High-Performance MRAM Technology with an Improved Magnetic Tunnel Junction Material

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This work is a report on high-performance MRAM Technology. 0.4 x 0.8 um^2 MTJ elements were successfully integrated with 0.35 um CMOS technology without process-induced damages. A magnetoresistance ratio of more than 55% and the read/write operating point were obtained by introducing an improved magnetic tunnel junction material. The short-pulse writing in combination with an improved cell structures suggest that MRAM has a great deal of potential for low power applications.