PAR PYROLYSE LASER, PROCEDE DE FABRICATION D'UNE ELECTRODE POUR BATTERIE AU LITHIUM ET ELECTRODE ASSOCIEE

Publication  
**EP 3810316 A1 20210428 (FR)**

Application  
**EP 19731771 A 20190624**

Priority  
• FR 1855612 A 20180622  
• EP 2019066717 W 20190624

Abstract (en)  
[origin: WO2019243637A1] The invention concerns a method for synthesising core-shell nanoparticles by laser pyrolysis, said method comprising the following steps: a) simultaneously conveying a gaseous mixture (M) comprising a silicon precursor and a germanium precursor into a reaction zone (5) of a first chamber (1) of a reactor (100), b) emitting a first laser beam at said reaction zone (5) in order to cause a laser pyrolysis of said mixture, said steps making it possible to obtain nanoparticles having a core made of a silicon and germanium based alloy and a silicon shell.

IPC 8 full level  
**B01J 13/02** (2006.01); **B01J 19/12** (2006.01); **B22F 9/30** (2006.01); **C01B 33/027** (2006.01); **C23C 16/44** (2006.01); **C23C 16/48** (2006.01); **H01M 4/04** (2006.01); **H01M 4/134** (2010.01); **H01M 4/1395** (2010.01); **H01M 4/36** (2006.01); **H01M 4/38** (2006.01); **H01M 4/583** (2010.01); **B22F 1/054** (2022.01); **B22F 1/16** (2022.01)

CPC (source: EP US)  
**B01J 13/02** (2013.01 - EP); **B01J 13/22** (2013.01 - EP); **B01J 19/121** (2013.01 - EP); **C01B 33/027** (2013.01 - EP); **C22C 1/056** (2013.01 - EP); **C23C 16/4417** (2013.01 - EP US); **C23C 16/483** (2013.01 - EP US); **H01M 4/0404** (2013.01 - EP US); **H01M 4/0435** (2013.01 - EP); **H01M 4/134** (2013.01 - EP); **H01M 4/1395** (2013.01 - EP); **H01M 4/366** (2013.01 - EP US); **H01M 4/386** (2013.01 - EP US); **H01M 4/583** (2013.01 - EP); **B01J 2219/0883** (2013.01 - EP); **B22F 1/054** (2022.01 - EP US); **B22F 1/056** (2022.01 - EP US); **B22F 1/16** (2022.01 - EP US); **Y02E 60/10** (2013.01 - EP)

Citation (search report)  
See references of WO 2019243637A1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2019243637 A1 20191226**; EP 3810316 A1 20210428; FR 3082768 A1 20191227; FR 3082768 B1 20200925; US 2021265624 A1 20210826

DOCDB simple family (application)  
**EP 2019066717 W 20190624**; EP 19731771 A 20190624; FR 1855612 A 20180622; US 201917253646 A 20190624