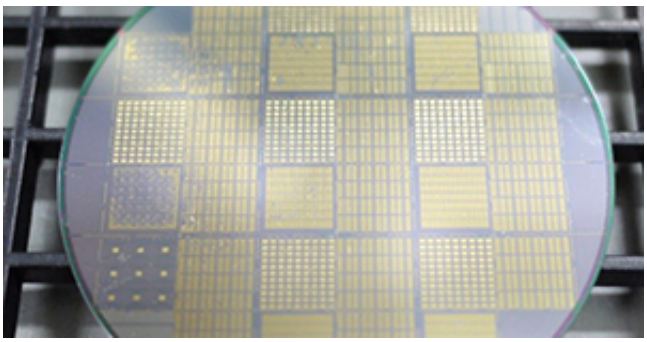
High-sensitivity, high resolution magnetocardiography for use at room temperature

August 20 2015



Credit: Tohoku University

Researchers at Tohoku University have succeeded in developing a sensor for the living body that can detect the bio-magnetic field with high sensitivity and high resolution. This was achieved by using a tunnel magnetoresistance (TMR) device to work at room temperature.

In a world first, the group led by Professor Yasuo Ando of the Graduate School of Engineering - in collaboration with Konica Minolta, Inc. - succeeded in detecting the heart's magnetic field by using the TMR device.

This device enables cardiac electric activity to be measured in a non-aggressive way, so that the diagnosis of heart conditions such as coronary

heart disease or arrhythmia can be greatly improved.

In the future, a special shield room for detecting the bio-magnetic field would be unnecessary because this device has a large field range. This would mean that heart conditions can be measured and treated in a more relaxed environment.

The device is expected to make a difference in medical treatments, preventive health care and sports.

Provided by Tohoku University