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[Hitachi to Put 4TB of Data on an HDD](#)

High sensitivity is the key

Hitachi announced the successful testing of a new key technology that will be used to manufacture hard disk drives which will offer very high storage capacities, effectively pumping at least four times the currently high end storage systems. Researchers from Hitachi expect to have a commercially viable storage solution that implements this new technology by 2011 when general customers are going to see widely spread desktop drives with capacities in excess of 4TB while the smaller mobile hard disk drives are most likely to hit the 1TB mark too. The key process that will allow the design and manufacture of such drives is the nanoscale miniaturization of the read and write heads along side with a greater data density. The application of this technology was presented at the Perpendicular Magnetic Recording Conference in Tokyo by scientists from the Japanese hard disk drive company Hitachi and according to the news site [cnn](#) it is simply the rediscovery of an already known and applied technology known as giant magnetoresistance, or GMR for short. The current trend in the hard disk drive design and manufacturing industry of putting more and more data on the disk surface is sustained by the fact that scientists discovered both new means to make the surface areas more sensitive and thus more spacious and by the increase in the data transferring heads' sensitivity to very low variations in the surfaces' magnetic fields. The application of the GMR based technologies led to the doubling in storage capacity that occurred during the early 2000s as it allowed the construction of a new breed of heads for hard disk drives that were much more sensitive. As the GMT based hard disk drives were slowly approaching the limit of their technology scientists started looking for a replacement technology and they used it until recently when the giant magnetoresistance technology came back with a vengeance as the next generation of hard disk drives are designed. "We changed the direction of the current and adjusted the materials to get good properties," said John Best, chief technologist for Hitachi's data-storage unit, in a public statement concerning the new generation of hard disk drives that are using the smallest read and write heads in the world. These data transferring heads are built using a nanoscale technology as they are in the 30-nanometer to 50-nanometer range. As other hardware manufacturing companies are working too on similar technologies that are expected to greatly increase the storage capabilities of their hard disk drive lines, users may expect to see bigger and bigger capacity products hitting the market in the coming years.