

Title (en)

METHODS, SYSTEMS, AND APPARATUSES FOR LOW-TEMPERATURE FISCHER-TROPSCH WAX HYDROGENATION

Title (de)

VERFAHREN, SYSTEME UND VORRICHTUNGEN FÜR FISCHER-TROPSCH-WACHSHYDRIERUNG BEI NIEDRIGER TEMPERATUR

Title (fr)

PROCÉDÉS, SYSTÈMES, ET APPAREILS POUR L'HYDROGÉNATION À BASSE TEMPÉRATURE D'UNE CIRE FISCHER-TROPSCH

Publication

**EP 3036210 A4 20170524 (EN)**

Application

**EP 14837199 A 20140821**

Priority

- US 201361868509 P 20130821
- US 2014052052 W 20140821

Abstract (en)

[origin: WO2015027043A1] A process for hydrogenating a Fischer-Tropsch ("FT") wax includes placing hydrogenation catalyst particles within a low-temperature hydrogenation reactor having a mixing sub-system and a vent at the top for excess hydrogen, placing the FT wax at a low temperature up to a predetermined level within the low-temperature hydrogenation reactor, leaving a vapor space above the predetermined level, adding hydrogen under a desired pressure into the low-temperature hydrogenation reactor, mixing the input FT wax, the hydrogen gas and the hydrogenating catalyst particles together to create a mixture using the mixing subsystem and continuing the mixing until the FT wax has hydrogenated, stopping the mixing to allow the hydrogenation catalyst particles to settle, and removing an hydrogenated FT wax with residual hydrogenating catalyst particles from the low-temperature hydrogenation reactor. The hydrogenated FT wax may be filtered and subjected to vacuum distillation. Other embodiments are also disclosed.

IPC 8 full level

**C07C 1/04** (2006.01); **C10G 45/16** (2006.01); **C10G 45/22** (2006.01); **C10G 45/58** (2006.01); **C10G 45/66** (2006.01); **C10G 47/26** (2006.01)

CPC (source: EP US)

**B01J 8/006** (2013.01 - EP US); **B01J 8/226** (2013.01 - EP US); **B01J 8/228** (2013.01 - EP US); **C10G 2/33** (2013.01 - EP US); **C10G 45/00** (2013.01 - EP US); **C10G 45/02** (2013.01 - EP US); **C10G 45/16** (2013.01 - EP US); **C10G 45/22** (2013.01 - EP US); **C10G 45/58** (2013.01 - EP US); **C10G 45/66** (2013.01 - EP US); **C10G 47/04** (2013.01 - EP US); **C10G 47/26** (2013.01 - EP US); **C10G 67/02** (2013.01 - EP US); **B01J 2208/00212** (2013.01 - EP US); **B01J 2208/0084** (2013.01 - EP US); **B01J 2208/00867** (2013.01 - EP US); **B01J 2208/025** (2013.01 - EP US); **C10G 2300/1022** (2013.01 - EP US); **C10G 2300/202** (2013.01 - EP US); **C10G 2300/4006** (2013.01 - EP US)

Citation (search report)

- [X1] ANNEMARIE SCHAUB: "Advanced BUSS Loop Reactor Technology", 31 December 2009 (2009-12-31), pages 1 - 7, XP055364044, Retrieved from the Internet <URL:http://www.buss-ct.com/up/files/PDFs\_RT/Brochure\_RT\_Advanced\_Loop\_Reactor\_operating\_principle.pdf> [retrieved on 20170411]
- [X1] BUSS CHEMTECH AG: "animation sequence extracted from http://www.buss-ct.com/buss\_loop\_reactor.html", 31 March 2013 (2013-03-31), http://www.buss-ct.com/buss\_loop\_reactor.html, XP055364266, Retrieved from the Internet <URL:http://www.buss-ct.com/buss\_loop\_reactor.html> [retrieved on 20170412]
- [X1] REINALDO M MACHADO: "Increasing Productivity in Slurry Hydrogenation Processes", 28 May 2013 (2013-05-28), XP055364085, Retrieved from the Internet <URL:http://www.airproducts.com/~media/downloads/h/hydrogen-support-microsite/hydrogen-support-increasing-productivity-in-slurry-hydrogenation-process.pdf?la=en> [retrieved on 20170412]
- See references of WO 2015027043A1

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 2015027043 A1 20150226**; **WO 2015027043 A4 20150430**; CA 2918834 A1 20150226; CA 2918834 C 20190820; EP 3036210 A1 20160629; EP 3036210 A4 20170524; US 2016168486 A1 20160616

DOCDB simple family (application)

**US 2014052052 W 20140821**; CA 2918834 A 20140821; EP 14837199 A 20140821; US 201414904122 A 20140821