

The 10th Micromachine Summit

The 10th Micromachine Summit was held in Grenoble, France May 3-5. The Summit was co-sponsored by NEXUS, CEA Léti, MINATEC, and FEMTO-ST and was presided by Gaëtan Menozzi, the chairman of NEXUS.

This year, 108 people—the highest ever—participated from twenty-three countries and regions. A total of seven participants came from Japan, including four delegates and three observers. Of particular note was the participation of Israel, which is facing severe conditions in the international community, India, which is earning foreign capital in the software industry, and Poland and Romania who have become independent from the former Soviet Union and recently have begun participating in the EU. In addition, a professor from the University of Ho Chi Minh in Vietnam was present as an observer from France. Hence, research and development on micromachines and MEMS has now spread to these countries.

The objective of this Summit has been to provide an annual forum for the free exchange of ideas among people of high standing in the field regarding initiatives and the future outlook toward the policies, education, and industrialization of micromachines. The forum has become increasingly more highly regarded as the development of MEMS and MST advances toward industrialization. As an organizer of this international Micromachine Summit, Japan received high praise in Chairman Menozzi's opening speech.

The program for this year's Summit was configured of three sections, beginning with a reception on the first day to provide participants with a chance to meet one another, two days of conferences, and a technical tour on the final day providing a look at the achievements of development and companies involved in the field. In addition to the traditional country review, the two days of conferences on May 3 and 4 also included sessions on government policy, national programs, and infrastructures; education; industrial developments in micro- and nanotechnologies (MNT) and the future outlook of advanced research in MNT, and featured a total of fifty-six presentations.

This year's Summit revealed the following information.

(1) Most research projects are dependent on governmental

budgets in general, and the prefix "nano" is more frequently being used with "micro." The term MST (microsystems technology) that has conventionally been used in the EU in particular is now being replaced with MNT (micro-nanotechnology).

- (2) Although MEMS and MST products are now being developed, these developments are insufficient to generate a large market.
- (3) Foundries have rebounded since the burst of the communication bubble, and business conditions have improved.
- (4) Countries that were latecomers to the field have taken up research activities in such specialized fields as optics.
- (5) There has been many activities aimed at putting together international networks, such as NEXUS based in Europe or MANCIF based in America, with the networks competing to attract new members. Limitations in development and commercialization with the traditional individual organizations have apparently led to an increase in membership in these networks.
- (6) We are now seeing research conducted on sensors designed for social issues, such as the detection of SARS and soil contamination. Other participants introduced studies aimed at dream-like applications for the long term. Also, an EU project has initiated basic research involving infrastructure, including a study on precision combining the efforts of universities and research institutes in various countries.

The 11th Micromachine Summit will be held on May 2-4 in Dallas, Texas (America). Further, in a meeting of the Chief Delegates, it was determined that Beijing, China would host the 12th Summit in 2006.

The technical tour on May 5 included a visit to the wafer manufacturer SOITEC. SOITEC imports its silicon from Japan's Shin-Etsu Chemical Co., Ltd., fabricates silicon wafers, further modifies these wafers into SOI wafers according to its own patented "Smart Cut" process, and exports 80% of these wafers to America as IC materials. SOI wafers are employed by IBM for their high performance and low power consumption, and are also being marketed in Japan.

