

Report on the 11th Micromachine Summit

The 11th Micromachine Summit was held in Dallas, Texas, May 1-4, 2005. The Micromachine Center held the first Micromachine Summit in Kyoto, Japan in March 1995, inviting representatives from nine other countries active in the field of micromachines, including the United States, Australia, Canada, France, Germany, Italy, the Netherlands, Switzerland, and the United Kingdom. Now, ten years later, sixty-three representatives and thirty-three observers-for a total of ninety-six participants-attended the 11th Micromachine Summit in 2005. Including the countries mentioned above, the participants came from a total of twenty-four countries including Mexico, Argentina, China, South Korea, Taiwan, Singapore, India, Israel, Belgium, Greece, Denmark, Norway, Sweden, and Finland. Representatives from universities and research institutes and organizations accounted for three-fourths of the participants, while the remainder was made up of business representatives. A total of nine people from Japan attended, including Chief Delegate Dr. Isao Shimoyama (professor, the University of Tokyo), Delegate Toshiro Shimoyama (chairman, the Micromachine Center and supreme advisor, Olympus Corporation), Delegate Hitoshi Ogata (director, the Micromachine Center and senior executive officer, Mitsubishi Electric Corporation), Delegate Keiichi Aoyagi (executive director, the Micromachine Center), Delegate Takayuki Hirano (executive advisor, the Micromachine Center), and four observers.

The conference proceeded in a roundtable format, with the delegates seated around the table and the observers encircling them. The first day of lectures consisted of country reviews, in which a representative from each participating country spoke about their country's micromachine- and nanotechnology-related endeavors. No other event provides the opportunity to hear about the micromachines activities of twenty-four countries under one roof. For Japan's review, Chief Delegate Shimoyama spoke on "MEMS Market Trends in Japan." In this report, he predicted rapid growth in Japan's MEMS market and stressed the importance of producing fine MEMS through the development of (1) MEMS+CMOS, (2) MEMS+MEMS, and (3) MEMS+Nanotech in order to attain and expand this rapid growth.

On the second day of the Summit, twenty-three lectures were given during four sessions entitled (1) Techno-Historical, (2) Institutes and Companies, (3) Strategy, and (4) Industry Groups. Of particular interest were the success stories related by the host country's Texas Instruments on Digital Mirror Devices and Analog Device Inc. on the development of accelerometers. Delegate Aoyagi of Japan reported on the Micromachine Center's endeavors to date and future developments in a lecture entitled "Toward Industrialization of MEMS/Micromachine Technologies." Delegate Shimoyama gave a visual presentation entitled "Technological Challenges toward Capsule Endoscopes," in which he introduced through video Olympus' activities in Capsule Endoscopes. This year, Delegate Shimoyama was recognized by the Secretariat for the enormous contribution he has given to the Summit over the years. Also, in his lecture entitled "Micro and Nano Technologies at Mitsubishi Electric Corporation," Delegate Ogata presented Mitsubishi Electric's work in nanotechnology centered on MEMS technology.

On the final day, participants were taken on a tour of Texas Instruments, Zyvex, and the University of Texas at Dallas, all located near the conference hall. Perhaps due to its location in this buoyant town of Texas, this year's Micromachine Summit had a light-hearted mood throughout. It was apparent during this Summit that the connection of micromachines and MEMS technology to nanotechnology is essential and that many countries are working to use this to create and develop new industries. The fruits of these activities are greatly anticipated. Finally, it was decided to append the subtitle "Micro/Nano Technology and Applications" to the original title "Micromachine Summit."

The 12th Micromachine Summit: Micro/Nano Technology and Applications has been scheduled to be held in Beijing, China for three days on April 27-29, 2006. Hence, as new industries for micromachines and MEMS emerge and the number of Asian participants in the Summit increases, the Micromachine Summit will be departing from its salon-type roundtable meeting of several tens of people and is about to be reborn as a new conference that maximizes features different from other typical academic meetings on technology. The Micromachine Center will continue to lend its support to the Micromachine Summit.

