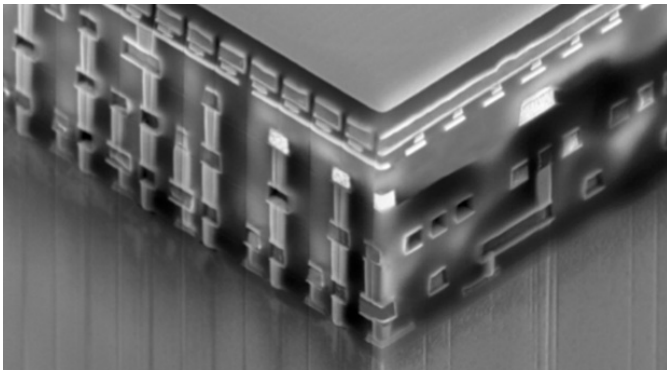


A RRAM to Boost Flash Storage

Written by Marco Attard
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Crossbar emerges from "stealth-mode" and announces its take on high density non-volatile memory-- Resistive RAM (RRAM), a technology promising up to 1 terabyte of storage on a single 200mm-square die.



The company claims RRAM offers X20 faster write speed, X20 lower power consumption and X10 the endurance at half the die size compared to best-in-class NAND flash, with a simple three-layer structure allowing the "stacking" of multiple terabytes of storage on a single chip.

The technology is also CMOS compatible, allowing the easy integration of logic and memory into a single chip.

In a few words, RRAM consists of 3 layers-- a metallic top electrode, a switching medium and a bottom non-metallic electrode, with ions passing between the top and bottom electrodes creating the 1s and 0s of digital storage. Thus it is different from NAND (since it uses no transistors) or memristor memory (consists of two electrodes on either side of a chalcogenide).

"Non-volatile memory is ubiquitous today, as the storage technology at the heart of the over a trillion dollar electronics market," Crossbar CEO George Minassian says. "And yet today's non-volatile memory technologies are running out of steam, hitting significant barriers as they scale to smaller manufacturing processes. With our working Crossbar array, we have achieved all the major technical milestones that prove our RRAM technology is easy to manufacture and ready for commercialisation."

Crossbar hopes RRAM will find its way in applications ranging from mobile devices and wearable electronics to enterprise storage and cloud computing, as well as the various

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components making the so called "internet of things."

RRAM still needs a few years before it takes on the flash market, even if Crossbar already developed a RRAM memory array at a commercial fab. But in an increasingly storage-hungry world RRAM might grow into a major future contender.

Go [Crossbar Unveils Crossbar RRAM](#)