

Title (en)  
COMPACT WASTEWATER CONCENTRATOR AND POLLUTANT SCRUBBER

Title (de)  
KOMPAKTER ABWASSERKONZENTRATOR UNTER SCHADSTOFFWÄSCHER

Title (fr)  
CONCENTRATEUR D'EAUX USÉES COMPACT ET ÉPURATEUR DE POLLUANTS

Publication  
**EP 2459488 A4 20130306 (EN)**

Application  
**EP 10805027 A 20100729**

Priority

- US 70546210 A 20100212
- US 22965009 P 20090729
- US 2010043648 W 20100729

Abstract (en)  
[origin: WO2011014616A2] A compact and portable liquid concentrator includes a gas inlet, a gas exit and a flow corridor connecting the gas inlet and the gas exit, wherein the flow corridor includes a narrowed portion that accelerates the gas through the flow corridor. A liquid inlet injects liquid into the gas stream at a point prior to the narrowed portion so that the gas-liquid mixture is thoroughly mixed within the flow corridor, causing a portion of the liquid to be evaporated. A demister or fluid scrubber downstream of the narrowed portion removes entrained liquid droplets from the gas stream and re-circulates the removed liquid to the liquid inlet through a re-circulating circuit. Fresh liquid to be concentrated is also introduced into the re-circulating circuit at a rate sufficient to offset the amount of liquid evaporated in the flow corridor.

IPC 8 full level  
**C02F 1/04** (2006.01); **B01D 1/14** (2006.01); **B01D 1/16** (2006.01); **B01D 1/20** (2006.01); **C02F 1/16** (2006.01); **C02F 1/66** (2006.01); **C02F 1/70** (2006.01); **C02F 11/13** (2019.01)

CPC (source: EP RU US)  
**B01D 1/14** (2013.01 - EP); **B01D 1/16** (2013.01 - EP); **B01D 1/20** (2013.01 - EP); **C02F 1/02** (2013.01 - RU); **C02F 1/048** (2013.01 - EP US); **C02F 1/16** (2013.01 - EP); **C02F 11/16** (2013.01 - RU); **B01D 53/77** (2013.01 - EP); **C02F 1/66** (2013.01 - EP); **C02F 11/13** (2018.12 - EP RU US); **C02F 2101/101** (2013.01 - EP); **C02F 2101/16** (2013.01 - EP); **C02F 2103/001** (2013.01 - EP); **C02F 2103/06** (2013.01 - EP); **C02F 2103/10** (2013.01 - EP); **C02F 2201/008** (2013.01 - EP); **C02F 2209/005** (2013.01 - EP); **Y02E 50/30** (2013.01 - EP); **Y02T 50/678** (2013.01 - EP)

Citation (search report)

- [Y] US 2008110417 A1 20080515 - SMITH DAVID G [US]
- [Y] US 4079585 A 19780321 - HELLEUR DONALD EDMUND
- [Y] US 5238580 A 19930824 - SINGHVI SANJAY S [US]
- [A] WO 2008112793 A1 20080918 - GEI DEV LLC [US], et al
- [A] US 2006000355 A1 20060105 - OGURA KAZUMASA [JP], et al
- See references of WO 2011014617A2

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 SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2011014616 A2 20110203; WO 2011014616 A3 20110616;** AR 077508 A1 20110831; AR 077776 A1 20110921; AR 077781 A1 20110921; AU 2010279004 A1 20120202; AU 2010279004 B2 20140724; AU 2010279005 A1 20120202; AU 2010279005 B2 20150326; AU 2015203696 A1 20150716; AU 2015203696 B2 20170601; AU 2017221790 A1 20170921; BR 112012001718 A2 20170613; BR 112012001724 A2 20161122; CA 2768188 A1 20110203; CA 2769381 A1 20110203; CN 102471094 A 20120523; CN 102471094 B 20151216; CN 102471095 A 20120523; CN 102471095 B 20150819; CN 105126366 A 20151209; CN 105126366 B 20170905; EP 2459488 A2 20120606; EP 2459488 A4 20130306; EP 2473446 A2 20120711; EP 2473446 A4 20130327; JP 2013500852 A 20130110; JP 2013500853 A 20130110; JP 2016040037 A 20160324; JP 5823963 B2 20151125; MX 2012001291 A 20120326; MX 2012001292 A 20120326; RU 2012104408 A 20130910; RU 2012104412 A 20130910; RU 2015113354 A 20151110; RU 2015113354 A3 20180913; RU 2547117 C2 20150410; RU 2551494 C2 20150527; RU 2672451 C2 20181114; UA 105049 C2 20140410; UA 107800 C2 20150225; WO 2011014617 A2 20110203; WO 2011014617 A3 20110616

DOCDB simple family (application)  
**US 2010043647 W 20100729;** AR P100102736 A 20100728; AR P100102757 A 20100729; AR P100102758 A 20100729; AU 2010279004 A 20100729; AU 2010279005 A 20100729; AU 2015203696 A 20150624; AU 2017221790 A 20170830; BR 112012001718 A 20100729; BR 112012001724 A 20100729; CA 2768188 A 20100729; CA 2769381 A 20100729; CN 201080034379 A 20100729; CN 201080034380 A 20100729; CN 201510438348 A 20100729; EP 10805026 A 20100729; EP 10805027 A 20100729; JP 2012523025 A 20100729; JP 2012523026 A 20100729; JP 2015200065 A 20151008; MX 2012001291 A 20100729; MX 2012001292 A 20100729; RU 2012104408 A 20100729; RU 2012104412 A 20100729; RU 2015113354 A 20100729; UA A201201696 A 20100729; UA A201201697 A 20100729; US 2010043648 W 20100729