

Overview of MMC's Activities in Fiscal 2002

I. Basic Objective of Activities

MMC's basic objectives in FY 2002 are to actively disseminate information on micromachines from Japan as in the previous fiscal year, to engage in technical issues regarding the fusion of micro- and nanotechnologies, and to promote the further industrialization of micromachines.

II. Description of Primary Activities

1. Investigations and Research on Micromachines

Planned activities include spurring on the rapid development of micromachine technology, gaining a clear understanding of the trends in technologies and industries, and conducting investigations and research on new technological issues regarding the fusion of micro- and nanotechnologies.

(1) Studies on the prospects for the future of micromachine technology

While we anticipate the industrialization of micromachine technologies that have been developed thus far, from a technological perspective we must also strive toward further miniaturization in this new technological system of micromachines. From an applications perspective, MMC is pursuing the fusion of micromachine technologies with technologies in other fields, such as medical care and biotechnology. Hence, studies on the prospects of micromachines are being implemented while conducting endeavors from various angles.

(2) Studies on the R & D trend of micromachine technology in Japan and abroad

Developing basic technological data to aid in developing micromachine technologies.

(3) Investigation and research on basic and sprout micromachine technologies

Studies in the current fiscal year will be a continuation of the previous year's studies in the fields of cell manipulation and nano-optics.

(4) Studies on the construction of a system for estimating the micromachine market

Studies in the current fiscal year entail determining methods for constructing a system and summarizing statistics.

(5) Investigation and research on scale interface (commissioned activities to help promote the machine industry)

From the perspective of scale interface, MMC will study the trends of optical devices in demand for next-generation optical communications and evaluate the sophisticated functionality possible by fusing micromachine and nanotechnologies.

2. Collection and Provision of Micromachine Information

(1) Maintaining and upgrading the MMC library (to promote the storage of information in a database)

(2) Publication of a micromachine periodical (issuing "Micromachine Index")

(3) Publication of a newsletter (including data on research and

administrative trends)

(4) Database construction and data management system operations

3. Exchange and Cooperation with Worldwide Organizations Involved with Micromachines (partially subsidized by the activities to help promote the machine industry)

(1) Participating in the 8th Micromachine Summit and holding overseas seminars

We will take part in the 8th Micromachine Summit to be held at Maastricht in the Netherlands and hold a joint seminar with local research institutes in Europe, with the cooperation of JETRO and others.

(2) Holding symposiums on micromachine technology (partially subsidized by the activities to help promote the machine industry)

This year we will hold the 8th International Micromachine and Nanotechnology Symposium (provisional name) with an added topic on the fusion of micromachine technology with nanotechnology.

(3) Dispatches Overseas and Exchange with Researchers

Promotion of exchange through the dispatch of research missions overseas and information exchanges with universities and research institutes involved in micromachines.

(4) Constructing a foundry network system (currently requested as part of commissioned activities to help promote the machine industry)

To structure enterprises providing a foundry service for engaging in the construction of a system aimed at improving service provision through a network.

4. Standardization of Micromachines

(1) Creation of an international standard as a method for evaluating the properties and measuring methods of thin film materials.

(2) Investigation and research on micromachine standardization

This fiscal year MMC will hold an international forum/workshop in Tokyo in July.

5. Dissemination and Education about Micromachines

(1) The quarterly magazine "MICROMACHINE" will be published periodically and distributed to those involved in the field, and will also be provided on the Internet website.

(2) Conduct activities for disseminating information and educating the public about micromachines, including a drawing contest in which elementary and junior high school students draw pictures of micromachines.

(3) Hold the 13th Micromachine Exhibition.

(4) Serve as secretariat for the Federation of Micromachine Technology to link and strengthen micromachine-related organizations.

TOPICS

MEMS 2002 Report

The IEEE International Conference on Micro Electro Mechanical Systems (MEMS) is an annual event, held by turns in Japan, the United States, and Europe. MEMS 2002 (The Fifteenth IEEE International Conference on Micro Electro Mechanical Systems) was held at the MGM Grand Hotel (Las Vegas, USA) between January 20 and 24, 2002. For the first time, conference attendance exceeded 700, and the number of applications also increased from last year, from 395 to 454, to a record high. Although the number of oral presentations was 41, the same as in previous years, the increase in applications resulted in a 30% increase in the number of poster presentations, to 134. However, this year's conference continued the organizational practice of single-presentation sessions, discussions took place in a single conference hall packed with more than 700 people. Because of this, although I found the presentations themselves to be significant from the perspective of sharing technical information, constant murmuring throughout the conference hall created an atmosphere at odds with intense research debate.

There was an increased number of presentations related to

the fields of Optical MEMS/Devices, Bio-MEMS, and Micro fluidics, showing that research and development in IT- and Bio-related fields is continuing to expand. In particular, there was a notable increase in the number of presentations by speakers from



Korea, Taiwan, and China that dealt with IT-related topics, including RF/Wireless.

The city of Las Vegas (where the conference was held) was dotted with Disneyland-like attractions - there was even an "Eiffel Tower" at the Paris Las Vegas hotel (pictured). My impression was of a city where, with the time and the money, you could enjoy yourself to the full.