Editorial

With the rapid advancement of CMOS technology, SoC(system on a chip) will be an unquestionable trend of integrated circuits in the long term, although some intermediate technologies such as SiP(system in package) may be used for a short term.

This December issue is a special issue on "SoC design" following the December 2003 issue. The prize winning papers at the 2004 ISOCC(International SoC Design Conference) were invited for submission in this special issue. The 2004 ISOCC was held at Seoul Korea on October 25-26, 2004. Ten special issue papers and one regular paper are published in this issue.

The 1st paper shows the successful operation of a 64Kb 0.18um FRAM embedded for Smart card applications at 10Mbps. The 2nd paper deals with the implementation of a 0.18um CMOS Storage-over-Ethernet disk controller chip with the maximum throughput of 55MB/s for home network applications. The 3rd paper demonstrates the reduction of a standby power to 2uW for a 333MHz PDA processor by combining both the multi-threshold CMOS technology and the post-mask enhancement technique into the ASIC design methodology. The 4th paper deals with an accurate uA-level small current delivery circuit using BiCMOS for AM-OLED drivers. The 5th and 6th papers are analog papers dealing with a 0.25um CMOS 1Gb/s half-rate burst mode CDR and a 0.18um CMOS 9-bit algorithmic ADC for optical disk drive applications, respectively. The 7th paper deals with a performance estimation technique of the on-chip bus architecture to optimize the performance of multi-tasking architecture. The 8th paper shows the implementation of an 0.35um BiCMOS active RC 2nd order Butterworth low-pass-filter used for a baseband channel selection filter of a direct conversion receiver. The 9th paper is another RF paper, dealing with a tunable bandpass filter using MEMS switched-inductors. The 10th paper is the last special issue paper, dealing with an efficient implementation of a S-box(security device) for smart card applications. The last paper is a regular paper, dealing with the magnetism in the Ni or Fe implanted ZnO crystal.

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Guest Editor of this special issue