

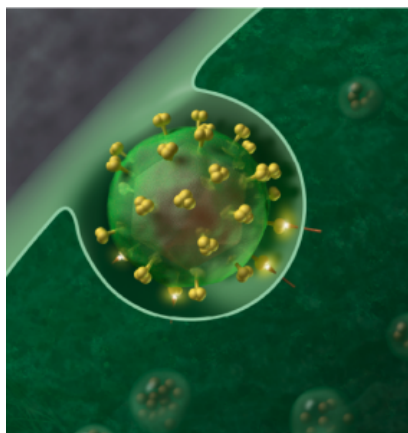
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## New Biosensing Platform to be used in Disease Detection

Posted by [Nan Hu '18](#) / In [News](#) / April 12, 2015

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Researchers from Florida Atlantic University, Stanford University, and Harvard University have developed a new biosensing platform.

Researchers from Florida Atlantic University, Stanford University, and Harvard University have developed a new biosensing platform that can be used to remotely detect and determine treatment options for HIV, *E. coli*, *Staphylococcus*, and other bacteria (1). The materials the researchers developed are thin and flexible and can be made and used without expensive equipment, making them particularly useful for detecting and treating disease in the developing world.

Using the newly developed biosensing platform, diagnosing a disease can be as simple as providing a drop of blood, taking a picture to send the results, and having the diagnosis sent back. The device works by applying electrical and optical sensing mechanisms to newly developed materials that integrate cellulose paper and flexible polyester films. Using different combinations of detection methods, the researchers were able to successfully detect HIV, bacteria such as *E. coli* and *Staphylococcus aureus*, and lymphocytes, which are a type of white blood cell (2).

When a target such as HIV is placed onto the biosensing platform, a series of electrochemical reactions occur, resulting in a change in appearance of the polyester film itself. In the case of bacteria detection, these changes are clearly distinguishable with the naked eye, and can be further analyzed using an image analysis tool and a picture of the polyester film taken from a cell phone (2).

Professor Waseem Asghar, professor of electrical engineering at Florida Atlantic University and co-first author of the study, says that there is “a dire need for robust, portable, disposable and inexpensive biosensing platforms for clinical care,” which is the study’s main motivation (1). Existing platforms are quite complex in terms of design and require expensive equipment to make. These newly developed platforms, since they are relatively simple and affordable, may have broad applications in fields like drug development and environmental monitoring.

References:

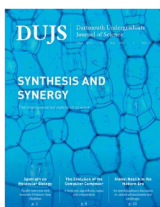
1: Florida Atlantic University. (2015, April 2). Smart phone diagnosis? Biosensing platform quickly and accurately diagnoses disease and monitors treatment remotely. *ScienceDaily*. Retrieved April 3, 2015 from [www.sciencedaily.com/releases/2015/04/150402092042.htm](http://www.sciencedaily.com/releases/2015/04/150402092042.htm)

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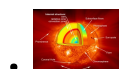
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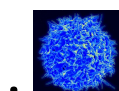
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