gustav / May 22, 2010 02:56PM

[Creativity] The Research Team of NCKU-Department of Electrical Engineering Won the Gold Medal in the International Exhibition of Invention at Geneva

[Creativity] The Research Team of NCKU-Department of Electrical Engineering Won the Gold Medal in the International Exhibition of Invention at Geneva (Chinese Version)

NCKU Realtime News (2010/05/21) The inter-disciplinary team led by Professor Wen-Chau LIU at the Department of Electrical Engineering, NCKU, and Professor Huey-Ing CHEN at the Department of Chemical Engineering, NCKU, has won the gold medal at the International Exhibition of Invention, Geneva, with their semiconducting transistor hydrogen sensor. The semiconducting transistor hydrogen sensor is small-sized, light, and with low power consumption. Besides, it can detect the leaking in ten seconds and its performance is stable. This invention is regarded as a great benefit to engineering safety and environmental protection.

Professor Wen-Chau LIU points out, the invention of the semiconducting transistor hydrogen sensor is a result of cross-field cooperation among fields of electronics, electrical engineering, semiconducting and chemical engineering. Traditionally, silicon is used for transistor, but this material cannot resist high temperature, high radiation and extreme acid/alkali environment. The semiconducting transistor hydrogen sensor uses III to V semiconductor as the basic material with introducing sensing gate made of hydrogen catalytic active metals such as platinum or palladium. The element of the sensor thus has large bandgap, high thermal stability, radiation resistance and chemical durability.

Professor LIU also points out, the sensor is small-sized and light (the whole pack is only 0.6 g). It takes only 50mW to operate. It is thus easy to carry and quite energy-saving. Besides, the sensor can detect the leaking in ten seconds while it can sense the leaking as thin as less than 5 ppm. It can operate from the regular room temperature to 300°C. Because the sensor itself is a transistor, it is easy to be applied to IC or communication products.

Further Information:
NCKU Realtime News 2010/05/21 (Chinese)

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