Cross sensitivity and stability of FET - Based hydrogen sensors

Publons ID	19503926
Wos ID	WOS:000254563600264
Doi	
Title	Cross sensitivity and stability of FET - Based hydrogen sensors
First Author	
Last Author	
Authors	Galonska, T; Senft, C; Widanarto, W; Senftleben, O; Eisele, I; Frerichs, HP; Wilbertz, C;
Publish Date	2007
Journal Name	2007 IEEE SENSORS, VOLS 1-3
Citation	2
Abstract	For safety reasons, while handling fuel cells, hydrogen concentrations of 0.1 - 3% and above need to be detected. Low power hydrogen sensors, based on a Field Effect Transistor (FET), have been in use for about 25 years. In the past platinum and palladium were often used as gas sensitive layers. Unfortunately in the required concentration range, the Pt based sensors have a poor selectivity at room temperature and were not stable at operating temperatures above 60 degrees C. To solve this problem Pt with a porous tin oxide (SnO2) top layer is used as a chemically sensitive electrode in a Floating Gate Field Effect Transistor (FG - FET). The results show that the SnO2 film on Pt stabilizes the sensor signal response between room temperature and 135 degrees C. Also the sensor response time with t(50) < 10s is quite fast and the cross sensitivity to other gases compared to pure Pt is reduced.
Publish Type	Book in series
Publish Year	2007
Page Begin	1036
Page End	1039
Issn	1930-0395
Eissn	
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000254563600264
Author	Dr R WAHYU WIDANARTO, S.Si, M.Si