

## Overview of Phase change memory

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This coming 21st century is a digital era based on information revolution. All of human being's intellectual products will be reformed as the form of digital format which is represented as the combination of '0' and '1' and they will be transferred from the place to the place in a blink of time. In order to realize such a drastic change, new information storage technology must be invented. It also means that the invention of new materials and devices for improved information storage must be followed.

Due to the new emerging markets of personal digital devices, including PDA, digital camera/camcoder, cellular phone, MP3 player and e-book reader, flash memory market is continuously increasing. However, flash memory has somewhat fatal disadvantages such as high voltage operation, limited endurance and slow write/read speed and thus there are various efforts to replace flash memory device to new improved non-volatile memory. Among new non-volatile devices, PCRAM is regarded as one of the most promising non-volatile memory device which can replace the flash memory. In this presentation, operation principle, advantages and disadvantages of phase change memory will be explained and be compared with MRAM and FRAM.