

Supplemental Information for:

The air-gap PAD: A roll-to-roll-compatible fabrication method for paper microfluidics

Rachel M. Roller,^a Angela Rea,^a and Marya Lieberman^{a*}

^a University of Notre Dame, Department of Chemistry and Biochemistry, Notre Dame, IN, 46556

* Corresponding author's email: mliieberm@nd.edu

Table of Contents

Figure S1.....	S1
Figure S2.....	S2
Figure S3.....	S2
Figure S4.....	S2
Figure S5.....	S3
Table S1.....	S3
Figure S6.....	S4

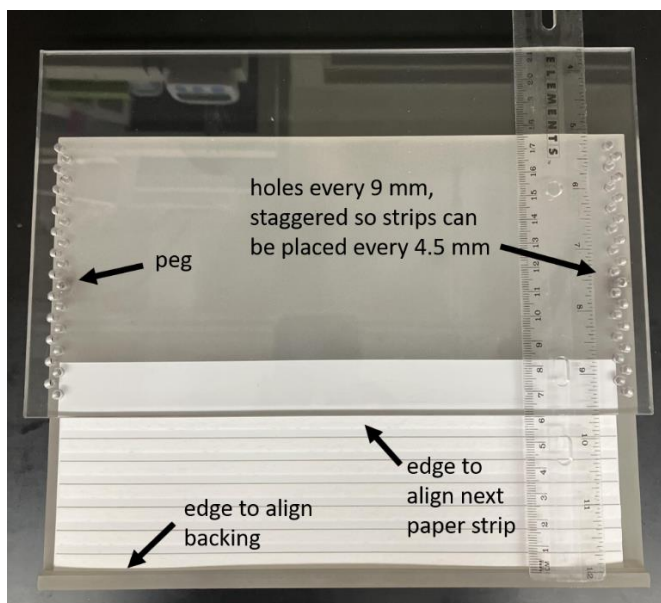


Figure S1. Pegboard for hand-fabrication of air-gap PADs. Ruler shown for scale.

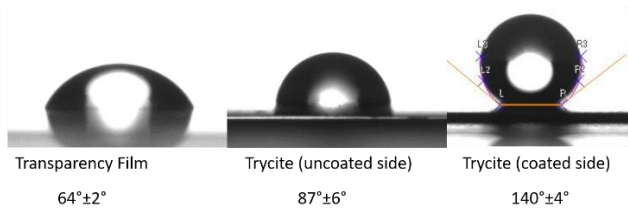


Figure S2. Contact angles for different backing types. Standard deviations from 9 replicate measurements.

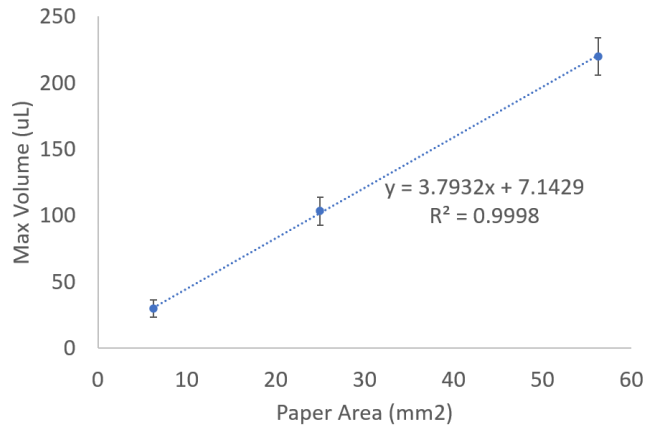


Figure S3. Air-gap device volume as a function of paper area. Error bars show standard deviations for six measurements.

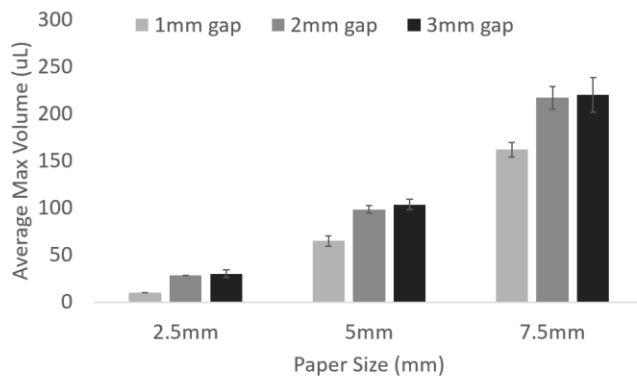


Figure S4. Air-gap device capacity by varying paper size and gap width. Transparency film was used as the backing. Error bars show standard deviation of six measurements.

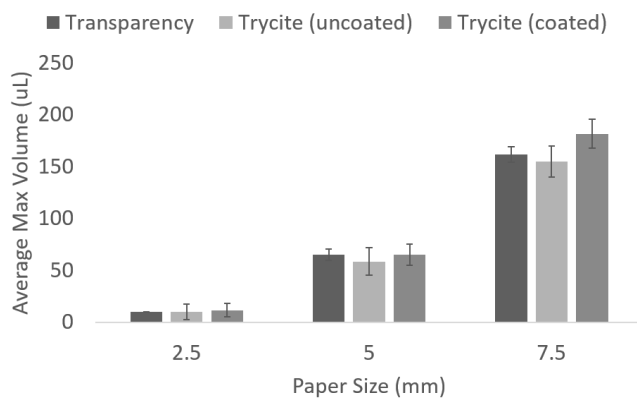


Figure S5. Air-gap device volume with different backing types. All measurements were taken with a 1mm air gap. Error bars show standard deviation of six measurements.

Table S1. Neural network classification accuracy as a function of mobile app operating system and background color.

API	White background accuracy (%)	Black background accuracy (%)	iOS app accuracy (%)	Android app accuracy (%)
Amoxicillin	63	55	68	47
Ciprofloxacin	69	75	69	75
Isoniazid	76	85	75	86
Pyrazinamide	29	68	42	52
Rifampicin	70	63	80	55
Average	61	69	67	62
T-statistic (df = 4)	White vs black	0.72	iOS vs Android	0.48
P-value (2-tailed)	White vs black	0.51	iOS vs Android	0.66

Figure S6. Air-gap 12-lane pharmaceutical-screening PAD images. Top row: amoxicillin, 2nd row: ciprofloxacin, 3rd row: isoniazid, 4th row: pyrazinamide, bottom row: rifampicin.

