Engineers have big ideas for the latest in medical scanners

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Engineers at the University of Sheffield and STFC Rutherford-Appleton Laboratories have developed one of the World's largest imagers that could form the heart of future medical scanners. The new technology will allow doctors to produce more sensitive and faster images of the human body at a lower-cost to the healthcare profession.

The innovative technology, which has been developed as part of the £4.5m Basic Technology MI-3 Consortium, will help in providing instant analysis of medical screening tests and the early detection of cancer.

Easier to use and faster than the imagers used in current body scanners, and with very large active pixel sensors with an imaging area of approximately 6cm square, the technology has been specifically developed to meet demanding clinical applications such as x-ray imaging and mammography. This silicon imager is about 15 times larger in area than the latest Intel processors.

The next step of the project is to produce wafer-scale imagers which can produce images that approach the width of the human torso. This will eliminate the need for expensive and inefficient lenses and so enable lower-cost, more sensitive and faster medical imaging systems.

Professor Nigel Allinson, from the University´s Vision and Information Engineering Group in the Department of Electronic and Electrical Engineering and who led the project, said: "Very large active pixel sensors could soon be making a major impact on medical imaging by

further reducing the need for the old technology of film. The UK is a World-lead in such sensors for scientific and medical applications and this is a lead we intend to maintain."

Dr Renato Turchetta, leader of the design team, added: "Wafer-scale CMOS sensors are now a reality and the team is ready to take the digital revolution a step further in order to revolutionise scientific and medical imaging."

Source: University of Sheffield