

## **Nanoelectronics Activity in Korea - More Moore.**

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It is well known that information technology, biotechnology and nanotechnology cause a revolution in the way we live in the 21<sup>st</sup> century. Unlike old technologies enjoyed by our ancestor, these technologies are surging into our society as the tide is rising and result in a tremendous influence on our life. For example, we will have intelligent robots, real-time language translator, real-time videophone and pocket-size supercomputer within the next 20 years. To pave the way for intelligent society, every computing system should be flexible, intelligent, mobile, programmable and real-time. Accordingly, computing performance and memory capacity of transistors in the computing system should be more than 1000 fold enhanced with ultra-low power dissipation as compared with present ones. ITRS roadmap presents that tera bit Flash is supposed to be produced around year 2020. This roadmap is based on the assumption that all the necessary technologies are progressively developed in time. Unfortunately, we will face big technological difficulties within 5 to 10 years due to tunneling, size variation, thermal dissipation etc..

The Tera-level Nanodevices (TND) program was established in 2000 by the Korea Ministry of Science and Technology as a ten-year program to foster university, industry and government collaborations in nanodevices research. It is one of the government's key NT programs born from Korea's 21<sup>st</sup> Century Frontier R&D. TND focuses on the development of technologies for tera-scale nanodevices used in electronics and telecommunications, with annual funding on the \$14 million scale. Some background information on nanoelectronics will be followed by detailed results which were performed in our program during the last 3 years. I will also briefly present several on-going national nanoelectronics programs and infrastructures.