

Title (en)
ELECTROSTATICALLY ACTUATED PUMPING ARRAY

Title (de)
ELEKTROSTATISCH BETÄTIGTE PUMPENARRAY

Title (fr)
RESEAU DE POMPAGE A ACTIVATION ELECTROSTATIQUE

Publication
EP 1163446 A1 20011219 (EN)

Application
EP 98965368 A 19981106

Priority
US 9823658 W 19981106

Abstract (en)
[origin: WO0028215A1] A mesopump having a plurality of elementary cells, a process for making the same, and a method of pumping fluids using the mesopump. The cells each have a body forming a cavity having upper and lower electrodes with curved surfaces facing the other electrode. Electrical connections selectively energize the electrodes. A bistable diaphragm is mounted with its major portion located in the cavity between the electrodes so that the diaphragm deflects toward the upper or lower surfaces to conform thereto. A lateral conduit is located at at least one end of the body for fluid communication with the cavity. The lateral conduits are operably connected to a portion of the diaphragm mounted in the body and are opened and closed by movement of the diaphragm. A vertical conduit on at least one curved surface controls flow of fluid by movement of the diaphragm into and out of contact with the vertical conduit. The cells are interconnected to form the mesopump whereby activation of the electrodes causes movement of the diaphragm between the electrodes to move fluid into and out of the body. The preferred mesopump includes sets of three cell groups so that fluid enters a first cell from a source of fluid, is expelled to a second cell through a vertical conduit; expelled via a lateral conduit to a third cell, and expelled therefrom, whereby fluid passes from cell to cell upon activation of the electrodes.

IPC 1-7
F04B 45/047

IPC 8 full level
F04B 43/02 (2006.01); **F04B 43/04** (2006.01); **F04B 45/04** (2006.01); **F04B 45/047** (2006.01)

CPC (source: EP US)
F04B 45/043 (2013.01 - EP US); **F04B 45/047** (2013.01 - EP US)

Cited by
CN113482893A

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

DOCDB simple family (publication)
WO 0028215 A1 20000518; AT E350580 T1 20070115; CA 2350076 A1 20000518; CA 2350076 C 20081230; CN 1327132 C 20070718; CN 1354823 A 20020619; DE 69836836 D1 20070215; DE 69836836 T2 20070628; EP 1163446 A1 20011219; EP 1163446 B1 20070103; HK 1046945 A1 20030130; HK 1046945 B 20080523

DOCDB simple family (application)
US 9823658 W 19981106; AT 98965368 T 19981106; CA 2350076 A 19981106; CN 98814382 A 19981106; DE 69836836 T 19981106; EP 98965368 A 19981106; HK 02108446 A 20021121