

Title (en)  
METHOD FOR PUMPING FLUIDS

Title (de)  
VERFAHREN ZUM PUMPEN VON FLUIDEN

Title (fr)  
PROCEDE DE POMPAGE DE FLUIDES

Publication  
**EP 1379756 A4 20050914 (EN)**

Application  
**EP 02709817 A 20020311**

Priority  

- US 0207348 W 20020311
- US 27567701 P 20010312
- US 83874401 A 20010419

Abstract (en)  
[origin: WO02072998A1] The production rate, useful life and operating efficiency of electric submersible pumping systems (ESP) is improved by operating the system so that the motor (220, 320) is cooled by two passes of production. Production fluids remove waste heat from the motor (220, 320) by passing the fluid in contact with the exterior of the motor (220, 320). The improved cooling permits the motor to be operated at a lower temperature improving life and efficiency, and/or to be operated at higher power at a similar temperature. Additionally, oversized and excess equipment is not required, further improving performance and economics for the user. In another aspect, the invention is a method of pumping fluids using a motor having vortex generators (366) on its exterior surfaces or on the interior surfaces of a surrounding shroud.

IPC 1-7  
**E21B 43/00; E21B 43/12**

IPC 8 full level  
**E21B 43/12** (2006.01)

CPC (source: EP US)  
**E21B 43/128** (2013.01 - EP US)

Citation (search report)  

- [X] US 3282031 A 19661101 - VOS EDUARD A, et al
- [A] US 1811948 A 19310630 - LOOMIS WALTER A, et al
- [A] US 5620048 A 19970415 - BEAUQUIN JEAN-LOUIS [FR]
- [A] EP 0357317 A1 19900307 - FRAMO DEV LTD [GB]
- [A] US 4413958 A 19831108 - WEBB ALAN D [GB]
- See references of WO 02072998A1

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)  
**WO 02072998 A1 20020919**; CN 1281847 C 20061025; CN 1507531 A 20040623; EP 1379756 A1 20040114; EP 1379756 A4 20050914

DOCDB simple family (application)  
**US 0207348 W 20020311**; CN 02809753 A 20020311; EP 02709817 A 20020311