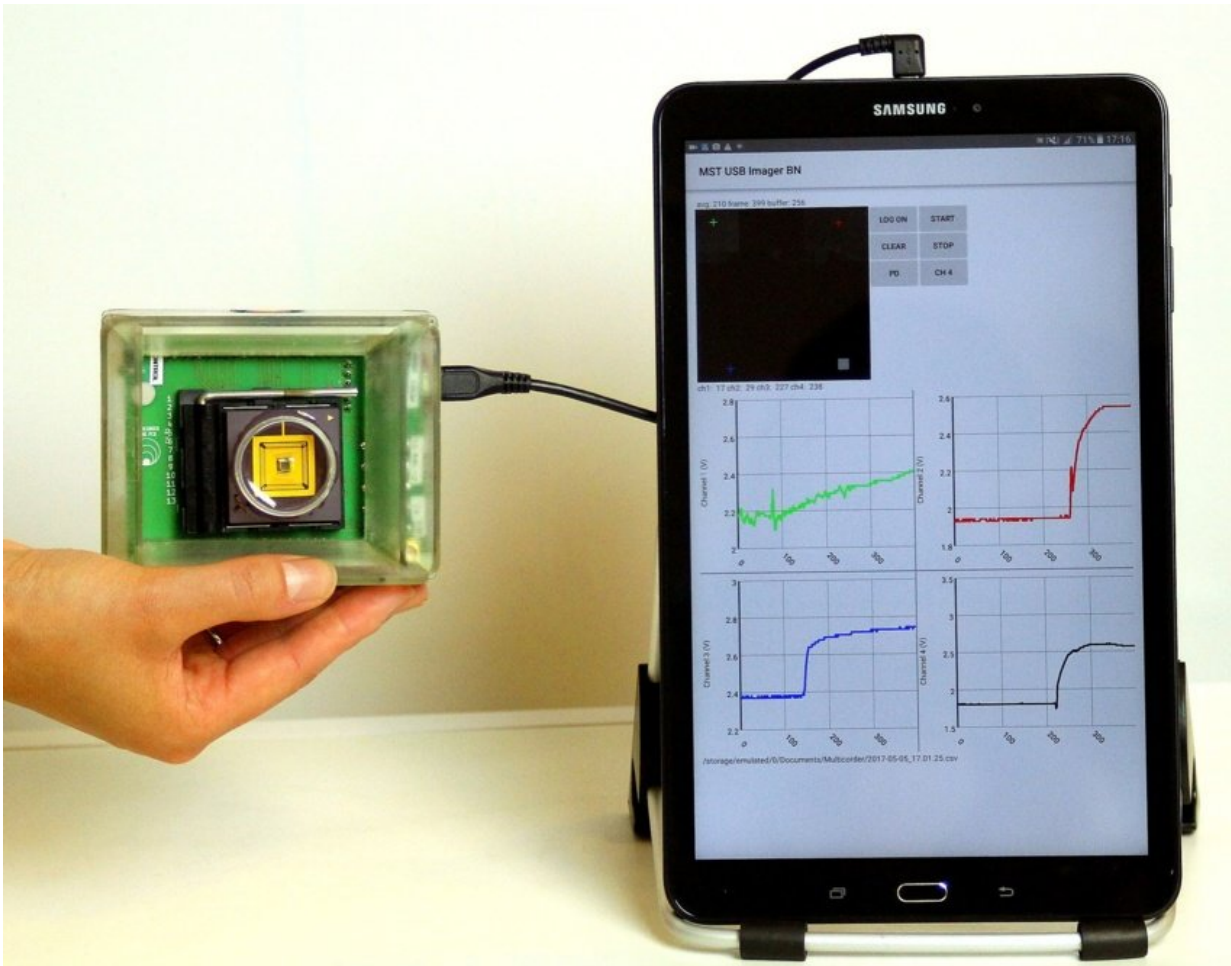


Portable "tricorder" scans life signs

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Credit: Engineering and Physical Sciences Research Council

Scientists from the School of Engineering at the University of Glasgow have developed a handheld device for taking medical readings from

patients, and transferring the data to a smartphone.

The device, which combines a handheld sensor and an app running on an Android smartphone or tablet, was partly inspired by the "tricorder" portable scanning/data-capture machine, used by crewmembers of starships in the fictional "Star Trek" universe.

The sensor works by using a [silicon chip](#) smaller than a fingertip, which is divided into four "zones" to count the number of four different types of metabolites ([small molecules](#) found in body fluids). It can detect multiple types of these materials simultaneously, speeding up the process of data-acquisition. The relative levels of these metabolites can provide an indication of the general health of the patient, as well as the progress of certain diseases.

The scanner transmits its findings to the Android device, which can provide rapid diagnosis in the case of medical conditions including prostate cancer and heart disease. The chip is made from a new form of [complementary metal oxide](#) semiconductor (CMOS) which is often found in imaging devices, is cheap to manufacture, and is more compact than its predecessors.

The development team believes this system offers a low-cost means of tracking disease in its early stages, and to provide rapid data results and diagnosis in locations where this may previously have been difficult or impossible to achieve.

Provided by Engineering and Physical Sciences Research Council

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