

# BEANS Project Booth

This year will be the second that the BEANS Project participates in the Exhibition Micromachine/MEMS, the first being in July of last year. The BEANS Project booth will be expanded from last year's five exhibit spaces (one space is 3x3 meters) to twelve exhibit spaces. The booth is being sponsored jointly by the New Energy and Industrial Technology Development Organization (NEDO) and the BEANS Laboratory. The BEANS Project booth is located in a corner of the exhibition hall far from the entrance, but is adjacent to both the Micromachine Center booth and Conference Areas A and B at which various seminars will be held during the exhibition.

Since the level of recognition for the BEANS Project itself was low last year, our exhibits were focused on raising awareness of the BEANS Project. It will be important this year as well to increase awareness of BEANS among industry insiders, but the primary objective will be to publicize achievements of the project, as this is the interim evaluation period. Thus, in coordination with a report of achievements given at the BEANS Project Seminar, which is to be held on the afternoon of July 29 during the exhibition, we hope to take this opportunity to illustrate what important achievements the BEANS Project has produced over a mere two years since its inception and how the level of achievement has exceeded expectations.

The booth itself is an "island" surrounded on all four sides by passageways. An emblem of the bright green sprouting bean plant that has been the symbol of BEANS will adorn the entrance to this island, and the interior of the booth will be furnished with carpeting and other elements in a matching green. We have no intention of putting up walls or other barriers between the booth and the passageways, so as to give the booth a fairly open feel, but we are considering how to control traffic flow within the booth in order that visitors will see everything on display. The entrance to the booth is the main exhibit zone, which connects to various inner zones devoted to 1) Macro BEANS, 2) 3D BEANS Tokyo, 3) Life BEANS Kyushu, and 4) Life BEANS Tokyo, for example.

The display items provided for each center are essentially posters, mock-ups or the actual articles, and display monitors showing animated or live-action video. Highlights planned for the exhibition are (1) new lifestyles created by BEANS (in the main zone); (2) photographs depicting low-damage, neutral beam etching, models for elucidating the mechanism of supercritical films, trench capacitors, patterning using peptides, and true 3D machining; (3) large panel displays and an exhibit of actual glowing microbeads related to a hybrid cell doll created from hydrogel beads and a glowing ear that reflects changes in blood sugar level; and (4) animation simulating weaving experiments and non-vacuum deposition for a study on fiber substrates with nanostructures and a meter-size fabric touch sensor.



In coordination with the booth exhibits, the 4<sup>th</sup> BEANS Project Seminar will be held in Conference Area B on the afternoon of July 29. Please don't miss the seminar, as all interim results of the BEANS Project will be presented.

## G-device Project Booth

The G-device Project was added to the NEDO-sponsored "Hetero-functional Integrated Device Technology Development Project (BEANS Project)" and launched in April this year. The challenges taken up in this project are to develop an advanced sensor network system and environmentally friendly processes.

In order to develop an advanced sensor network system, an experimental system will be installed in a clean room for fabricating large-diameter (8-inch) MEMS in order to monitor energy consumption, temperature, pressure, air volume, foreign particles, gas, and other factors in the clean room and to analyze their effects on energy savings and the reduction of carbon content. The G-device booth will provide demonstrations on controlling an air conditioning system and the like, while sensing temperature, humidity, and foreign particles at various points in order to illustrate the concept of the project. Another goal of the project is to verify the effects of a sensor network system installed in a plant factory for detecting temperature, light, humidity, and other conditions in the factory on energy savings and productivity in crop cultivation. A miniature plant factory will be exhibited at the booth to demonstrate this process.

In the task for developing environmentally friendly processes, our research entails developing an efficient etching process with low-environmental impact, integrating hybrid devices at the wafer level, using MEMS to reduce the environmental impact of processes and devices, and sharing eco-friendly information at the design stage. The details of these processes will be introduced at the exhibition.

We are looking forward to telling you about the G-devices that will drive green innovation, so please do visit our booth at the exhibition.