# Paper Based Diagnostics for the Developing World

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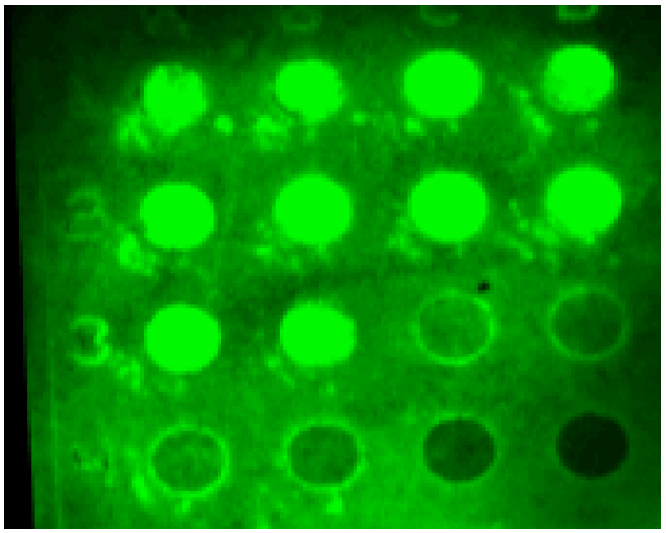
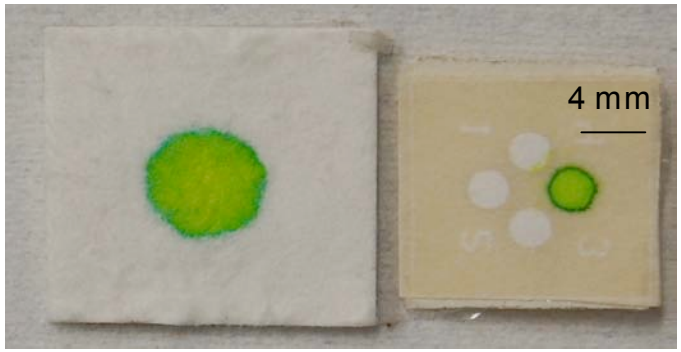
The Whitesides group at Harvard University is working to create diagnostic devices that can be distributed throughout developing nations where diagnosis for infectious diseases are difficult to attain. In order for these diagnostic devices to make an impact in global health care, the devices must be portable, durable, and cost effective. Many point of care (POC) diagnostics that are currently available require additional apparatus and are relatively expensive to fabricate. To eliminate many of these limiting factors, we have been working towards a diagnostic device that is based on patterned paper. Patterned paper creates individual hydrophobic channels that can hold different types of liquids without cross contamination. Using this new technique, we have developed an immunoassay that successfully tests for the presence of Streptavidin. The device is created through a stacking of patterned paper that contains pre-spotted reagents that test for a specific type of virus. Other viruses such as HIV can be detected in the same manner. Because the device is cost effective, developing nations and remote regions of the world will be eventually able to receive rapid diagnosis for many types of infectious diseases.



Fluorescently labeled antibodies that are used in the paper based diagnostic




Prototype Device with green dye to emphasize the flow through design

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