

Development of a Low-Cost, Wide-Range Hydrogen Gas Sensor

The Environmental Sensors Team of the Synergy Materials Research Center, AIST, has developed a low cost, wide range hydrogen sensor. The sensor is based on the novel gas sensor device combining a thermoelectric conversion material with a platinum catalyst which was presented last year by the same team. At operating temperature of 60 to 100 °C, the platinum catalyst selectively reacts with hydrogen gas, so the sensor has high selectivity to hydrogen gas. This new sensor is uniquely able to sense hydrogen concentrations from 250 ppm to 10 % in air, and is suitable for integration into silicon substrates.

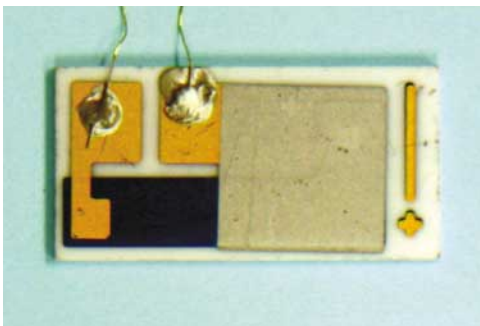


Photo of thermoelectric hydrogen sensor.

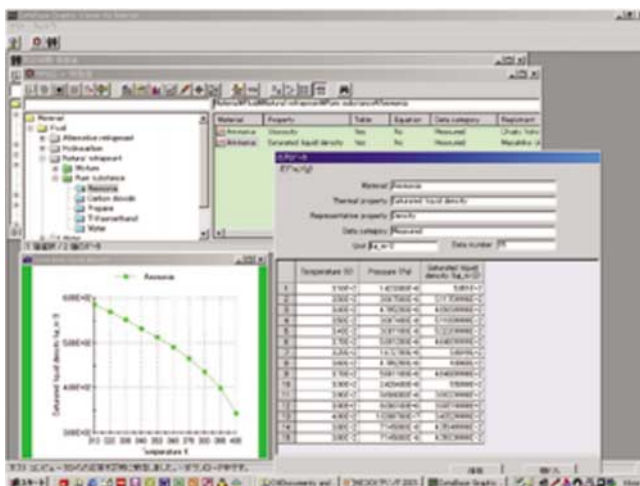
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A Network Database System for Thermophysical Property Data

We are developing a thermophysical property database by collaboration of scientists, researchers, and engineers who produce data by measurement and/or evaluation [1]. The independent databases in personal computers of collaborators are merged to a master database file stored in the database server operated at the key station and opened to worldwide access via the Internet.

This system will encourage data registrants to construct their own databases and accumulate thermophysical property data for huge variety of materials. A user friendly graphical user interface has been developed to register and access thermophysical property data the internet efficiently as shown in Fig. 1.

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For thermophysical property data