

Sharp Develops Dual-Layer Super-Resolution Optical Disc Technology, Enables Next-Generation 100-GB Optical ROM Discs

July 7 2005

Sharp Corporation has developed an optical disc technology that enables super-resolution readout of data pits in a dual-layer structure by employing a transparent super-resolution(*1) functional film(*2). The development of this technology will make it possible to increase the storage capacity of optical discs using blue lasers to 100 GB in the dual-layer structure.

For some time, Sharp has been searching for materials with the high optical transmittance needed to create dual-layer super-resolution optical discs, and has now developed a super-resolution functional film based on a metal oxide for this purpose.

This dual-layer super-resolution readout technology will make it possible to store 100 GB of information on a single optical disc, allowing the disc to hold approximately nine hours(*3) of high-definition television (HDTV) video.

Major Features

1. Use of a transparent super-resolution functional film makes dual-layer super-resolution optical discs possible

Achieving a multi-layer super-resolution optical disc demands the use of

a transparent material with high optical transmittance for the super-resolution functional film, but conventional super-resolution films have low light transmittance and cannot be made into multi-layer structures. The proprietary super-resolution functional film developed by Sharp at this time is based on a metal oxide, and offers high light transmittance, making it possible to achieve dual-layer super-resolution discs.

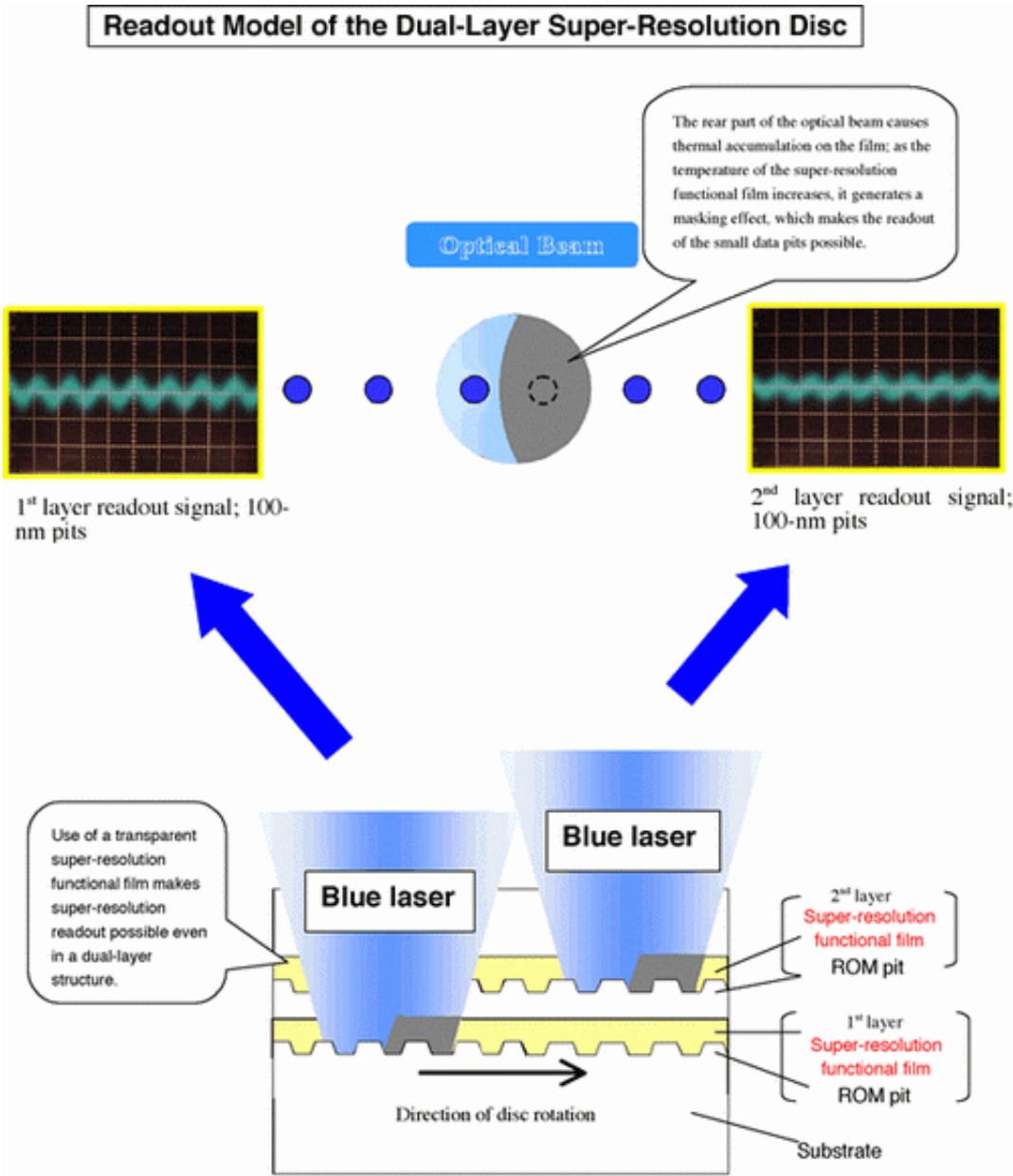
2. Eco-friendly material

This super-resolution film uses a low-environmental-impact material, and will yield environmentally friendly discs.

*1 "Super-resolution" refers to technology that enables readout of the small data pits on the optical disc beyond the optical diffraction limit.

*2 The optical transmittance of the film changes with temperature: when the temperature increases, transmittance declines, generating a masking effect.

*3 With an average data transfer rate of 24 Mbps.



Details of this dual-layer super-resolution optical disc technology will be announced at the ISOM/ODS 2005 (International Symposium on Optical Memory/Optical Data Storage 2005) to be held from July 10th to 14th in

Honolulu, Hawaii.

Citation: Sharp Develops Dual-Layer Super-Resolution Optical Disc Technology, Enables Next-Generation 100-GB Optical ROM Discs (2005, July 7) retrieved 25 April 2024 from <https://phys.org/news/2005-07-sharp-dual-layer-super-resolution-optical-disc.html>

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