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Abstract
With the development of Giga-scale integration, scaling of conventional flash memory devices will be limited by high-field and low-voltage operations. These technological stumbling stones have prompted a quest for alternative low-power technologies that present greater scaling capabilities. Flash emulation is important for specific embedded applications and relatively fast erase. On the other hand, high read / write throughput is essential for data storage memory cards which can compete with magnetic media. The NVM devices can be used in notebook, PDA, digital camera, cellular phone and many portable electronics, to further application such as outer space, both the developed radiation-hardened pressure cell and withstanding high cell are mandatory.
In this thesis, we have studied the charge distribution in the oxide which affects the body effect. We use two different gate-NROM (Oxide-Nitride-Oxide) and Floating gate to compare the threshold voltage shift. From the simulation data, we find that the two different gates have the same results; the body effect reduces with the channel length decreasing. Although the floating gate has the same body effect under different threshold voltages, the body effect changes with the variation of the threshold voltage value in the case of NROM device.
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