Vector-Wave Holographic Memory: Challenge Again

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In 1970s, it was the first phase of holographic optical memory technology, which had attentions by many researchers due to promising large capacity of data storage based on Fourier transform holography because large page data could be stored in small area. In the second phase in the first decade of 2000s, volume holographic techniques using photorefractive materials have been impressively demonstrated. Great growth of semiconductor and magnetic data storage technologies have carried away holographic techniques. We are now challenging again holographic data storage, in which new technologies will be introduced, such as vector wave recording, phase and amplitude encoded multiplexing etc. to develop 3 Tera Byte/5 inch disc. Optical data storage systems are energy-conserving and their life time is much larger than that of other systems.