

AI and IoT based Diagnostic Device for Chronic Obstructive Pulmonary Diseases developed by IIT Kharagpur

RESEARCHERS at IIT Kharagpur have developed an affordable diagnostic intervention for Chronic Obstructive Pulmonary Disease based on the internet-of-things medical devices (IoT-MD) integrated with AI.

At the Organic Electronics Laboratory (ORELA), Department of Physics, IIT Kharagpur, Prof. Dipak Kumar Goswami and his research team have developed SenFlex.T, a smart mask synced with an android monitoring app through Bluetooth that can continuously monitor breathing patterns, rate, heart rate, oxygen saturation level in blood. The app is connected to a cloud computing server, where artificial intelligence (AI) has been implemented to predict the severity of COPD through Machine Learning (ML).

<https://doi.org/10.1021/acsami.8b19051>



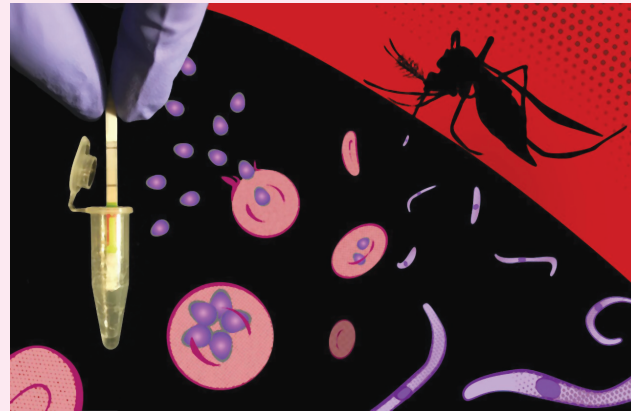
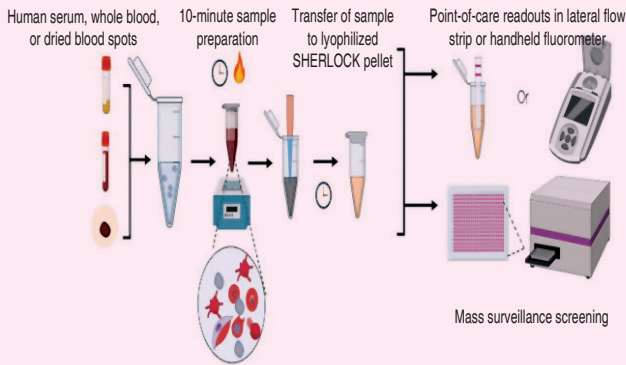
Indigenous Device can help Prevent Blood Clot in Deep Vein

THE formation of a blood clot in a deep vein, usually in the legs or Deep Vein Thrombosis (DVT), can lead to life threatening complications. Scientists have come up with a device that can facilitate flow of blood from the veins in the legs thus preventing DVT.

The device developed by the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum (SCTIMST), can bring relief to patients affected by prolonged immobility, bedridden state, post-operative immobilization, paralysis of legs, a large number of whom are affected by DVT causing pain, swelling, redness, warmth and engorged surface veins. The detachment of the clot and its transport to the arteries carrying impure blood to the lungs can cause 'pulmonary artery embolism', a potentially life-threatening complication.

PIB Press Release





CRISPR-based Malaria Testing on-the-fly

A multi-disciplinary research collaboration led by Wyss Core Faculty member James Collins at Harvard's Wyss Institute for Biologically Inspired Engineering and the Massachusetts Institute of Technology (MIT), and assembled by clinical fellow Rose Lee has created a field-applicable, ultrasensitive diagnostic assay that specifically detects DNA sequences from all Plasmodium species in symptomatic and asymptomatic malaria. The new malaria diagnostic method combines an optimized 10-minute rapid sample preparation protocol with the CRISPR-based SHERLOCK system to enable highly specific and sensitive Plasmodium detection in 60 minutes in simple reporter devices. It is published in *PNAS*.

<https://wyss.harvard.edu/news/crispr-based-malaria-testing-on-the-fly/>

IIT Kharagpur Rolls Out Telemedicine Technology For Home Care

RESEARCHERS at IIT Kharagpur's Department of Computer Science & Engineering have developed a telemedicine system, iMediX. The system integrates homecare with healthcare services from the hospital. The system facilitates critical health care support to patients at their doorsteps through remote consultation by a physician. The system is accessible by any standard internet browser and also from a mobile device. The patient can also download the prescription from her account.

<https://kgpchronicle.iitkgp.ac.in/iit-kgp-develops-telemedicine-for-home-care/>

Home-based Healthcare Telemedicine Technology developed by IIT Kharagpur to facilitate COVID social distancing of healthcare workers

IIT Delhi Startups Launch Antiviral Protection Kit

TWO IIT Delhi incubated startups, E-TEX and Clensta, have teamed up and launched a complete antiviral protection kit at an affordable price. The antiviral kit, unveiled by Prof V. Ramgopal Rao, Director, IIT Delhi, consists of a novel Clensta protection lotion and hand sanitiser; E-TEX Kawach Antiviral T-Shirt and Kawach Mask. The products are backed up by experts from the chemical and textile departments of IIT Delhi.

<https://home.iitd.ac.in/startup-etex.php>

