Heat-Assisted Magnetic Recording for Ultrahigh Capacity HDDs

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Data is growing faster than the world's ability to store it. In 2025, the people of Earth will generate 180 zettabytes of data —but only 6 zettabytes of storage capacity is manufactured each year. Today's heat assisted magnetic recording products trace their origins back to the hybrid optical magnetic recording developments in the mid 1990's. The HAMR technology development featured a number of key inventions including a whole new media recording layer based on ordered FePt and a plasmonic near field transducer. The ability to record on very high anisotropy granular media with a recording footprint defined by a thermal spot in the media, has allowed us to extend capacities to 3 TB/disk and beyond in a 3.5" form factor. Demonstrations at 5 TB/disk will be shown along with ideas to extend the technology to 10 TB/disk.