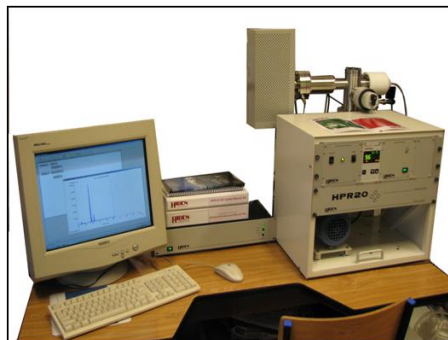


A gas micropreconcentrator for low level acetone measurements

The goal of the project is to carry out fundamental research focused on the development semiconductor, resistive gas sensors based on metal oxides with dopants for selective trace detection of the diabetes biomarkers present in the human breath. The exhaled breath is a composition of gases: humidity, carbon dioxide, oxide, nitrogen and volatile organic compounds (VOCs). The majority breath samples from adults contain around 200 VOCs, some of them are called "biomarkers", because its appearance in breath can provide an indication to physiological malfunction and can support the diagnosis of certain illnesses. However, the main limitation of using breath analysis as a supplementary tool in fast health diagnosis is VOCs concentration in breath. Usually, it is from a few part per billion (ppb) to a few part per million (ppm). A commercially available gas sensors are developed for measuring samples at several tens ppm. For trace analysis of exhaled VOCs the conventional analytical methods like GC/MS, MS-TOF or PTR-MS are used. In this case the Hidden Analytical HPR-20 Mass Spectrometer system is used. One of the very effective alternative for such solutions are microsystems based on micropreconcentrators and gas detection units. Usually it is fabricated as a sensors array. Since last three years, the Authors has been constantly carrying out research aiming at using micropreconcentrator to trace analysis of diabetes biomarkers in the human breath. The obtained results confirmed that it is possible to create the microsystem to analyze diabetes biomarkers in exhaled breath.



HPR-20 QIC in the lab

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Reference:

A.Rydosz et al.(2012) "A gas micropreconcentrator for low level acetone measurements"
Microelectronics Reliability **52** (11), 2640-2646

Hidden Product:

HPR-20 QIC R&D

Follow the link to the product catalogue on our website for further information

<http://www.hiddenanalytical.com/en/products/for-gas-analysis/hpr-20-qic-r-d>