BioSpectrum the business of Bio & Health Sciences

Bigtec making inroads into point of care diagnostics

04 February 2010 | News

Image not found or type unknown

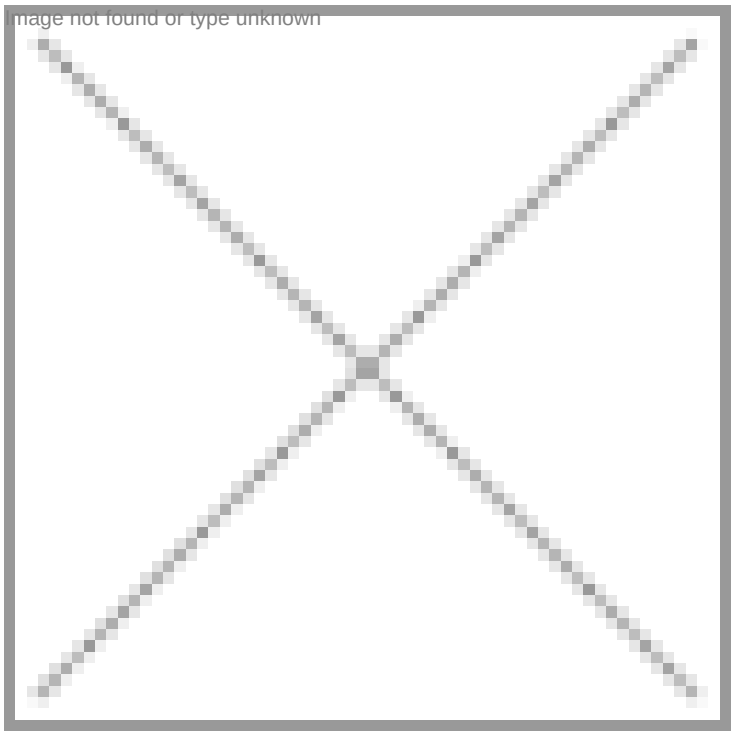
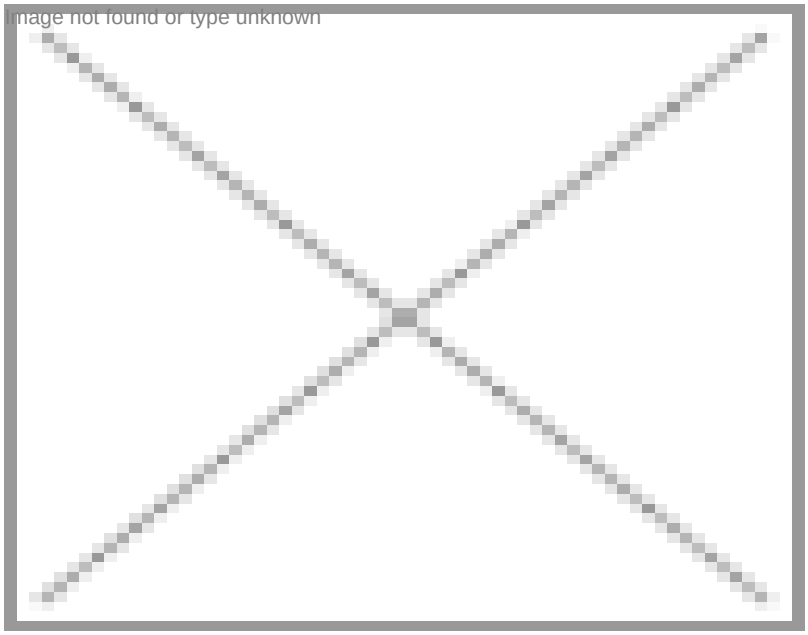


Image not found or type unknown



Bigtec Labs has developed a handheld diagnostic platform for rapid pathogen detection of any disease and allows DNA amplification. Currently, the company is validating the product specifically for hepatitis B, C and HIN1 where with a single

drop of blood the diagnosis can be made within minutes

The Society for Innovation and Development (SID) Entrepreneurship Center at the Indian Institute of Science (IISc) has housed several companies engaged in biotech research. While many have moved out of the campus and setting up their own dedicated facilities, others continue to reside there as they believe the air in IISc is driving innovation in their labs.

Bigtec, a biomedical diagnostic research and development company in SID develops simplified diagnostic kits utilizing the disciplines of microelectromechanical systems (MEMS), optics, molecular biology, bioinformatics and information technology. It has associated itself with scientists at IISc and other such renowned research institutions in the areas of infectious diseases and nanotechnology.

Headquartered in Bangalore, Bigtec Labs was founded in 2000. Its core competencies range from the integration of chemistry, nanobiotechnology and MEMS to genetics and science/ engineering. The research-based organization is constantly exploring new frontiers while also tackling the current real world issues and making inroads into the future.

This is evident from the fact that the company is currently at an advanced stage in the realization of a MEMS-based nucleic acid amplification platform that can be extended to diagnose several diseases including the H1N1. Such a system can be tailored to accept whole blood samples or samples with minimal processing, extending the diagnosis capability to remote locations with minimal facilities.

Using this platform, results are available in a few minutes, making it an ideal platform for doctor's office disease monitoring, thus enabling a paradigm shift in modern healthcare and diagnostics. The project is supported by the New Millennium India Technology Leadership Initiative (NIMITLI) from Council of Scientific and Industrial Research (CSIR), Government of India. This tripartite research program commenced in January 2006 with Bigtec Labs, supported by Indian Institute of Science and Indian Institute of Integrative Medicine, Jammu. A monitoring and advisory committee had the research scrutinized at every stage of progress.

Bigtec Labs' handheld point-of-care diagnostic equipment is designed to bring the power of bench top laboratory equipment to the clinician by providing rapid, low-cost near-care diagnostics. “Our battery operated, real-time micro-PCR is poised to revolutionize medical analysis and treatment in-field, and in the laboratory, by reducing the analysis time and driving down the cost of medical diagnostics by orders of magnitude,” claims Chandrasekhar Nair, director of Bigtec Labs. Using the state-of-the-art MEMS technology, the device is slated to be at the cutting-edge of medical diagnostics for years to come. “This is in keeping with our vision of providing accurate, affordable diagnostics at point of care,” he adds.

“The platform is designed for the diagnosis of infectious diseases irrespective of whether the causative organisms are bacteria, virus, fungi or parasites. “Independent, third party validations of our device for hepatitis B detection has been completed successfully by an organization certified as a Center for Excellence in Liver Diseases by the Government of India. Multi-centric clinical trials at internationally-renowned centers will commence shortly,” shares GM Kini, co-founder and MD, Bigtec Labs.

India has around 80 million hepatitis-B positive people and it is estimated that around 300 million tests are conducted annually. “Our platform is affordable for both healthcare providers and patients. A real-time PCR platform costs lakhs and a confirmatory hepatitis test on PCR costs in thousands. The Bigtec platform will be made available for approximately Rs 1 lakh and a test would work out to only in hundreds,” shares Nair.

Capitalizing on the multiple applications of BioMEMS, the company is also working towards replicating the chip for diagnosis of chikungunya, dengue, malaria, HIV and HPV. The novel Micro Thermal Cycler Diagnostic Platform (MTCDP) is also being recommended to extend its use for H1N1 detection for the surveillance/ diagnosis of swine flu. Discussions on H1N1 detections at transit points using Bigtec Labs' platform have been initiated with a nodal government laboratory.

The validation will be completed next month after which the company will release the first prototype for custom manufacture. The company intends to license the technology for production and discussions are on with players in India and abroad. Currently, Bigtec Labs is operationalizing a go-to-market strategy. However, it will be looking for an ideal marketing partner.

Commenting on the business model, Nair says, “Bigtec Labs' business model is to translate laboratory technologies to completely validated market-ready technologies and go-to-market with these technologies through appropriate collaborations, while addressing certain markets ourselves.”

The nine-year-old Bigtec Labs is still in a pre-revenue mode. The company also has SAP consulting and software development arm named Deciphar. The company's revenue streams are from SAP business services, software engineering training and consulting, and phase I clinical trial software sales. However, its value-added assignments are in the areas of

biotherapeutics and handheld point of care diagnostics. The company uses internal source of seed funding earned from its IT consulting and services arms for incubation activities in the areas of bioengineering.

— Jahanara Parveen in Bangalore