

Singapore builds pressure sensing technology to transform healthcare and surgical robots

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An aero-elastic sensor that revolutionises the way pressure is detected

Researchers at the National University of Singapore (NUS) have developed a novel aero-elastic pressure sensor, called 'eAir'. This technology can be applied to minimally-invasive surgeries and implantable sensors by directly addressing the challenges associated with existing pressure sensors.

The eAir sensor promises increased precision and reliability across medical applications. It can potentially transform laparoscopic surgeries by enabling tactile feedback for surgeons, allowing more precise manipulation of patient tissues. In addition, the sensor can improve patient experiences by offering a less invasive means of monitoring intracranial pressure (ICP), a key health metric for individuals with neurological conditions.

Additionally, eAir presents an opportunity to improve the process of monitoring intracranial pressure — the pressure within the skull that can influence brain health. Similarly, by offering a minimally invasive solution, the technology could transform patient experiences in the management of brain-related conditions, ranging from severe headaches to potential brain damage.

The NUS team is laying the groundwork for collaborations with key players in the medical field. At the same time, they have filed a patent for the eAir sensor technology in Singapore, and aims to translate the technology for real-world applications.