

MEMS Foundry Service Industry Committee

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1. Overview

Highly anticipated as the next cornerstone of industry, Micro-Electro-Mechanical Systems (MEMS) is the integration of mechanical, optical, and fluid elements with electronic circuits through microfabrication. Initially, MEMS products were developed by a handful of companies who possessed the necessary infrastructure. However, commercial MEMS foundry services began to appear gradually in Japan around the end of the 90s. Based on a survey of foundry networks developed in the West, the MEMS Foundry Service Industry Committee (FSIC) was established in June of 2002 to construct such a network in Japan.

The Committee, whose membership has increased to eleven organizations at present, conducts seminars and other activities. Below I will outline the activities of the FSIC.

2. Activities of the MEMS FSIC

Companies now offering MEMS foundry services have expanded their business to provide such services to external customers, using facilities that were employed for many years to produce in-house products. However, in the interest of expanding the prototyping and mass-production services available to users, it will be necessary to link company resources organically over a network in order to utilize resources more effectively and to resolve common issues facing foundries.

It is for this purpose that the MEMS foundry companies shown in **Fig. 1** have formed this committee around the Micromachine Center and have initiated activities to construct such a network. The committee activities involve the following issues.

- 1) Promotional activities for expanding MEMS users (workshops, activities for introducing the foundries, etc.)
- 2) Identifying problems in network management
- 3) Identifying common problems facing MEMS foundries and determining demand for design and analytical tools
- 4) Approaches for facilitating MEMS usage for customers, process standardization, consulting, etc.
- 5) Discussing common problems for users and examining business guidelines



Fig. 1 Members of the MEMS FSIC

In view of these issues, the FSIC has performed the following activities to date.

- (1) In order to promote the network and expand its user base, we have launched a Web site (<http://fsic.mmc.or.jp>) detailing services offered by the various companies and event information. We have also given presentations and joint seminars at the Micromachine Exhibition.
- (2) Through joint discussions with industry, government, and academia on promoting the MEMS industry, we have clarified the importance of inexpensive and user-friendly design tools and the need for a reliable material database in order to help users initiate new projects.
- (3) We have provided a help desk on the FSIC Web site entitled MEMStation. Beginning services on July 1, 2005, MEMStation provides a relatively easy approach to choosing a suitable foundry business.

3. Conclusion

MEMS enables the microfabrication of devices and modules merging precision mechanical, optical, and fluid parts with electronic circuits, and we are confident that MEMS will raise Japan's level of competitiveness in the mechatronics industry. We believe that by constructing a network of MEMS companies, each with their own field of expertise, the FSIC can provide optimal solutions to users wishing to develop and mass-produce MEMS devices.