

GE announces 500 GB holographic disc writer that runs at Blue-Ray speed

July 21 2011, by Bob Yirka



A prototype holographic drive system designed by GE researchers in the Applied Optics Lab at GE Global Research in Niskayuna, NY.

(PhysOrg.com) -- GE's technology research group has announced the development of an optical disc writer capable of writing 500 GB of data onto a disc the same physical size as a DVD, at roughly the same speed as Blue Ray technology. This comes two years after announcing the holographic technology that was used to first imprint the discs with 25 times as much data as a Blue Ray Disc can hold.

By making an announcement about an advancement in what most see as a dying technology, GE is taking somewhat of a risk, but Peter Lorraine, Manager at GE Global Research, who will be presenting today at the IEEE's Joint International Symposium on [Optical Memory](#) & Optical Data Storage meeting is expected to pooh-pooh such notions and instead explain how the new technology could be used for long term storage for data, that the company says, will last for a hundred years (presumably if stored in ideal conditions).

The technology works by initially stamping millions of tiny holographic images into a polycarbonate (a type of thermoplastic polymer) material, then a laser (which uses the same wavelength as Blue Ray technology) is used to erase parts of the holograms to encode data. Write speeds are 4-5 megabytes per second, which is on a par with Blue Ray (4.5 Mbytes/s). With this process the entire surface of the disc can be used, rather than just the four layers on the surface of the disc that Blue Ray is able to use, which is why it can hold so much more.

And while critics point out that at such a rate it would take something like a whole day to fill the disc, GE counters by saying that since its primary purpose would be for archival storage, creating specialized writers that use multiple heads could very well be an option; and If such multiple read/write head drives could be created, it seems plausible to believe that such discs would be capable of carrying not just HD/3-D movies, but something even better, such as movies in a super HD (holographic?) format that hasn't even been discovered yet.

GE also points out that because the new writer uses the same wavelength as Blue Ray, its conceivable drives could be made for the new technology that would be backwards compatible, minimizing risk for both developers and end users. The company is expected to begin building arrangements with interested parties to license the new technology in just the new few months, so actual products appearing on

the market can't be too far off.

More information: [Press release](#)

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