

All your movies on a single DVD: study

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A laptop with an HD DVD reader. Scientists unveiled new DVD technology on Wednesday that stores data in five dimensions, making it possible to pack more than 2,000 movies onto a single disc.

Scientists unveiled new DVD technology on Wednesday that stores data in five dimensions, making it possible to pack more than 2,000 movies onto a single disc.

A team of researchers at the Swinburne University of Technology in Melbourne, Australia, used nanotechnology to boost the storage potential nearly 10,000-fold compared to standard DVDs, according to a study published in the peer-reviewed journal *Nature*.

"We were able to show how nanostructured material can be incorporated onto a disc in order to increase data capacity, without increasing the physical size of the disc," said Min Gu, who lead the team.

Discs currently have three spatial dimensions. By using gold nanorods Gu and colleagues were able to add two additional dimensions, one based on the colour spectrum, and the other on polarisation.

Because nanoparticles react to light depending on their shape, it was possible to record information in a range of different colour's wavelengths at the same physical location on the disc.

Current DVDs record in a single colour [wavelength](#) using a laser.

The fifth dimension was made possible by polarisation. When light waves were projected onto the disc, the direction of the electric field within the waves aligned with the gold nanorods.

"The polarisation can be rotated 360 degrees," explained co-author James Chon.

"We were, for example, able to record at zero degree polarisation. Then on top of that, were able to record another layer of information at 90 degrees polarisation, without them interfering with each other," he said in a statement.

The researchers are still working out the speed at which the discs can be written on, and say that commercial production is at least five years off.

They have signed an agreement with Korea-based Samsung, one of the world's largest electronics manufacturers.

Last month, US technology giant General Electric said its researchers had developed a holographic disc which can store the equivalent of 100 standard DVDs.

Dual-layer Blu-ray [discs](#) hold the equivalent of 10 standard DVDs.

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