

Title (en)  
CERAMICS, METHODS FOR THE PRODUCTION THEREOF AND USES OF SAME

Title (de)  
KERAMIK, VERFAHREN ZUR HERSTELLUNG DAVON UND VERWENDUNGEN DAVON

Title (fr)  
CÉRAMIQUES, LEURS PROCÉDÉS DE PRÉPARATION ET LEURS UTILISATIONS

Publication  
**EP 3802460 A4 20221012 (FR)**

Application  
**EP 19811540 A 20190530**

Priority  
• US 201862678020 P 20180530  
• US 201962791144 P 20190111  
• CA 2019050740 W 20190530

Abstract (en)  
[origin: WO2019227218A1] The invention relates to a method for producing ceramics containing lithium for use in electrochemical applications, in electrolyte compositions, and in cathode and anode materials. This method uses a sacrificial carbon additive which is subsequently eliminated during a heat treatment. The carbon additive can be used as a dispersant or surfactant when a source of lithium ions having a melting point below the heat treatment temperature is used, such as lithium carbonate. An alternative method can be carried out with or without addition of a carbonated material. This method comprises mixing the lithium carbonate, a first metal oxide, and a second metal oxide in order to obtain a mixture of powders, heating under an inert gas flow at a temperature below the decomposition temperature of Li<sub>2</sub>CO<sub>3</sub>, stopping the inert gas, and performing a heat treatment at a second temperature above the first temperature.

IPC 8 full level  
**C04B 35/486** (2006.01); **C01B 25/45** (2006.01); **C01G 23/00** (2006.01); **C01G 25/00** (2006.01); **C04B 35/01** (2006.01); **C04B 35/16** (2006.01); **C04B 35/26** (2006.01); **C04B 35/447** (2006.01); **C04B 35/462** (2006.01); **C04B 35/488** (2006.01); **C04B 35/49** (2006.01); **C04B 35/499** (2006.01); **C04B 35/626** (2006.01); **C04B 35/64** (2006.01); **H01M 4/04** (2006.01); **H01M 4/131** (2010.01); **H01M 4/1391** (2010.01); **H01M 4/485** (2010.01); **H01M 4/58** (2010.01); **H01M 10/0525** (2010.01)

CPC (source: EP KR US)  
**C01B 25/45** (2013.01 - EP KR); **C01G 23/005** (2013.01 - EP KR); **C01G 25/006** (2013.01 - EP KR); **C04B 35/01** (2013.01 - EP); **C04B 35/16** (2013.01 - EP); **C04B 35/2616** (2013.01 - EP); **C04B 35/447** (2013.01 - EP KR); **C04B 35/462** (2013.01 - EP); **C04B 35/48** (2013.01 - US); **C04B 35/486** (2013.01 - EP KR); **C04B 35/4885** (2013.01 - EP KR); **C04B 35/49** (2013.01 - EP); **C04B 35/499** (2013.01 - EP); **C04B 35/50** (2013.01 - US); **C04B 35/6261** (2013.01 - US); **C04B 35/62645** (2013.01 - EP KR); **C04B 35/64** (2013.01 - EP KR); **H01M 4/0471** (2013.01 - EP KR); **H01M 4/131** (2013.01 - EP KR); **H01M 4/1391** (2013.01 - EP KR); **H01M 4/485** (2013.01 - EP KR); **H01M 4/5825** (2013.01 - EP KR); **H01M 10/0525** (2013.01 - EP KR US); **H01M 10/0562** (2013.01 - US); **C01P 2002/72** (2013.01 - EP); **C04B 2235/3203** (2013.01 - EP KR); **C04B 2235/3215** (2013.01 - EP KR); **C04B 2235/3217** (2013.01 - EP KR); **C04B 2235/3222** (2013.01 - EP KR); **C04B 2235/3227** (2013.01 - EP KR); **C04B 2235/3244** (2013.01 - EP); **C04B 2235/3251** (2013.01 - EP KR); **C04B 2235/3272** (2013.01 - EP KR); **C04B 2235/3286** (2013.01 - EP KR); **C04B 2235/3287** (2013.01 - EP KR); **C04B 2235/3409** (2013.01 - EP KR); **C04B 2235/3418** (2013.01 - EP KR); **C04B 2235/422** (2013.01 - EP KR); **C04B 2235/424** (2013.01 - EP KR US); **C04B 2235/425** (2013.01 - EP KR US); **C04B 2235/442** (2013.01 - EP); **C04B 2235/447** (2013.01 - EP); **C04B 2235/5248** (2013.01 - EP KR); **C04B 2235/5288** (2013.01 - EP KR); **C04B 2235/658** (2013.01 - EP KR); **C04B 2235/661** (2013.01 - EP KR); **C04B 2235/721** (2013.01 - EP); **C04B 2235/762** (2013.01 - EP KR US); **C04B 2235/764** (2013.01 - EP KR); **C04B 2235/768** (2013.01 - EP KR); **C04B 2235/80** (2013.01 - EP); **C04B 2235/96** (2013.01 - EP); **H01M 2004/027** (2013.01 - US); **H01M 2004/028** (2013.01 - US); **H01M 2300/0077** (2013.01 - US); **Y02E 60/10** (2013.01 - EP)

Citation (search report)  
• [X] US 2005186476 A1 20050825 - BARKER JEREMY [GB], et al  
• [XI] US 2004185344 A1 20040923 - BARKER JEREMY [GB], et al  
• [A] US 2014134504 A1 20140515 - BROWN JACQUELINE LESLIE [US]  
• See also references of WO 2019227218A1

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

DOCDB simple family (publication)  
**WO 2019227218 A1 20191205**; CA 3096595 A1 20191205; CN 112166094 A 20210101; EP 3802460 A1 20210414; EP 3802460 A4 20221012; JP 2021525694 A 20210927; JP 7425751 B2 20240131; KR 20210016374 A 20210215; US 11649190 B2 20230516; US 2021147299 A1 20210520

DOCDB simple family (application)  
**CA 2019050740 W 20190530**; CA 3096595 A 20190530; CN 201980035754 A 20190530; EP 19811540 A 20190530; JP 2020566570 A 20190530; KR 20207035782 A 20190530; US 201917046912 A 20190530