

Smart 'Earring' to Monitor Temperature

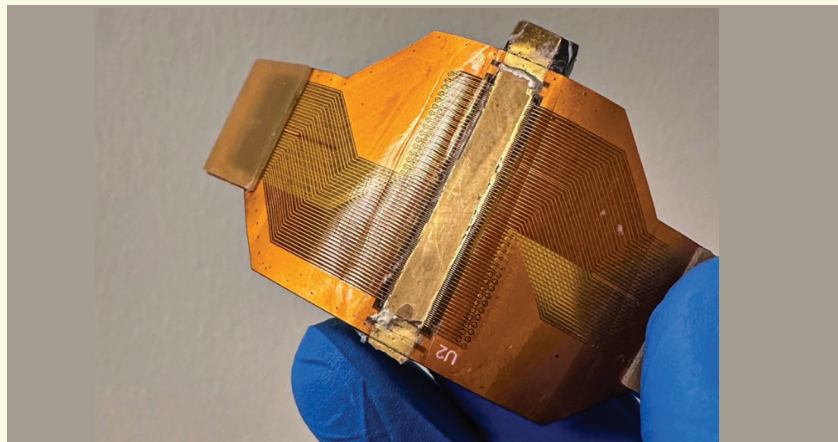


Image Credit: Raymond Smith/University of Washington

RESEARCHERS from the University of Washington have developed a wireless smart thermal Earring. The developed prototype is small to the size and weight of a paperclip, which is capable of monitoring the earlobe temperature continuously. The device possesses a battery life of 28 days. The earring has two sensors for measuring the temperature, one is attached to the wearer's ear with a magnetic clip, whereas another one hangs below the first one. The earrings have an efficient power consumption. It's interesting that researchers focused on the fashion trend as well because earrings can be made in personalised designs too. The work was published in *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*.

Source: University of Washington News Release

Ultrasound sticker



ENGINEERS at MIT have developed a postage stamp size sticky wearable ultrasound sticker which is capable of monitoring the stiffness of deep internal organs. The sticker is designed and equipped to identify the early signs of diseases such as liver and kidney failure and the progression of solid tumours. The sticker can be worn on the skin. The development appeared in *Science Advances*.

Source: MIT News

Sensor for Alcohol Detection through Breath Monitoring

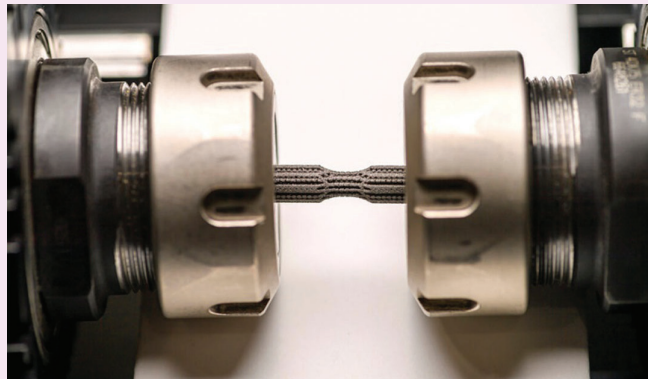


INDIAN Institute of Technology Jodhpur researchers have developed the first “Make in India” human breath sensor based on metal oxides and nano silicon operating at room temperature. The device’s primary function is to measure alcohol content in the breath in drunk and driving cases. Moreover, the developed sensor also does not require any extra batteries or preparation time.

However, with some changes in sensing layers and the use of an array of sensors (for Electronic Nose or Artificial Nose), and data analytics, it can also be very useful for characterisation of diseases, such as asthma, diabetic ketoacidosis, chronic obstructive pulmonary disease, sleep apnea, and cardiac arrest, where the person’s breath volatile organic compounds are monitored. The study was published in the journal *IEEE Sensors Letters*.

Source: IIT Jodhpur Press Release

Infection-resistant, 3D-printed metals for implants



WSU researchers tested the new 3D-printed material's resistance to fatigue
Photo by WSU Photo Services

RESEARCHERS from Washington State University developed a novel surgical implant, able to kill 87% of the bacteria that cause staph infections in laboratory tests while remaining strong and compatible with surrounding tissue like current implants. The work, reported in the *International Journal of Extreme Manufacturing*.

According to researchers, the development could someday lead to better infection control in many common surgeries, such as hip and knee replacements, that are performed daily around the world. Bacterial colonisation of the implants is one of the leading causes of their failure and bad outcomes after surgery. Additionally, the biggest advantage of this type of multifunctional device is that one can use it for infection control as well as for good bone tissue integration, according to researchers.

Source: Washington State University Press Release