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DCE Aprilis offers new high-capacity, violet-sensitized prototype media

Type E, 407-nm prototype media exceeds current and future capabilities of existing blue-violet media with advantages in recording sensitivity and dynamic range for achieving high data transfer rates and high storage capacity

MAYNARD, MASSACHUSETTS, USA – Optical storage media is undergoing rapid development and change, and DCE Aprilis Inc., a wholly owned subsidiary of Dow Corning Corporation, is pushing the envelope of innovation. With the release of the new Type E prototype media, data transfer rates (read and write) surpassing 125 MB/sec and capacity exceeding 400 GB on a standard 120-mm disk are now achievable.

“Given the rapid growth in storage solution needs, consumers and businesses are looking to the next generation of storage media for exponential capacity and data transfer rate increases,” explained DCE Aprilis General Manager Shane Ladwein. “DCE Aprilis *DHD*[®] Type E prototype media breaks away from the limits of traditional optical media chemistry and recording techniques with a road map projecting greater than 1 terabyte (TB) of storage in combination with real time recording on moving media.”

DCE Aprilis *DHD* Type E prototype media not only increases storage density inherent with shorter-wavelength sensitive media, but adds advanced molecular design employing patented cationic ring opening polymerization (CROP) chemistry to fully exploit the next generation of storage possibilities. “With high recording sensitivity, expanded dynamic range, and the inherent low shrinkage advantage of CROP, the capabilities of Type E prototype media will meet the needs of consumers and businesses for tomorrow,” said DCE Aprilis Scientist David A. Waldman. Waldman presented development results for the recent Type E prototype research at the Optical Data Storage Conference in Portland, Oregon, USA on May 22, 2007.

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With its CROP chemistry, DCE Aprilis *DHD* Type E prototype media features uniquely high recording sensitivity, providing real time recording on moving media without pre-exposure requirements. Using pulsed lasers and fast spatial light modulators, recording data transfer rates of several gigabits per second are achievable, greatly exceeding the transfer rates of traditional optical media and other competitive holographic technologies.

Additionally, DCE Aprilis *DHD* media is uniquely suitable for both multilayer volumetric microhologram and volumetric binary data page holographic recording. In microhologram applications, which utilize multiple (10s) discrete layers of single-bit volumetric data locations, Type E prototype media has a demonstrated capacity of 50 layers with run length resolution in layers comparable to DVD density in a material thickness of only 0.3 mm, greatly exceeding the two- to four-layer storage capacity of *Blu-ray*^{®1} technology. The high recording sensitivity uniquely enables media speeds ranging to several thousand rpm, or faster.

Capabilities in binary data page recording, however, showcase the future of optical media. Volumetric storage multiplexes hundreds of holographic data images into single storage cylinders, creating an extremely high data storage density of greater than 400 Gb/in². Moreover, the volumetric storage provides inherent archival protection and security, with data availability redundancy that minimizes the detrimental effects of surface scratches and similar damage.

When compared to traditional archival techniques such as magnetic tape, the near-online storage benefits of DCE Aprilis *DHD* media are striking. Beyond the inherent advantage that random access optical media has over linear tape, the high-speed capability enables average seek times of 100 milliseconds, versus about 30 seconds for tape. Coupled with archival life exceeding 50 years, DCE Aprilis holographic media is suitable for the demands of the enterprise data archive and storage market.

DCE Aprilis Inc., develops holographic media for the optical storage industry, including custom media for specific applications. Founded on the vision of creating best-in-class media solutions based upon proprietary holographic technologies, DCE Aprilis' media prototypes are designed to provide the highest value of combined data transfer rates (read and write), capacity,

accessibility, and data archivability at prices comparable to incumbent technologies. DCE Aprilis holographic technology solutions are ideal for near-online access to vast amounts of data, including image databases, multimedia applications and data warehousing. DCE Aprilis Inc., is a wholly owned subsidiary of Dow Corning Corporation. Information about DCE Aprilis holographic media prototypes can be found on the website (www.aprilisinc.com) or by contacting DCE Aprilis at +1 978 450-1000.

¹*Blu-ray* is a registered trademark of Sony Corporation.

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