Sample preparation by cell guiding using negative dielectrophoresis - DTU Orbit
(03/01/2019)

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In this study, we present a microsystem designed for performing and testing dielectrophoretic (DEP) guiding of biological cells. Baker’s yeast (Saccharomyces cerevisiae) is used as a model organism to study cell guiding in the system. The guiding efficiency as a function of flowrate is investigated and a decreased efficiency with increased flowrate is observed. In addition, the DEP behaviour of the yeast cells at different medium conductivities and applied frequencies is investigated. The chip is easily fabricated in a two-step process: Standard UV lithography techniques are used for electrode fabrication and laser ablation for channel structuring. The channel is seated with an indiumtinoxide (ITO) covered polymethylmethacrylate (PMMA) lid. The ITO serves as a transparent counter electrode. This conducting and transparent lid eliminates difficult top/bottom electrode alignment and gives visual access to the microchannel. (c) 2007 Elsevier B.V. All rights reserved.

General information
State: Published
Organisations: Cell Particle Handling, Department of Micro- and Nanotechnology, Section of Poultry Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, BioLabChip Group, LabChip Section
Contributors: Christensen, T. B., Pedersen, C. M., Bang, D. D., Wolff, A.
Pages: 1690-1693
Publication date: 2007
Peer-reviewed: Yes

Publication information
Journal: Microelectronic Engineering
Volume: 84
Issue number: 5-8
ISSN (Print): 0167-9317
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 1.87 SJR 0.604 SNIP 0.937
Web of Science (2017): Impact factor 2.02
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.69 SJR 0.589 SNIP 0.949
Web of Science (2016): Impact factor 1.806
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 1.35 SJR 0.507 SNIP 0.796
Web of Science (2015): Impact factor 1.277
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 1.44 SJR 0.586 SNIP 0.86
Web of Science (2014): Impact factor 1.197
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 1.45 SJR 0.595 SNIP 0.964
Web of Science (2013): Impact factor 1.338
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 1.44 SJR 0.737 SNIP 0.949
Web of Science (2012): Impact factor 1.224
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 1.8 SJR 0.813 SNIP 1.148
Web of Science (2011): Impact factor 1.557
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.934 SNIP 1.093
Web of Science (2010): Impact factor 1.575
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.834 SNIP 1.098
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.027 SNIP 1.06
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.045 SNIP 1.138
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.966 SNIP 1.093
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.952 SNIP 0.989
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1 SNIP 1.1
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.812 SNIP 0.956
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.712 SNIP 0.711
Scopus rating (2001): SJR 0.558 SNIP 0.645
Scopus rating (2000): SJR 0.502 SNIP 0.568
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.595 SNIP 0.555
Original language: English
Keywords: dielectrophoresis, cell guiding, sample pre-treatment, lab on a chip
DOIs:
10.1016/j.mee.2007.01.236
Source: orbit
Source-ID: 205940
Research output: Research - peer-review; Journal article – Annual report year: 2007