SpinDx "Lab on a Disc"

Robert Valenti, *Biomedical Engineering, University of Rhode Island*
BME 281 Second Presentation, April 1, 2013 <Robert_Valenti@my.uri.edu>

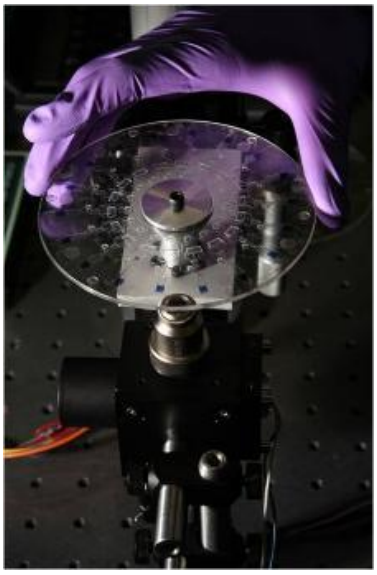
***Abstract*—Sandia National Laboratories have developed a break-through device that can conduct diagnostics with fluid samples at a rate of 15 minutes per sample..**

I. Introduction

Sandia National Laboratories have recently invented a device that addresses diagnostic issues in the medical world. Named the "SpinDx", the device is capable to process up to 64 assays (a medically-investigative procedure) a fraction of the time of currently existing methods. This new diagnostic procedure has the potential to locate deadly conditions days to weeks sooner, including but not limited to heart attacks, strokes, infections and specific cancers. By detecting these conditions sooner, the amount of treatment potentially needed can be drastically reduced, overall reducing the total amount in costs for health care.

II. Methods

The disc sitting on the top of the device behaves as its own laboratory. By merely loading a small sample of a patient's fluids onto the device. Types of fluids that can be tested include blood, urine and saliva. The device has the potential to be applied to a myriad of tests, however the only things currently mentioned are diagnostics and blood cell counts.



III. Results

Currently existing diagnostic methods take days to weeks to diagnose a patient's illness. The SpinDx can currently run a diagnostic on a sample in approximately 15 minutes. That means that before a patient has left their doctor's office, they can know what is wrong with them. The cost of a single diagnostic disc costs approximately ten cents to make, while currently existing tests cost $20-$200 per test. The SpinDx allegedly can also be used in other fields as well, such as in food and environmental marketing.

IV. Discussion

This piece of technology is very exciting. In an age where medical costs seem to be getting higher and higher, it's an utmost concern that new technology is created to alleviate these rises in costs. The SpinDx does just that by making a commonly done task cheaper and more easily accessed by medical professionals and the public. It's entirely conceivable that the SpinDx can be used in more active situations such as an emergency vehicle. Only time will tell.

References

[1] http://www.sandia.gov/index.
[2] http://www.biomedicalblog.com/sandias-new-medical-diagonstic-tool-spindx/255000/