SESSION I – TAPA I / II
Plenary Session I

Tuesday, June 17, 8:20 a.m.
Chairpersons: C. Dennison, Ovonyx, Inc.
M. Niwa, Matsushita Electric Ind. Co. Ltd.

8:20 a.m. **Welcome and Opening Remarks**
J. Woo, University of California, Los Angeles
T. Mogami, Selete

1.1 – 8:35 a.m.
Has the Sun Finally Risen on Photovoltaics?
Mark Pinto, Applied Materials

The idea of solar generated electricity dates to discovery of the photovoltaic (PV) effect in 1839 through to the first silicon solar cell in 1954. But even with concerns about oil and the environment, PV currently generates less than 0.1% of the world's electricity. We present here the case that PV is on the verge of becoming a major source of electrical power through a principle similar to that which underlies VLSI – the reduction of unit cost through nanomanufacturing.

1.2 – 9:20 a.m.
Silicon Smart Microchips for Intelligent Sensing
Makoto Ishida, Toyohashi University of Technology

Silicon smart microchips with CMOS/MEMS technology are realized for Intelligent sensing. In our developed chips, tow new type sensor chips are presented here. One is Si microprobe electrode array for using in the recording of neurons in the tissue. The probe array can be fabricated on IC chip, using standard IC process followed by a selective Si probe growth. Another one is pH image sensors successfully fabricated by using the CCD/CMOS image sensor technique, and real time imaging of a chemical reaction and pH distribution imaging was demonstrated.