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
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Investigation of liquid flow interaction on wax and cut channel paper-based microfluidic analytical device (μ PAD) (Conference Paper)

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Abstract

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Simple, user-friendly, economical and rapid sensing devices are in urgent demand for diagnostics purposes especially in resource-limited countries. Diagnostics devices fabricated from patterning paper into hydrophilic and hydrophobic regions called paper-based microfluidic analytical devices (μ PADs) have been introduced. In this work, straight line handcrafted channel at dimension of 3 mm width have been constructed as an inexpensive method of fabrication for wax and cut μ PADs channel. For wax channel, wax hydrophobic channel is drawn on the upper side of the paper and heated for 3 minutes on 100 °C of hotplate for the diffusion of wax into the thickness of paper. 10 different viscosities of sucrose solution ranging from 0% to 70% of solute with additional of 2 blind samples is pipetted into the wax and cut channel and left horizontally for liquid flow in a minute. The flow rate is calculated. 3 types of paper which are filter paper, chromatography paper and litmus paper have been tested. In summary, it can be concluded that more viscous liquid will slow down the flow rate of liquid travel inside the wax channel compared to the cut channel and filter paper is chosen as the materials for the fabrication of μ PADs channel. © 2018 Institution of Engineering and Technology. All rights reserved.

SciVal Topic Prominence

Topic: Microfluidics | Analytic equipment | paper-based microfluidic

Prominence percentile: 99.913 

Author keywords

[Cut channel](#)
[Flow rate](#)
[Fluid viscosity](#)
[Paper-based microfluidic Analytical device \(\$\mu\$ PAD\)](#)
[Wax](#)

Indexed keywords

Engineering controlled terms:

[Analytic equipment](#)
[Flow rate](#)
[Hydrophobicity](#)
[Microfluidics](#)
[Viscosity](#)
[Waxes](#)

Engineering uncontrolled terms

[Chromatography paper](#)
[Cut channel](#)
[Fluid viscosity](#)
[Hydrophilic and hydrophobic](#)
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[Sensing devices](#)
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