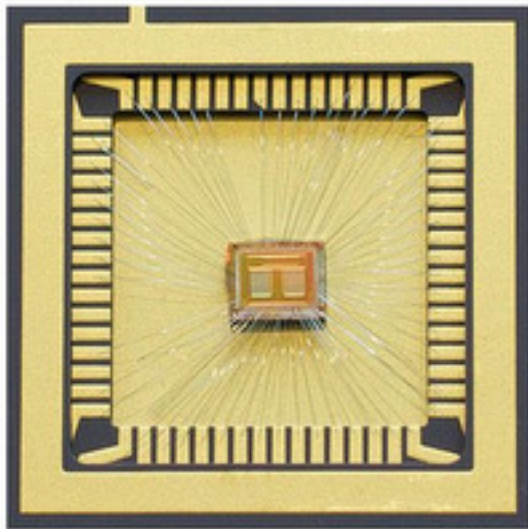## PCM Memory in Market by 2016, Says IBM

Written by Bob Snyder
01 July 2011

In their paper for IEEE's International Memory Workshop, you can read the excitement between the lines at IBM about their prototype **multilevel cell phase-change memory (MLC PCM) chip.**

IBM's prototype multilevel cell phase-change memory (MLC PCM) chip

Phase-change memory (PCM) is not as fast as DRAM, but IBM says it's **100X faster at reading and writing data than flash memory**
. IBM doesn't expect PCM to replace DRAM, which can read and write data much more quickly. But PCM could boost DRAM performance by caching data for fast access when it's needed.

For the server applications IBM has in mind, improvements in multilevel storage and drift tolerance should make **PCM competitive in 2016**, say the IBM Research authors.

IBM's main application, being in the server business, is enterprise storage and memory applications. In the consumer market, the most important attribute is cost per bit. In enterprise applications, speed is more important because PCM will sit close to the main memory where there are lots of transactions per second. And endurance must come with the speed as the device must read and write with industrial strength.

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For example, flash memory in the server market in the form of SSDs offer significant performance increases but they're more expensive and usually wear out as data is read and written over and over. **Flash degrades at about 30,000 write cycles for business-grade storage products and PCM can endure at least 10 million write cycles** , IBM says.

IBM won't actually make these phase-change memory chips, but they will license the technology.

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