Nano-Grating DVDs could store 100 times more

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Iomega Corporation today announced that the United States Patent & Trademark Office (USPTO) recently issued two highly notable patents to Iomega for its work with nano-technology and optical data storage, and external storage media.
New technologies could potentially allow 40-100 times more data to be stored on a DVD with data transfer rates 5-30 times faster than today's DVDs, and at similarly low costs.

On April 12, 2005, U.S. Patent No. 6,879,556 titled Method and Apparatus for Optical Data Storage was issued to Iomega. This patent is the first in a series of nano-technology-based subwavelength optical data storage patents sought by Iomega. The patent covers a novel technique of encoding data on the surface of a DVD by using reflective nano-structures to encode data in a highly multi-level format. This technology, termed AO-DVD (Articulated Optical - Digital Versatile Disc), allows more data to be stored on a DVD and could allow future optical discs to potentially hold 40-100 times more information with data transfer rates 5-30 times faster than today's DVDs, and at similarly low costs. This invention was recently recognized as a winner of the Nanotech Briefs' Nano 50 awards in its product category. The Nano 50 awards are given to the "best of the best" in the industry -- the innovative people and designs that will move nano-technology to key mainstream markets.

Iomega is working to investigate the commercial feasibility of this format and other nano-structural data encoding formats. One possibility being investigated, termed NG-DVD (Nano-Grating - DVD), uses nano-

gratings to encode multi-level information via reflectivity, polarization, phase, and reflective orientation multiplexing. Iomega is concurrently evaluating and developing appropriate partners to leverage this intellectual property for producing commercial data storage devices.

"Subwavelength optical data storage can provide an array of mechanisms by which the state of a focused spot of light upon reflection can be precisely changed. This is the key to new commercially interesting multi-level optical data storage that this technology represents," commented Fred Thomas, Chief Technologist, Research and Development, Iomega Corporation. "The nano-replication technologies that are used to fabricate these structures at low-cost are just emerging from various labs. I believe the scope of Iomega patents issued and pending in this area, in conjunction with these exciting new nano-replication technologies, will make this a fertile area for optical data storage development and innovation for years to come. As high definition content becomes more pervasive, Iomega sees significant technology partnership and licensing opportunities for this intellectual property."

Thomas will present an overview of subwavelength optical data storage technology at the prestigious Information Storage Industry Consortium (INSIC) symposium in July in Monterey, CA.

On August 31, 2004, U.S. Patent No. 6,785,091, titled Interchangeable Cartridge Data Storage System for Devices Performing Diverse Functions, was issued to Iomega. This is the third in a very exciting series of related patents that apply to Iomega's pioneering work related to bridge media -- the use of media, or disks, that can work on a computer as well as other devices. The new '091 patent covers inventions dating back to at least November 1996, for exchanging digital data among multiple digital devices. A common digital data format is employed to further facilitate exchange of data between devices.

"Iomega believes these bridge media patents provide for broad range market protection for manufacturers of various types of mobile data storage devices," stated Thomas Kampfer, Executive Vice President, Business Solutions and General Counsel, Iomega Corporation. "The U.S. Patent and Trademark Office has confirmed that Iomega invented the broad concept of exchanging data between a computer and another digital device using removable data storage. As devices such as digital cameras and cellular telephones become more complex, consumers are able to benefit from Iomega's creativity by using simple, removable data storage media to exchange information between the device and a computer."

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