

IEEE KITCHENER-WATERLOO

SECTION PRESENTATION

Professor Henry Baltes
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"Micro and Nano Sensors Snoop Around"

Abstract:

Vision and hearing, smell and taste, and the tactile senses are bridges between the external world and our brain. Micro and nano sensors are miniaturized electronic devices, which pick up physical, chemical, or biomedical signals and enter them into the computer. The miniaturization of most kinds of sensors has been achieved, but the "electronic nose" able to detect a broad range of "smells" caused by complex mixtures of airborne chemical compounds is still a dream. But application specific gas sensors or "narrow band noses" are being developed, which can detect and identify gas mixtures in given application areas. Integrated gas sensors based on CMOS IC technology with on-chip microstructures (CMOS MEMS) coated with gas absorbing polymers or metaloxides are presented. The quest of sensor selectivity is tackled by combining different transducer principles (mass sensitive, capacitive, calorimetric) with different polymers or by varying the operating temperature of micro hotplates coated with metal oxides doped with different catalysts. Moving beyond chemo to biosensors, combinations of CMOS MEMS with bio-affinity molecules or immobilized living neural cells are discussed.

DATE: Friday October 17, 2003

TIME: 3:30-5:00pm

LOCATION: DC 1304
University of Waterloo
Davis Centre

ALL ARE WELCOME !!!

Refreshments will be served

Invited by Prof. Arokia Nathan