

Overview of FY 2008 Project Planning

I. Basic policy for project planning

FY 2008 is the final year of the Highly Integrated / Complex MEMS (Fine MEMS) Manufacturing Technology Development Project, a three-year project that began in FY 2006. The goal for this year will be to complete the project and ensure that its goals have been achieved. As last year, efforts with regard to the MEMS Open Network Engineering System Design Tools Project (nicknamed the MemsONE Project), for which development was concluded in March 2007, will focus on the creation of a support organization and dissemination of the project's achievements. Furthermore, a concentrated research and development approach is > planned for the Bio-electro mechanical Autonomous Nano Systems (BEANS) > development project, and a proposal has been submitted in the open > competition for this project. With regard to activities to improve the environment for industrialization, the focus will be on policy proposal activities for the MEMS Industry Forum and industry interchange and stimulation projects. Moreover, as last year, an active effort will be made to promote research projects, standardization promotion projects, dissemination and publicity projects and so on.

II. Major projects

1. National / NEDO projects

In order to establish a technical infrastructure for micromachines and MEMS, the Micromachine Center is actively working to promote research and development projects sponsored by the national government and the New Energy and Industrial Technology Development Organization (NEDO), harnessing the combined capabilities of industry, academia and government. In FY 2008, the Center will promote the following projects.

(1) Highly Integrated / Complex MEMS (Fine MEMS) Manufacturing Technology Development Project (NEDO project)

The project was initiated in FY 2006 as a national government / NEDO project. In this, the final year of the project, the Center will continue working on and will strive to complete a database of highly integrated / complex MEMS knowledge that collects, organizes and compiles knowledge information relating to the three development categories of the project: (1) complex technologies to implement MEMS / nanofunctions (2) integrated construction with semiconductor chips (3) methods to connect MEMS components in a highly integrated manner.

(2) Promotion and dissemination of MemsONE

In FY 2008, the Micromachine Center will operate the MemsONE Support Center established in cooperation with software vendors based on the dissemination infrastructure created during the previous fiscal year. The Center will also promote MemsONE dissemination activities. Specifically, the academic version of MemsONE will be distributed to universities and research institutions, and energetic efforts will be made to promote dissemination through user groups, seminars for showing examples of use, training sessions and other user support activities and promotional activities.

(3) Proposal for "Bio & Electro-mechanical Autonomous Nano Systems (BEANS) Manufacturing Technology Development Project" (METI Project)

A proposal will be submitted in the open competition for the research and development project entitled "Bio & Electro-mechanical Autonomous Nano Systems (BEANS) Manufacturing Technology Development Project" to be initiated in FY 2008 by the Ministry of Economy, Trade and Industry. If the proposal is accepted, the project will be implemented using a concentrated research and development approach.

2. MEMS Industry Forum Projects (policy proposal, industry interchange and stimulation projects)

The MEMS Industry Forum was established as a special project committee whose goal is to support the further development of MEMS industries and contribute to the international competitiveness of Japanese industry. Its membership is made up primarily of companies in MEMS-related industries. The Forum maintains ties with affiliated academies, regional centers and overseas institutions, and it promotes the following activities:

- (1) Policy proposal activities
- (2) Industry-academia liaison activities
- (3) Establishment of infrastructure for MEMS development
- (4) Interchange activities for businesses in MEMS and other industries

Participation in the 14th World Micromachine Summit (to be held April 30 - May 3 in Taejeon, Korea), 14th International Micromachine / Nanotech Symposium (to be held July 29 at the Tokyo Bay Ariake Washington Hotel, exhibition at the Hannover Messe etc.

3. Research Projects

Research will be conducted for the micromachine and MEMS technologies that are rapidly becoming key technologies in manufacturing industries. Efforts will focus on accurately determining technical and manufacturing trends and exploring new technical issues in the domains in which these technologies are fused with nanotechnology.

(1) Research aimed at strengthening manufacturing centers for highly integrated MEMS

Even after the conclusion of the three-year Highly Integrated / Complex MEMS Manufacturing Technology Development Project that has been underway since 2006, research that is based on policy proposals for FY 2009 will be conducted so the achievements of the project can be quickly and accurately applied to the manufacturing industry in Japan.

- (2) Survey of technical trends both at home and abroad
- (3) Survey of industrial trends
- (4) Enhancement of micronano database

4. Activities to promote standardization

Standardization projects in micromachine and MEMS technology fields will be promoted concurrently with international initiatives.

- (1) Research and development in the area of standards certification for the purpose of proposing international standards
- (2) Follow-up regarding proposed standards for thin film material fatigue test methods
- (3) Study of overseas standards
- (4) Adoption of thin film material tensile test method standard as a JIS standard

5. Dissemination and publicity projects

Efforts will be made to promote wide-ranging dissemination and educate the general public regarding micromachines and MEMS by publishing and distributing a journal, holding exhibitions and so on.

- (1) Use of website to disseminate information and strengthen ties
- (2) Publication of MicroNano Journal
- (3) Publication of monthly news bulletins
- (4) Provision of information, etc. through the "MicroNano Express" newsletter
- (5) Upgrading of reference room including database of reference abstracts
- (6) Holding of Exhibition Micromachine/MEMS & Nanotechnologies

The 19th Exhibition Micromachine/MEMS & Nanotechnologies will be held at Tokyo Big Sight as part of MicroNano 2008. Plans called for the trade show to be held July 30 - August 1.