

Title (en)

Apparatus and method for generating and distributing bubbles in a gas-liquid mixture

Title (de)

Vorrichtung und Verfahren zur Erzeugung und Verteilung von Blasen in einer Gas-Flüssigkeitsmischung

Title (fr)

Appareil et procédé pour générer et distribuer des bulles dans un mélange gaz-liquide

Publication

EP 2060318 B1 20100915 (EN)

Application

EP 08165901 A 20081006

Priority

NO 20075910 A 20071115

Abstract (en)

[origin: EP2060318A1] The invention concerns n apparatus for providing and distributing bubbles in a gas-liquid mix transported in a flow path of a pipe. The apparatus is arranged in line with the pipe and comprises in successive order an inlet region, an obstacle unit and an outlet region. The inlet region is arranged for the entering of gas-liquid mix containing initial sized bubbles, the inlet region is provided to accelerate and direct the flow into the obstacle unit. The obstacle unit is provided with structure elements to produce a turbulence whereby reducing the initial sized bubbles to smaller sized bubbles and dispersing the bubbles in the flow. The outlet region is arranged for the entering of the gas-liquid mix containing smaller sized bubbles and has provisions to accelerate the flow and maintain an even distribution of smaller sized bubbles in the flow for further transport in the pipe. The invention also include an method.

IPC 8 full level

B01F 3/04 (2006.01); **B01F 5/04** (2006.01); **B01F 5/06** (2006.01)

CPC (source: EP)

B01F 23/2323 (2022.01); **B01F 23/237612** (2022.01); **B01F 23/454** (2022.01); **B01F 25/3131** (2022.01); **B01F 25/433** (2022.01);
B01F 25/4335 (2022.01); **B01F 25/4338** (2022.01); **B01F 25/45** (2022.01); **B01F 25/4521** (2022.01)

Cited by

CN106076136A; RU196142U1; US2021370244A1; EP2433706A1; CN112156731A; CN104014263A; CN115475545A; US10994311B2;
JP2014104441A; CN109731490A; WO2015072142A1; WO2021242943A3; WO2014191690A1; WO2009106041A1; WO2014184585A3;
WO2012103602A1; WO2014057230A1; US10099262B2; TWI642475B; WO2023008433A1; WO2023188485A1

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 MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 2060318 A1 20090520; EP 2060318 B1 20100915; AT E481160 T1 20101015; DE 602008002529 D1 20101028; DK 2060318 T3 20110124;
ES 2352166 T3 20110216; NO 20075910 L 20090518; NO 328780 B1 20100510

DOCDB simple family (application)

EP 08165901 A 20081006; AT 08165901 T 20081006; DE 602008002529 T 20081006; DK 08165901 T 20081006; ES 08165901 T 20081006;
NO 20075910 A 20071115