

Interview Note with Samsung Electronics



Samsung Electronics giant is looking to invest 1.2 trillion won (\$9.85 billion) in the healthcare business by 2020 with the goal of achieving 10 trillion won in annual sales that year.

The new device, which checks levels of glucose, cholesterol and 17 other substances in the blood, is smaller and cheaper than conventional blood-testing equipment, and targets small- and medium-sized hospitals. Yole Développement recently had the opportunity to interview Mr. Hanshin Kim, Director, HME Business Team at Samsung Electronics:

Yole Développement: Samsung recently launched a point of care analysis system. Could you describe this technology?

Hanshin Kim: It is a fully integrated bench top device that can perform multiple biochemical analysis within 12 minutes. It features a sliding tray approximately the size of a CD where blood samples are placed, and the device automatically performs the test and provides results at the press of a button. The whole blood is applied directly to the disposable "lab-on-a-disc" containing different kinds of freeze dried reagents for the blood test. It is able to check 19 clinical chemistry analytes including cholesterol, glucose level for diabetes, and symptoms of heart disease or liver and kidney impairments. It employs proprietary technologies including micro-fluid mechanics and micro-valves within the design.

YD: Could you describe a bit more the micro-fluidic disc for our readers?

HK: Centrifugal force is utilized as propulsion force in lab-on-a-disc. Various fluidic processing steps such as the metering of liquid sample, mixing of reagents, fluid separation, and sample splitting are automated simply by implementing different spinning profiles. And also the laser irradiated ferrowax microvalves (LIFM) are embedded in the discs for valving. Upon excitation with a laser diode, iron oxide nanoparticles within the paraffin wax act as integrated nanoheaters, causing the paraffin wax to melt. Due to LIFM, various liquid buffers and reagents can be prefilled in the discs, and multiple analysis steps are integrated on a single centrifugal microfluidic platform.

YD: The product has been launched exclusively on the Korean market. What are the different types of user today, and what are your future targets?

HK: The main users are small clinics and hospitals. It is used as a point of care diagnostic device for blood testing in intensive care and emergency units. The product is particularly appreciated by the users because of fast turnaround time, accurate as the laboratory analyzers, and ease of use. Our objective is to provide the point of care technology which will support physician's prompt and accurate diagnosis. The next version of the product will be suited to immunoassays as well, which will open opportunities for bigger markets.

YD: How is the product distributed among the users? Are you working with partners?

HK: Although Samsung Electronics has a significant reputation and a strong network in South Korea, we contracted a JW Pharmaceuticals, a Korean pharmaceutical manufacturer, to promote and distribute the product locally. Due to the fact that the diagnostic market is a very conservative, JW Pharmaceuticals, which already have a good healthcare network, was chosen since this is a new market for Samsung Electronics.



Blood testing device (Courtesy of Samsung)



Entry system disc (Courtesy of Samsung)

YD: When do you expect to propose this product on the international market?

HK: Since it is the first product for Samsung Electronics on the diagnostic market, we only launched the product domestically with KFDA approval. We are planning to launch the product internationally in the very near future, so we will prepare for the regulatory approvals such as 510(k).



Mr. Hanshin Kim, Director, Samsung Electronics

Mr. Hanshin Kim is a director of HME (Health & Medical Equipment) Business team of Samsung Electronics. He is in charge of IDS (*in-vitro* Diagnostics Solutions) Group. He received his M.S. in Biochemistry

from Yonsei University, Korea in 1993. From 2000 to 2009 he was a researcher at the Samsung Advanced Institute of Technology. In 2005, he received MBA from Sogang University, Korea. His current research interests are diagnostic system, POCT (Point of Care Test) devices and connected healthcare solutions.

About Samsung Electronics

Samsung Electronics Co., Ltd. is a global leader in semiconductor, telecommunication, digital media and digital convergence technologies with 2009 consolidated sales of US\$116.8 billion. Employing approximately 188,000 people in 185 offices across 65 countries, the company consists of eight independently operated business units: Visual Display, Mobile Communications, Telecommunication Systems, Digital Appliances, IT Solutions, Digital Imaging, Semiconductor and LCD. Recognized as one of the fastest growing global brands, Samsung Electronics is a leading producer of digital TVs, memory chips, mobile phones and TFT-LCDs.

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