Resistive random-access memory based multistate register (Technion)

code: COM-1564

When investigating memory structures, we are looking for speed and efficiency. Although SRAM is a commonly used memory technology, its low density and high static power limit the amount of data that can be stored with it. Resistive RAM (RRAM), on the other hand, has an improved density. Conventional RRAM requires addresses and a specific sensing mechanism, based on a sense amplifier, which has relatively high area. The presented technology is a novel memory structure – a RRAM-based multistate register (MPR). Here, the switching procedure between active bits does not require a sense amplifier and is relatively simple and fast. MPRs can be used as pipeline registers for processors, especially multithreaded processors, register files of processors, memory cells and more.

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