



The five research centers of the BEANS Project (Life BEANS Center, Life BEANS Center Kyushu, 3D BEANS Center, 3D BEANS Center Shiga, and Macro BEANS Center) and the head office of the BEANS Laboratory have been conducting R&D on biomaterial integration processes, organic material integration processes, 3D nanostructure fabrication processes, 3D nanostructure fabrication for aerospace applications, and large-area continuous micro/nanostructure fabrication processes and have been developing a knowledge database on hetero-functional integrated device technology.

Through FY 2009, the BEANS Laboratory publicized its research findings at national and international academic conferences through 100 presentations and completed applications for 23 patents. In just the fourth quarter of FY 2009 (i.e., from January through March 2010), our organization gave presentations at such international conferences as the 23rd IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2010 held in Hong Kong on January 24–28) and the 3rd International Symposium on Micro/Nano Technology (held at Seoul National University on March 21–24). Some of the major conferences in Japan at which we presented the achievements of the BEANS Laboratory included the 24th Japan Institute of Electronics Packaging (JIEP) Annual Meeting (held at Shibaura Institute of Technology on March 10), the 2010 Japanese Society for Precision Engineering (JSPE) Spring Meeting (held at Saitama University on March 16), the 57th Spring Meeting, 2010 sponsored by the Japan Society of Applied Physics (held at Tokai University on March 17–20), the 9th Congress of the Japanese Society for Regenerative Medicine (held at the International Conference Center Hiroshima on March 19), and the Society of Chemical Engineers, Japan (SCEJ) 75th Annual Meeting (held at Kagoshima University on March 18–20).

The BEANS Laboratory gave three presentations at MEMS 2010, an international conference held in Hong Kong this year. The MEMS conference is the principal event on micro/nano technology in the world and is held annually, while being rotated among the regions of America, Europe/Africa, and Asia/Oceania. The 23rd installment was held in Hong Kong since it was the Asia/Oceania region's turn to host the event. A total of 75 oral presentations and 223 poster presentations were selected for the conference for an overall acceptance rate of 33.7%.



The Hong Kong Convention and Exhibition Centre, the venue for MEMS 2010

Presentations for the BEANS Project given at MEMS 2010 were (1) “MEMS-based exposure module for continuous lithography process on fiber substrates” given by the Macro BEANS Center, (2) “Core-shell gel wires for the construction of large area heterogeneous structures with biomaterials” given by the Life BEANS Center, and (3) “Transplantation of a neurospheroid network onto the rat brain” also given by the Life BEANS Center.

The achievements of the BEANS Project have been generating much interest, often receiving coverage on television and in newspapers and trade and business journals. Recently, Shoji Takeuchi, associate professor at the University of Tokyo, and Chihaya Adachi, professor at Kyushu University, were interviewed several times about their research activities for an article in the January 2010–and final–issue of *Nikkei Microdevices*. The title of the article is “Generating Demand for a Supernatural World That Transcends Nature through Device Technology.”

The most important goal of R&D in the BEANS Project is the creation of intellectual property. In fact, all researchers in the project are assigned a quota for the number of patents or ideas they must produce. We have been applying a new type of IP management within our collaborative system of businesses, universities, and national research institutes, and recently had the opportunity to introduce this management system to a group of Japanese and foreign professionals in intellectual property at the International Patent Licensing Seminar 2010. Organized by the National Center for Industrial Property Information and Training (INPIT), a well-known organization in the field of IP management, this international conference was held at Hotel Nikko Tokyo on January 25–26. During a panel discussion on the “Current situation and future issues for IP management in the R&D consortium,” a panelist from the Interuniversity Microelectronics Center (IMEC) of Belgium representing Europe, a panelist from the Center for Information Technology Research in the Interest of Society (CITRIS) of Northern California representing the U.S., and a panelist from the BEANS Project representing Japan introduced their styles of IP management and anticipated future challenges. Since the topic was relevant to present-day research consortia, there were many enthusiastic questions from the standing-room-only audience of more than 400 attendees, making the seminar extremely rewarding.



Hotel Nikko Tokyo, the venue for the International Patent Licensing Seminar 2010