

Title (en)

METHODS AND APPARATUS FOR CREATING PHOTONIC STRUCTURED ICE CUBE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR ERZEUGUNG EINES STRUKTURIERTEN PHOTONISCHEN EISWÜRFELS

Title (fr)

PROCÉDÉS ET APPAREIL POUR CRÉER UN GLAÇON À STRUCTURE PHOTONIQUE

Publication

EP 3155335 A4 20180124 (EN)

Application

EP 15807011 A 20150610

Priority

- US 201462011347 P 20140612
- US 201462056612 P 20140929
- US 201462066380 P 20141021
- US 201562133538 P 20150316
- IL 2015050583 W 20150610

Abstract (en)

[origin: WO2015189842A1] The invention relates to colored ice cubes, wherein the coloration is achieved by periodic or quasi-periodic nano- or micro-structures, embedded inside the volume of the ice cube, which serve as photonic structures. The invention also discloses apparatus and methods for the production of such colored ice cubes.

IPC 8 full level

B22C 7/00 (2006.01); **B22C 9/20** (2006.01); **B22C 9/24** (2006.01); **B22C 11/02** (2006.01); **F25C 1/04** (2018.01); **F25C 1/08** (2006.01);
F25C 1/10 (2006.01); **F25C 1/18** (2006.01); **F25C 5/08** (2006.01)

CPC (source: EP KR US)

F25C 1/04 (2013.01 - EP KR US); **F25C 1/10** (2013.01 - KR); **F25C 1/18** (2013.01 - KR US); **F25C 1/22** (2013.01 - US); **F25C 5/08** (2013.01 - KR);
G02B 1/11 (2013.01 - KR); **G02B 5/18** (2013.01 - KR); **F25C 2305/022** (2013.01 - EP KR US)

Citation (search report)

- [XY] JP H01310277 A 19891214 - KAWAGUCHI KENSHO
- [I] GB 2410998 A 20050817 - LUITHLEN PHILIP-GEORG LUDOVIC [GB]
- [I] DE 29821713 U1 19990218 - GAENSHIRT STEPHAN [DE]
- [A] EP 2258993 A1 20101208 - RUGERIS JESS EDWARD [GB]
- [Y] US 2012324915 A1 20121227 - BORTOLETTO ANDERSON [US], et al
- [A] WO 2007094829 A2 20070823 - UNIV NORTH CAROLINA [US], et al
- [A] HICONSUMPTION: "22 Coolest Ice Cube Trays. Hiconsumption", 22 July 2013 (2013-07-22), pages 1 - 13, XP055373003, Retrieved from the Internet <URL:<https://web.archive.org/web/20130724233811/http://hiconsumption.com:80/2013/07/22-coolest-ice-cube-trays/>> [retrieved on 20170515]
- [A] SCHMIDT M ET AL: "Ultralow refractive index substrates-a base for photonic crystal slab waveguides", APPLIED PHYSICS LETTERS, A I P PUBLISHING LLC, US, vol. 85, no. 1, 1 January 2004 (2004-01-01), pages 16 - 18, XP012062384, ISSN: 0003-6951, DOI: 10.1063/1.1767962
- [Y] ANONYMOUS: "Make Your Proposal Special | My Website", 19 February 2014 (2014-02-19), XP055436670, Retrieved from the Internet <URL:<http://blog.bowmanjewelers.com/?p=47>> [retrieved on 20171219]
- [Y] ANONYMOUS: "Fossicking specking opals we design opal jewelry using the best stones in the designs, you can have all the colors of unique rare and different gemstone from around the world in one jewelry design. Please do not hesitate to contact us if you are interested in similar gems, and more information regar", 5 January 2014 (2014-01-05), XP055436678, Retrieved from the Internet <URL:<https://www.grahamblackopal.com/opal-fossicking-opal-specking-opal-mines/>> [retrieved on 20171219]
- See references of WO 2015189842A1

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 2015189842 A1 20151217; AU 2015273059 A1 20170105; CN 106687758 A 20170517; EP 3155335 A1 20170419;
EP 3155335 A4 20180124; IL 249423 A0 20170228; JP 2017517714 A 20170629; KR 20170018003 A 20170215; US 2017122637 A1 20170504

DOCDB simple family (application)

IL 2015050583 W 20150610; AU 2015273059 A 20150610; CN 201580031513 A 20150610; EP 15807011 A 20150610; IL 24942316 A 20161206;
JP 2017517445 A 20150610; KR 20177000303 A 20150610; US 201515317958 A 20150610