New <u>B</u>uried B<u>it</u>-line <u>NAND</u> (*BiNAND*) Flash Memory for Data Storage

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<u>B</u>uried b<u>it</u>-line <u>NAND</u> (BiNAND) Flash is newly proposed to achieve low voltage programming/erase and facilitate multi-level storage. Due to the buried bit-line, the required high program/erase voltage for FN tunneling can be divided between word-line and bit-line and therefore minimizes the disturbance. The negative programmed threshold voltage and stopper pulse scheme are introduced also to facilitate the operation of multi-level storage due to the requirement of high array conductivity in read operation.