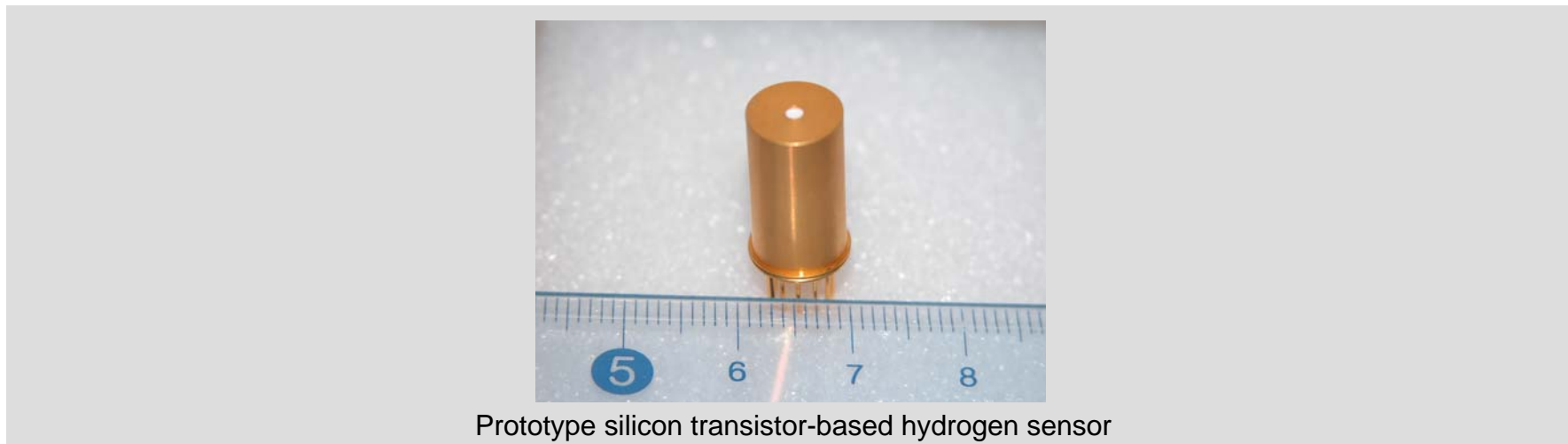


2008/06/19 Release

Technology to increase the sensitivity & product life of silicon transistor-based hydrogen sensors

Achieving longer product life using thin layered platinum and titanium structure in the sensor head



Prototype silicon transistor-based hydrogen sensor

Hitachi, Ltd. has developed a new compact hydrogen sensor using a thin layered structure of platinum and titanium in the sensor head (gate) which takes advantage of Si-MOSFET (metal-oxide-semiconductor field-effect transistor on a silicon substrate) characteristics. The hydrogen sensor developed is not only capable of detecting hydrogen concentrations above 1000 ppm in approximately one second but also has a high tolerance to heat and humidity. Further, acceleration tests with the prototype sensor have indicated a product life of more than 3 years. As this sensor is based on a semiconductor technology, it can be fabricated with currently widely available semiconductor manufacturing equipment and thus is suited for mass production. This technology is expected to become a key device for the safe use of hydrogen as an environment-friendly energy source which does not emit carbon dioxide.

This result will be presented on 23rd June 2008 in Chiyoda-ku, Tokyo, at NEDO Symposium 2008 on Fuel Cell & Hydrogen Technology.

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This result is technology from R&D supported by the New Energy Development Organization (NEDO), Japan.