

IEEE KITCHENER-WATERLOO

IEEE MTT-Chapter Presentation

Henry Baltes

Physical Electronics Laboratory (PEL)
ETH Zurich, Switzerland

“From Microsystems to Biosystems”

Abstract:

Highlights from chemical and biomedical microsensor research at the PEL based on CMOS IC technology are presented: chirality microsensors (distinguishing between a molecule and its mirror image), an integrated beam resonator with minimal power consumption, a micro hotplate gas sensor operating at 500 deg C on a CMOS IC chip, a blood pressure sensor chip, and on-chip extraction of electrical signals from living cells. This is followed by an introduction to the emerging field of systems biology.

BIOGRAPHICAL NOTE:

Henry Baltes is Professor of Physical Electronics at ETH Zurich and the Director of the Physical Electronics Laboratory (PEL) since 1988. As of June 1, 2004 he is on leave in order to act as Chairman of the ETH Zurich Center of Biosystems Science and Engineering to be located at Basel.

He is a Fellow of the IEEE and a Member of the Swiss Academy of Technical Sciences. He received the European Science Award of the Koerber Foundation in 1998, the Wilhelm Exner Medal of the Austrian Trade Association in 1999, the degree of Doctor of Engineering (honoris causa) of the University of Waterloo in 2000, and Doctor of Electronic Engineering (ad honorem) of the Alma Mater Studiorum University of Bologna in 2003. He joined the editorial board of the Proceedings of the IEEE in 2004. He is a co-founder of the spin-off company SENSIRION (35 collaborators).

In 1996 he was Visiting Professor at Stanford University and the University of Waterloo. In 2002/03 he was Visiting Scientist at the Ritsumeikan University, the University of Bologna, and the University of Freiburg, Germany. He is a member of the International Scientific Committee of the Advanced Research Center on Electronic Systems (ARCES) of the University of Bologna. He is co-editor of the Wiley-VCH book series SENSORS UPDATE and ADVANCED MICRO AND NANOSYSTEMS as well as the Springer book series MICROTECHNOLOGY AND MEMS.

From 1991 to 1995 he was the program director of the Swiss National Priority Program LESIT. Prior to 1988, he held the Henry Marshall Tory Chair at the University of Alberta, where he was Acting President of the Alberta Microelectronics Centre and a co-founder and Director of LSI Logic Corporation of Canada. From 1974 to 1982 he worked for Landis & Gyr Zug (now Siemens) Switzerland, where he directed the solid-state device laboratory. He received the D. Sc. degree from ETH Zurich in 1971.

DATE: Friday July 30, 2004

TIME: 3:00 pm

LOCATION: DC 1304, University of Waterloo

**All are Welcome
Refreshments will be served**

Invited by Prof. A. Nathan
Electrical & Computer Engineering
IEEE Presentation