

Imec presents breakthrough results in resistive-switching (R)RAM

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At this week's VLSI Technology Symposium (Honolulu, Hawaii), Imec presents significant improvements in performance and reliability of RRAM cells by process improvements and clever stack-engineering, and imec introduces a new modeling approach increasing the fundamental understanding of RRAM process technology. These achievements pave the way towards scalability and manufacturability of RRAM technology.

RRAM is a promising concept for future non-volatile memories because of its high speed, low energy operation, superior scalability, and compatibility with CMOS [technology](#). Its operation relies on the voltage controlled resistance change of a conductive filament in the dielectric of a Metal/Insulator/Metal (MIM) stack. Resistive RAM ([RRAM](#)) systems based on HfO₂ have been demonstrated to have excellent scaling capabilities (area

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