

## **TDB supported science-based startups play critical role in combating COVID 19**

Science-based startups are playing a crucial role in proactively bringing technologies for combatting the COVID 19 pandemic to the people and helping the nation deal with the crisis.

As researchers, industrialists and entrepreneurs synergized their capabilities and efforts to fight this massive battle at all fronts, several science-based startups brought out new technologies, repurposed their existing technologies, scaled up operations, and commercialized them with support from the government.

From a situation where India was caught unawares by a rapidly emerging pandemic situation, existing capability, infrastructure and resources were managed judiciously to increase the production capacity for PPE kits, masks, testing infrastructure, and research for vaccines to empower the country to get a handle over the crisis.

Financial support from the Technology Development Board (TDB), a statutory body of the Department of Science and Technology, helped several startups to commercialize their products like testing kits, masks, sanitisers, thermal scanners, and medical devices to bring about meaningful contributions in India's fight against COVID 19. It was triggered by invitation for proposals from companies specifically seeking solutions for fighting COVID 19 pandemic on 28 Mar 20 for providing financial support. Encouraged by invitation, several startups put in innovative proposals which helped commercialize a range of technologies by tiny science-based startups and bring innovative solutions to fight the pandemic.

**Pune-based Mylab Discovery** was the first indigenous company to have developed a real-time PCR-based molecular diagnostic kit that screens and detects samples of people who display flu-like symptoms. The kit was developed, approved by ICMR and CDSCO, and deployed in a very short time considering the national emergency. With support from TDB, production of kits was ramped up in short span of time from 30,000 tests to 2 lakhs tests per day.

Further, the company has developed a highly sensitive antigen kit and reached more than 2 crore Indians in remote areas who did not have access to RT-PCR testing as well as Compact XL to automate RT-PCR testing and resolve delays and errors in diagnostics for millions of Indians. The company also designed special labs and took them to interiors of Maharashtra, Goa, and many parts of the country and deployed Mobile RT-PCR Labs in Rural and Urban Areas during the second wave.

Mylabs, which has recently developed a home testing kit called "COVISELF", India's first self-test kit and ramping up its commercialization, has emerged as a Unicorn during this crisis and is expected to further play a critical role with respect to testing for COVID 19.

"Science and Technology are best when they create a seamless, end-to-end chain of value from knowledge creation to knowledge consumption, from R&D to innovation to the creation of new socio-economic opportunities. The stories of commercialization of the Indian tech products of relevance by the timely support of TDB brings to fore the last mile translation of knowledge to new opportunities," said Prof Ashutosh Sharma, Secretary, DST.



*RT-PCR test Kit: PathoDetect*



*Rapid Antigen test Kit: Pathocatch*



*Mobile RT-PCR Labs*



*Self Diagnostic Kit: CoviSelf*

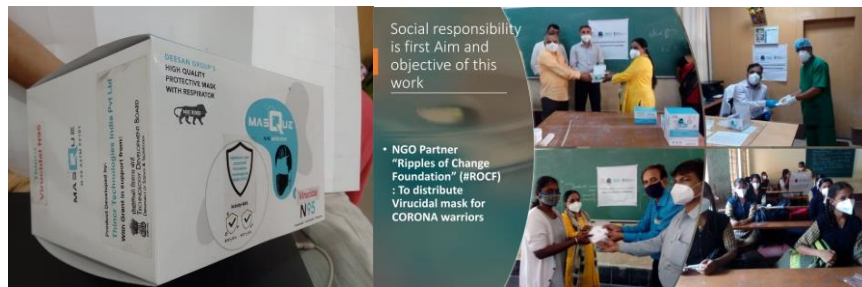
***M/s Mylabs Discovery Pvt. Ltd., Pune Products***

**A Delhi-based company called Nanoclean Global** has assembled and installed the semi-automatic N95 mask production machine and started commercial-scale production of N95 masks. The company, which has distributed one lakh N95 Masks to the Delhi Police, has supported India's fight against COVID 19 by manufacturing and providing more than 3.0 lakhs N95 masks for the citizens.



*N 95 Masks for Delhi Police*

Pune-based Thincr Technologies India developed low-cost and efficient masks coated with antiviral agents to protect spread and protection of COVID-19 and other viral infections. They are also involved in the coating and 3D printing of anti-viral agents on the masks as a preventive measure against COVID-19. Having commenced commercialization of its masks, they have distributed 6000 antiviral coated masks to various Government Organizations across the country.



*Antiviral Masks distribution through NGO to various Organizations*

**Evobi Automations, Bangalore** has developed Ultraviolet Sanitizers in two different models, one of which is portable and distributed in various hospitals in Mumbai, Pune, and various Government schools across the country. They have sold more than 500 UV Sanitizer boxes and are receiving orders from various organizations.



*Distribution of UV Sanitization Boxes to various Organizations*

A Portable X-Rays machine with Digital Imaging and Battery Back-Up has been developed by Coimbatore-based **Iatome Electric India**, which is of considerable support in the isolation wards and Intensive Care Units of the COVID 19 management set-up. It can facilitate X-ray imaging in remote & rural locations with limited or no power. It has also deployed the first version of the digital Chest X-Ray machine for trial in hospital setting.

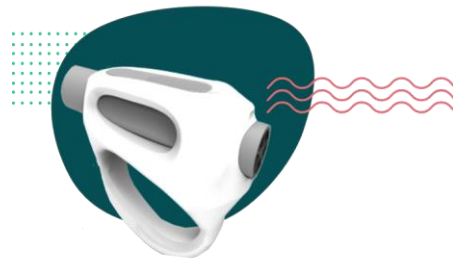


*Trials of Mobile Digital X-Ray*

Pune-based Briota Technologies have developed a cost-effective digital handheld spirometer called “SpiroPRO” useful for measuring and monitoring lung capacity,

diagnosing lung infection, and its effect on lung capacity. The product comes with a Mobile App, NEHA (Nurse Educator and Health Assistant), to assist during monitoring of lung condition and managing Ventilator support with telemedicine/tele counselling facility.

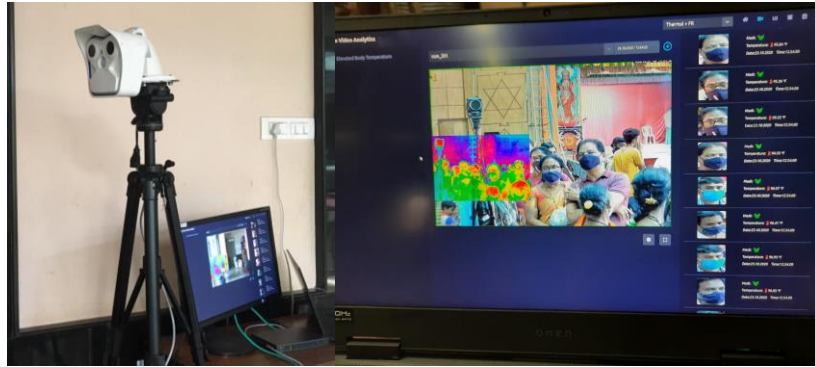
The company, which was amongst the top finalists at the **11th edition of Aegis Graham Bell Award under Innovative diagnostic solutions**, developed a questionnaire-based App called 'SAVE' that was provided to MCGM (Mumbai Municipal Corporation) and some private players to check the spread of COVID among its poorer population. More than 100 people could get emergency medical help from MCGM and hospitals, based on the score of this App. The ones with medium symptoms were connected to doctors via video conferencing.



*Handheld Spirometer: SpiroPRO; M/s Briota Technologies Pvt Ltd, Pune*

Bangalore-based **Cocoslabs Innovative Solutions** developed and commercialized a high-accuracy and contactless thermal analytics product for detection of elevated body temperature along with automated checking for face masks and social distance compliance. In India, it is the first company to launch a thermal analytics solution in India for automatic temperature checking in free-flow crowds, thereby eliminating waiting time and exposure risks. The solution can screen over 10,000 people in a single day with a single unit when deployed in crowded places like railway stations, airports, bus stands, government offices, hospitals. It can also detect people not wearing a mask or improper mask-wearing.

The funding support from TDB allowed the company resources to be freed for working on new solutions. The company, which also has contactless attendance with face recognition along with thermal analytics up their kitty, is currently working with other companies that are looking to set up post-COVID compliance protocols by using this solution to reopen their offices. They are working on AI-sensor for hospitals that will monitor oxygen levels in oxygen tankers and alert authorities well in advance to enable better planning by obtaining oxygen availability data in real-time and ensure equitable supply at critical times.



*Thermal Scanning Camera*

*Software Output Image*

*M/s Cocoslabs Innovative Solutions Pvt. Ltd., Bangalore.*