



SECOND INTERNATIONAL NANOTECHNOLOGY CONFERENCE ON COMMUNICATIONS AND COOPERATION

Abstract

Japanese Consortium Activities toward CMOS Scaling Limit and Beyond

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The world is just about to evolve from the highly information-oriented society represented by the Internet into the ubiquitous society where everyone can communicate whenever, wherever and to whomever he wants. Moreover the future prospect gives us an image of the society where we can enjoy a safe and comfortable life even if the maturity of the human society proceeds. LSI devices come to be required higher performance, lower power consumption and miniaturization in order to realize the safe and comfortable society.

There are some major consortiums in each area of the world and they are working actively and aiming the progress of the CMOS device scaling. On the other hand, though LSI devices have been seeking for the higher performance by the miniaturization of feature size conventionally, it becomes difficult gradually to continue the device scaling and also the demise of the device scaling begins to be mentioned once in a while. In this situation, a new scheme of seeking the higher performance of devices, which does not depend on the device scaling, starts to be groped for and a new technology world called "Post CMOS" is expected and extending gradually.

In Japan, active researches on new materials and new process technology have started from the academic area and an introduction of these new materials and technologies into LSI's is also attempted. JEITA that is industry organization of electronic apparatus in Japan is now organizing a working group in the nano-electronics field to cooperate internationally and aiming a contribution to the next society.