

## Bio-sensing Technology Gives Patients the Power



Two new bio-sensing technologies were presented at Elsevier's 4th International Conference on Bio-Sensing Technology in Lisbon, Portugal. These include a wearable E-skin that measures heart rate and blood pressure, and paper diagnostic machines the size of a credit card that can give instant readings on blood and saliva samples.

Bio-sensing technology has the ability to detect and analyse data and provide patients information on their heart rate, blood pressure, blood sugar and hormone levels. It can also test whether the patient is infected with antibiotic-resistant bacteria. The technology is definitely a step forward in the field of personal medicine as it provides patients with real-time information about their health.

The paper diagnostic machine has been developed by Professor Anthony Turner, Head of the Biosensors & Bioelectronics Centre at Linköping University, Sweden. It is the result of collaboration between Linköping University and Swedish ICT non-profit Acreo. The device is inexpensive (at just €5 each and expected to fall to €0.50) and easy to use. The patient can simply switch it on, apply a sample and wait for a digital reading. The entire instrument is printed on a card that uses a screen-printing technique. It can be used to monitor diabetes, kidney disease and heart disease, or to detect cancer.

"We're on the cusp of an entirely new era – not just for bio-sensing, but for measurements in healthcare and diagnostics generally," said Professor Turner. "Until now, we have been used to going to a doctor, who endows us with some wisdom and retains information about us, and then waiting to see if we get better. Modern sensors and telecommunications are rebalancing this power; in the future, patients could have the information, while physicians provide a service."

The e-skin devices are designed to be both wearable and portable and can transmit data about how a patient's body is functioning. The device was presented by Professor Ting Zhang, from Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, China. It has been developed on flexible electronic technology and nanotechnology and has the unique ability to detect tiny changes in pressure. It can thus be used to monitor blood pressure, heart rate and wrist pulse.

The two devices have the potential to provide both patients and doctors with accessible and affordable medical tests. The devices can be worn like plasters or contact lenses and can transmit information to mobile phones.

"We're very excited to present our new technology," said Professor Zhang. "We've shown that the e-skin can be used to monitor many different human physiological signals. We believe our new material can give real-time diagnosis of diseases and provide an instant health assessment while a patient is wearing it."

Source: Elsevier

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