



## Press Release

### **IIT Hyderabad's Prof Shiv Govind Singh developed India's First Bio-electronic COVID-19 Rapid Electronic Test Kit, "Covi-Home"**

***Validated by CCMB Hyderabad (ICMR partner institute), Covi-Home is ready for Technology Transfer.***

#### **Highlights:**

- Validation Report: Specificity: 98.2%  
Sensitivity: 91.4% Efficiency: 94.2%
- Works with Oral/ Nasopharyngeal Swabs,  
Testing Volume: < 10 µL
- Oligo based testing (Equivalent to RT-PCR testing
- Smartphone-based Home-testing
- Test results within 30 min
- Low cost ~Rs. 300/Test
- No RNA-extraction required
- No RT-PCR required for load amplification and testing

**Hyderabad, July 14, 2021:** Indian Institute of Technology Hyderabad Researchers' Prof Shiv Govind Singh, Department of Electrical Engineering, has developed an Artificial Intelligence-powered COVID-19 test that can be performed at an affordable cost at home. This test kit can produce results within 30 minutes for both symptomatic and asymptomatic patients. ***The major benefit of this testing kit is that it does not require RT-PCR (Reverse Transcription Polymerase Chain Reaction), an expert human resource, and a BSL 2 lab facility for the extraction of RNA, so one can easily take the test at home.***

CSIR-CCMB has performed the validation of the rapid RNA electronic diagnostic device for detection of SARS-Cov-2 virus in the swab samples independently with the in-house samples and hospital samples as advised by ICMR. CCMB. These samples were confirmed for their positivity or negativity by the RT-PCR method. Validation reports confirmed the kit's **efficiency 94.2%, Sensitivity 91.3%, and Specificity 98.2%.**

Each test costs around Rs. 400 now. ***However, mass production of the testing kit will help reduce the cost to around Rs. 300 per test.***

The testing kit was developed by a team led by Prof. Shiv Govind Singh, Department of Electrical Engineering, IIT Hyderabad. Dr. Suryasnata Tripathy, Ms. Supraja Patta, Ms Swati Mohanty, and other students of Prof. Shiv Govind Singh's Research Team with the funding agency support. Initial clinical trial and testing of the device was performed at ESIC Medical College and Hospital in Hyderabad. **Prof Singh said, "Dean ESIC, Prof Srinivas M, and his team Dr Imran Ahmed Siddiqui, Dr Swathi Suravaram, and Dr Rajiv Bandaru have played big role in successful development of this novel kit".**

**Speaking about the role of IIT Hyderabad in helping tackle the COVID-19 pandemic, Prof B S Murty, Director, IIT Hyderabad, said, "IITH has come up with many unique & novel socio-technical initiatives and delivered remarkable results this pandemic. Prof Shiv Govind's "Covi-Home" is one such admirable milestone. I am confident it will play a significant role in the safe diagnosis of the COVID-19 and minimize its spread".**

A major objective of the research team in coming up with this Test Kit was to break the transmission chain through affordable testing. **Highlighting the benefits of this testing kit, Prof. Shiv Govind Singh said, "We have already filed a patent for the device and now looking for industry partners for ToT of technology for mass production".**

**You can access electronic press release at IIT Hyderabad's Youtube: <https://tinyurl.com/hcyjw7ax>.**

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Indian Institute of Technology Hyderabad (IITH) is one of the six new IITs established by the Government of India in 2008. In a short span of **12** years, the institute has become a top ranker and currently has **241** full-time faculty, **3,397** students (**20%** women), and nearly **200** state-of-the-art laboratories and five research and entrepreneurship centers. The institute has a strong research focus with more than Rs **435** crore of sanctioned research funding with PhD scholars accounting for about **30%** of total student strength. IITH has to its credit more than **5500** research publications, **166** patent disclosures, **1440** sponsored/consultancy projects, and **50** industry and academic collaborations.

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