

nano tech 2012

Report on 11th International Nanotechnology Exhibition/ Technology Conference



●Exhibition booth



●At Nano/Bio ICT Symposium

The Advanced ICT Research Institute, NICT, participated in nano tech 2012, one of the world's largest leading-edge technology exhibitions, held at Tokyo Big Sight from Wednesday, February 15, to Friday, February 17, 2012. (about 45,000 visitors)

In this exhibition, with Organic Nano-Device Group of Nano ICT Laboratory, Advanced ICT Research Institute, playing a central role, Bio ICT Laboratory, Brain ICT Laboratory, Lightwave Devices Laboratory of Photonic Network Research Institute, and Outcome Promotion Department introduced nanotechnology-related research and technical information.

The latest research on an organic electrooptic device for future optical communications, from its development to a prototyping, was introduced at the exhibition booth. Also presented was research on the low-cost and ecological fabrication method of organic electronic devices using a nanoelectrolytic method, a means to easily handle a vacuum environment, which is indispensable for nanotechnology, and other research related to nano-precision structuring techniques using functionalized organic molecules, as well as research on application of biotechnologies into information and communications. We also demonstrated the "nanowire production kit," which enables easy fabrication of nanowires on a substrate using palm-sized equipment. The kit is now being commercialized by Iwata Glass Industrial Co., Ltd., through a technical transfer from the Nano ICT Laboratory.

On the first day of the conference, Advanced ICT Research Institute hosted "Nano/Bio ICT Symposium—Advanced ICT sensing technology learning from biotechnology." Sixty-two people participated, including corporate managers, researchers, and university workers. The symposium focused on the intelligent sensing functions of living organisms and sensing devices that utilize these functions. The researchers working on the cutting edge gave talk on current technological trends, followed by discussions with the audiences about the upcoming innovations that will lead to an advanced ICT society in future. In his keynote lecture, Professor Ikuro Kawagishi of Hosei University gave a talk on the outstanding features of coli bacteria to sense their environment. He then talked about the methodology to understand and control them, and the strategy to utilize them as a device function. In subsequent lectures, researchers, including those from NICT, introduced the latest research, such as the measurement and control of sensory-function in bio-system with molecule-level reactions, the applications of sensory systems of living cells as functions of molecular machine, and the correlation between the sensing mechanisms and recognition process of human brain system, each of which was followed by lively discussions with the audience. With the symposium, we have widely presented the concept of advanced ICT sensing, the vision for future communication, and the presence of NICT in the research area.