

Title (en)
Microfluidic peristaltic pump, method and pumping system

Title (de)
Mikrofluidische peristaltische Pumpe, Verfahren sowie Pumpsystem

Title (fr)
Pompe péristaltique microfluidique, procédé et système de pompe

Publication
EP 2730335 A1 20140514 (DE)

Application
EP 13191012 A 20131031

Priority
DE 102012220403 A 20121109

Abstract (en)
The peristaltic pump (100) has primary and secondary pumping chambers (20,50-52) that are operatively connected to the inflow channel (10) by the primary and secondary channels (30,60-62). A fluidic resistance of the primary channel is different from a fluidic resistance of the secondary channel. The channel is configured to produce a throttling function, such that the primary and secondary membranes (40) are deflected in a time sequence, when a pressure is applied in the inflow channel to produce a pumping function. Independent claims are included for the following: (1) a pumping system; and (2) a method for operating microfluidic peristaltic pump.

Abstract (de)
Die Erfindung betrifft eine mikrofluidische peristaltische Pumpe (100), welche einen Zulaufkanal (10), eine erste Pumpkammer (20), welche über einen ersten Kanal (30) mit dem Zulaufkanal (10) wirkverbunden ist, und eine erste Membran (40), eine zweite Pumpkammer (50), welche über einen zweiten Kanal (60) mit dem Zulaufkanal (10) wirkverbunden ist, und eine zweite Membran (70) aufweist, wobei der fluidische Widerstand des ersten Kanals (30) von dem fluidischen Widerstand des zweiten Kanals (60) verschieden ist, und dabei jeder Kanal (30, 60) eine Drosselfunktion realisiert, so dass die jeweiligen Membranen (40, 70) beim Anlegen eines Drucks in dem Zulaufkanal (10) in einer zeitlichen Abfolge zum Realisieren einer Pumpfunktion ausgelenkt werden.

IPC 8 full level
B01L 3/00 (2006.01); **F04B 43/04** (2006.01); **F04B 43/073** (2006.01); **F04B 43/14** (2006.01); **F04B 9/131** (2006.01)

CPC (source: EP US)
B01L 3/50273 (2013.01 - EP US); **F04B 9/129** (2013.01 - EP US); **F04B 19/006** (2013.01 - US); **F04B 41/06** (2013.01 - US); **F04B 43/073** (2013.01 - EP US); **B01L 2300/0883** (2013.01 - EP US); **B01L 2300/0887** (2013.01 - EP US); **B01L 2300/123** (2013.01 - EP US); **B01L 2400/0481** (2013.01 - EP US); **F04B 43/14** (2013.01 - EP US)

Citation (applicant)
US 7217367 B2 20070515 - HUANG JIANG [US], et al

Citation (search report)
• [XY] WO 02082047 A2 20021017 - CALIFORNIA INST OF TECHN [US], et al
• [XY] CHUN-WEI HUANG ET AL: "Pneumatic micropumps with serially connected actuation chambers", JOURNAL OF MICROMECHANICS & MICROENGINEERING, INSTITUTE OF PHYSICS PUBLISHING, BRISTOL, GB, vol. 16, no. 11, 12 September 2006 (2006-09-12), pages 2265 - 2272, XP020104800, ISSN: 0960-1317, DOI: 10.1088/0960-1317/16/11/003
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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 RS SE SI SK SM TR

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DOCDB simple family (application)
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