

Title (en)

LOW ENERGY PROCESS FOR THE PRODUCTION OF AMMONIA OR METHANOL

Title (de)

NIEDRIGENERGIE-VERFAHREN ZUR HERSTELLUNG VON AMMONIAK ODER METHANOL

Title (fr)

PROCÉDÉ À BASSE ÉNERGIE POUR LA PRODUCTION D'AMMONIAC OU DE MÉTHANOL

Publication

EP 2300357 A1 20110330 (EN)

Application

EP 09800005 A 20090703

Priority

- EP 2009004812 W 20090703
- EP 08013158 A 20080722
- EP 09800005 A 20090703

Abstract (en)

[origin: EP2147896A1] Process for utilizing synthesis gas heat for the generation of supercritical steam in a low energy ammonia or methanol plant comprising a reforming or partial oxidation stage (1), at least one supercritical steam generator (3) having a shell side and a tube side, at least one superheater (14), at least one back pressure turbine (17), at least one extraction and condensing turbine (23), at least one boiler feedwater pump (7). The synthesized synthesis gas (2) is sent to the shell side of the supercritical steam generator (3), the supercritical steam generator (3) is fed with pressurized feedwater (4), the feedwater flow is adjusted to maintain the steam temperature at the exit of the supercritical steam generator in the range of 375-500 °C (13), the supercritical steam is generated in the supercritical steam generator at a pressure of 225-450 bar, the supercritical steam (13) is further heated in a superheater (14) to a temperature of 500 - 750 °C, and the supercritical steam generated in the superheater is fed to a back pressure turbine (17).

IPC 8 full level

C01B 3/02 (2006.01); **C01B 3/34** (2006.01); **F01K 7/22** (2006.01); **F22B 1/18** (2006.01); **F22B 35/00** (2006.01)

CPC (source: EP US)

C01B 3/025 (2013.01 - EP US); **C01B 3/34** (2013.01 - EP US); **F01K 7/22** (2013.01 - EP US); **F22B 1/1846** (2013.01 - EP US); **F22B 35/007** (2013.01 - EP US); **C01B 2203/0205** (2013.01 - EP US); **C01B 2203/025** (2013.01 - EP US); **C01B 2203/0288** (2013.01 - EP US); **C01B 2203/061** (2013.01 - EP US); **C01B 2203/068** (2013.01 - EP US); **C01B 2203/0894** (2013.01 - EP US); **C01B 2203/1235** (2013.01 - EP US); **C01B 2203/1241** (2013.01 - EP US); **Y02P 20/129** (2015.11 - EP US); **Y02P 20/54** (2015.11 - EP US)

Citation (search report)

See references of WO 2010009802A1

Designated contracting state (EPC)

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 SE SI SK SM TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

EP 2147896 A1 20100127; BR PI0916369 A2 20180529; CA 2731306 A1 20101208; CA 2731306 C 20160426; CN 102099283 A 20110615; CN 102099283 B 20130320; EG 26693 A 20140611; EP 2300357 A1 20110330; MX 2011000820 A 20110414; MY 158120 A 20160830; RU 2461516 C1 20120920; US 2011120127 A1 20110526; WO 2010009802 A1 20100128

DOCDB simple family (application)

EP 08013158 A 20080722; BR PI0916369 A 20090703; CA 2731306 A 20090703; CN 200980128120 A 20090703; EG 2011070125 A 20090703; EP 09800005 A 20090703; EP 2009004812 W 20090703; MX 2011000820 A 20090703; MY PI20106048 A 20090703; RU 2011106506 A 20090703; US 73750709 A 20090703