

Title (en)  
LIQUID CRYSTAL TEMPLATED DEPOSITION METHOD

Title (de)  
ABSCHIEDUNGSVERFAHREN MIT FLÜSSIGKRISTALLTEMPLAT

Title (fr)  
PROCÉDÉ DE DÉPÔT STRUCTURÉ DE CRISTAUX LIQUIDES

Publication  
**EP 2059629 A2 20090520 (EN)**

Application  
**EP 07804188 A 20070907**

Priority  
• GB 2007003389 W 20070907  
• GB 0617741 A 20060908

Abstract (en)  
[origin: GB2441531A] A mesoporous metal or metal compound is electrochemically deposited from a mixture comprising a first metal compound, a solvent and an ionic surfactant in amounts sufficient to form a liquid crystal phase. The first metal compound is present in the aqueous component of the liquid crystal phase containing mixture at a concentration of at least 0.4 M, which is a concentration where a comparative mixture containing the non-ionic surfactant Brij 56 instead of the ionic surfactant would cause the liquid crystal phase to be unstable or produce a deposit with a cathodic charge density less than half the value obtained using the ionic surfactant at the same deposition charge density. The surfactant may be an amine or ammonium compound, e.g.  $\text{NR}_{<1>}\text{R}_{<2>}\text{R}_{<3>}$  or  $\text{N}_{<+>}\text{R}_{<1>}\text{R}_{<2>}\text{R}_{<3>}\text{R}_{<4>}\text{X}_{<->}$  where at least one of  $\text{R}_{<1>}$  to  $\text{R}_{<4>}$  is a hydrocarbon group having at least 8 carbon atoms, salts containing long chain fatty acids, hydrocarbon residues with at least 8 carbon atoms, cetyltrimethylammonium chloride, cetyltrimethylammonium bromide, sodium dodecyl sulphate, hexadecyl amine, dodecyltrimethylammonium chloride or dioctyl sodium sulphosuccinate.

IPC 8 full level  
**C25D 3/02** (2006.01); **C25D 3/56** (2006.01); **C25D 3/66** (2006.01); **H01G 9/155** (2006.01); **H01M 4/00** (2006.01)

CPC (source: EP GB KR US)  
**C25D 3/02** (2013.01 - EP GB KR US); **C25D 3/56** (2013.01 - KR); **C25D 3/562** (2013.01 - EP US); **C25D 3/66** (2013.01 - KR); **H01M 4/134** (2013.01 - EP US); **H01M 4/1395** (2013.01 - EP US); **H01M 4/38** (2013.01 - EP US); **H01M 10/30** (2013.01 - EP US); **H01G 9/0036** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP)

Citation (search report)  
See references of WO 2008029160A2

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 MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA HR MK RS

DOCDB simple family (publication)  
**GB 0617741 D0 20061018**; **GB 2441531 A 20080312**; AU 2007293317 A1 20080313; AU 2007293317 B2 20120628; CA 2662714 A1 20080313; CN 101563483 A 20091021; CN 101563483 B 20110727; EP 2059629 A2 20090520; JP 2010502839 A 20100128; KR 20090063247 A 20090617; TW 200827497 A 20080701; US 2010044240 A1 20100225; WO 2008029160 A2 20080313; WO 2008029160 A3 20081009

DOCDB simple family (application)  
**GB 0617741 A 20060908**; AU 2007293317 A 20070907; CA 2662714 A 20070907; CN 200780039975 A 20070907; EP 07804188 A 20070907; GB 2007003389 W 20070907; JP 2009527205 A 20070907; KR 20097007170 A 20090407; TW 96131857 A 20070828; US 44009207 A 20070907