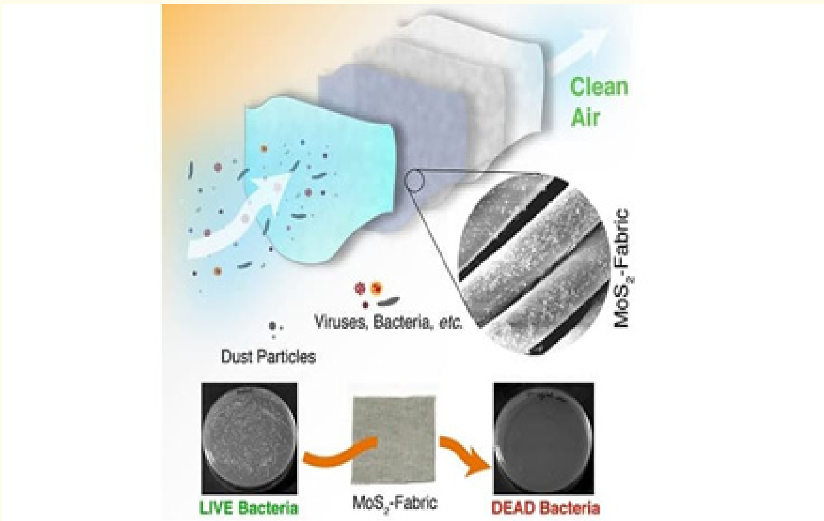
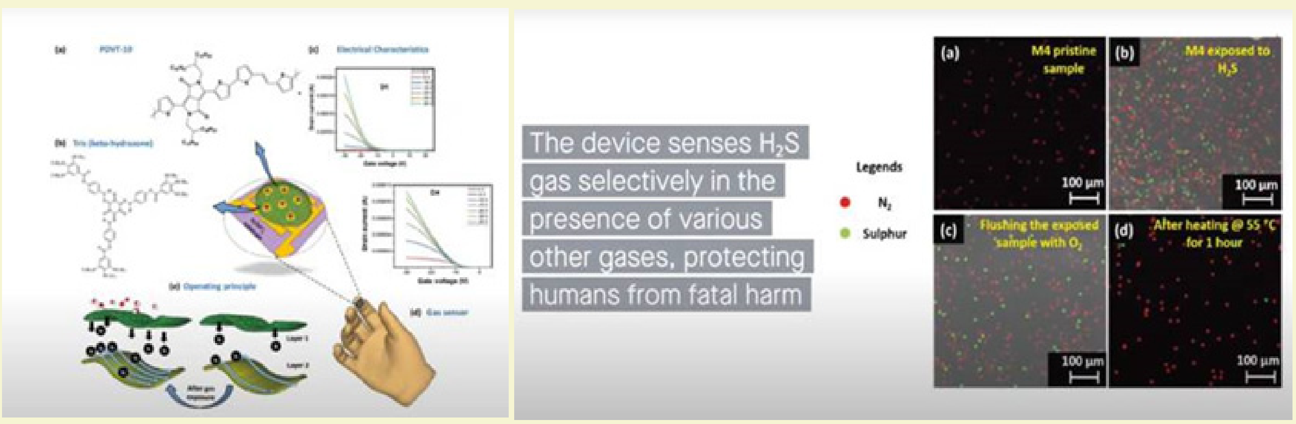
Antibacterial, Self-cleaning Material for Face Masks and PPE Equipment



Researchers at the Indian Institute of Technology, Mandi, have developed a virus-filtering, self-cleaning and antibacterial material that can be used to make face masks and other PPE equipment. The researchers have developed prototypes of a 4-layered face mask using the MoS_2 modified fabric. They report that these masks, in addition to killing microbes and being light-cleanable, can also filter >96% of particles that are in the size range of the COVID Virus (120 nm), without compromising on the breathability of the fabric, and could thus be a powerful tool to prevent the spread of coronavirus and other microbial infections. Results of this work were published in the *American Chemical Society – Applied Materials & Interfaces.*

Source: IIT Mandi, Press Release

Electronic Nose with Biodegradable Polymer & Monomer



Scientists from the Centre for Nano and Soft Matter Sciences (CeNS), Bangalore, in collaboration with their counterparts from Saudi Arabia, have developed an exceptionally sensitive and selective H_2S Gas sensor by impersonating the neuron responsible for the identification of airborne molecules or Olfactory Receptor Neuron (ORN). It also has high ambient stability of around 8 months without compromising sensing performance. The study was published in the journals *Materials Horizon* and *Advanced Electronic Materials*.

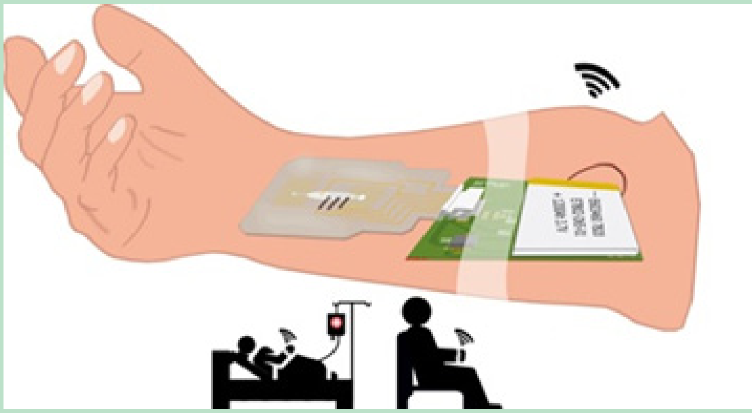
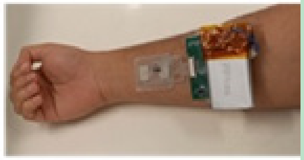
Source: PIB, Press release

NanoSniffer: A Microsensor based Explosive Trace Detector

NanoSniff Technologies, an IIT Bombay incubated startup developed NanoSniffer — Microsensor based Explosive Trace Detector (ETD). It provides trace detection of nano-gram quantity of explosives & delivers result in less than 10 seconds. It can accurately detect a wide range of military, commercial and homemade explosives threats. It also gives visible & audible alerts with sunlight-readable colour display. Further analysis of the algorithms also helps in the categorisation of explosives into the appropriate class. With local manufacturing, including its MEMS sensor, it will save a lot of import cost for the country.

Source: PIB, Press Release

Sweat based non-invasive Device

Technology that can generate sweat at resting and detect markers

A team of researchers led by an alumnus of the Indian Institute of Technology (IIT) Hyderabad, has carried out a study and developed a device that can generate sweat at resting and detect markers and transmit through a mobile phone. This sweat based non-invasive point of health diagnosis technology would be an alternative to blood-based invasive diagnosis. This study has been published in *Advanced Material Technologies Journals.*

Source: India Science Wire