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# Curiox cashes in on new bioassay technology

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The pharmaceutical industry has been under increasing pressure to deliver drugs to the market faster and more efficiently. In an effort to combat this, Dr Namyong Kim, who leads a team of scientists at the Institute of Bioengineering and Nanotechnology (IBN), under the Agency for Science, Technology, and Research (A*STAR) in Singapore developed the new bioassay technology called DropArray.

The new bioassay technology is a miniaturization platform that can reduce the amount of material and reagent required to conduct a cell-based assay and reduce the reaction time. Curiox Biosystem's patent-pending miniaturization platform, DropArray, provides up to 25 times savings in sample and reagent consumption, and up to 60 percent reduction in assay time.

Targeting research labs and high-throughput screening facilities in life sciences and drug discovery where bioassays are a necessary part of the research process, Curiox Biosystems was founded in 2008, as a spin off from IBN, backed primarily by Nanostart AG, a venture capital firm in Germany, and Exploit Technologies, the commercialization arm of A*STAR.

## Genesis

Curiox began its operations with an entrepreneurial team of four members. The founding team comprised experts in surface chemistry and engineering for the development of products; as well as an administrative officer to ensure smooth business operations of the company.

In the first year of its launch, Curiox received positive responses from its beta customers in Singapore, mainly from the research groups in the National University of Singapore (NUS), Institute of Molecular and Cell Biology (IMCB), and Experimental Therapeutic Center. More recently Curiox has entered into a sales partnership agreement with Seoul-based BioBud covering the exclusive distribution of DropArray products in Korea, a growing biotechnology market.

Presently, seven laboratories worldwide are using the DropArray platform and the number is rising. Curiox has added three additional strategic distributors to its network. These distributors serve the US, South-East Asia and Japan.

Curiox has introduced new high throughput products to its pipeline. These are the DropArray HT200 instrument and DropArray 384 'wall-less' plates. The introduction of this new product line, will allow Curiox to cater to the high-end pharmaceutical, biotech and academic screening centers that require liquid handling systems to screen compound libraries for research and drug development.

Considering the opportunity, potential Nanostart has increased its stake in Curiox to almost 19 percent by a follow-up investment through its Nanostart Singapore Early Stage Venture Fund I. The investment is part of a second financing round, in which several experienced life science investors as well as a corporate investor joined as new investors in Curiox. With this Nanostart will continue to remain as the lead investor in Curiox. This second round of financing will allow Curiox to direct more funds to marketing and sales for penetration into the US and European markets.

The US represents Curiox's largest potential market with more than 12,000 suitable academic and government labs, which spent $14.30 billion on lab instruments, consumables and reagents in 2005, and more than 14,000 industrial pharma and biotech labs, which spent $37.40 billion in 2005.

## Key achievements

Since its launch, Curiox's DropArray technology has contributed to enabling breakthrough clinical research in the field of ophthalmology. Curiox is now collaborating with the Singapore Eye Research Institute (SERI) to develop a portable diagnostic platform, for near-the-patient diagnosis of eye-related diseases.

The new platform, for the first time, allows researchers at the SERI to perform assays of tears from the eye to detect proteins associated with inflammatory diseases such as dry eye. Currently, there are no products available in clinics, that are able to conduct such sensitive immunoassays and with several markers simultaneously. This will significantly enhance the quality of medical service.

Curiox's innovation continued to attract the attention of the investors. It was selected under Singapore's Technology Enterprise Commercialization Development scheme of SPRING, to develop table-top, DropArray-based near-the-patient ELISA instrument. Furthermore, International Enterprise (IE), an agency under the Ministry of Trade and Industry spearheading the development of Singapore's external economy has allowed Curiox to set up an overseas marketing office in the US, at a subsidized rate under its Singapore's International Capability Program.

Besides the commercials, Curiox received accomplishments for its research as well. Its DropArray was chosen as one among the eight emerging laboratory automation technologies worldwide by a panel of industrial experts. Curiox is the first Asian start-up company ever to receive the LabAutomation Innovation AveNEW Award. At the same time, Curiox performed beta-testing with leading pharmaceutical and biotech companies in the US for its high throughput DropArray HT200 instrument.
"Curiox's strategy is to establish itself in the research and screening markets with the DropArray HT200. Eventually, Curiox hopes to venture into the diagnostic and point-of-care markets, with its platform DropArray technology," says Dr Namyong Kim, while commenting about his future plans for the company.

On receiving the BioSpectrum Asia Pacific Emerging Company of the Year 2010 Award, Dr Namyong Kim, says, "Curiox has come a long way from its initial R&D phase to a start-up that is ready to enter international markets with products. To have achieved so much international, regional, and local recognition at an early stage, has been surprising for a small company in Singapore, but is evidence of the innovativeness of our platform DropArray technology. We are grateful to BioSpectrum for

recognizing us as an emerging company in biomedical science for 2010, and we hope to put Singapore on the map as a hub for biomedical innovation in the coming years," he concludes.