



# Gerardo Bertero

## “Magnetic Recording Media Technology for the Tb/in<sup>2</sup> Era”

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Magnetic recording has been the technology of choice for massive storage of information. The hard-disk drive industry has recently undergone a major technological transition from longitudinal magnetic recording (LMR) to perpendicular magnetic recording (PMR). However, conventional perpendicular recording can only support a few new product generations before facing insurmountable physical limits. In order to support sustained recording areal density growth, new technological paradigms, such as energy-assisted recording and bit-patterned media recording are being contemplated and planned. In this talk we will briefly discuss the LMR-to-PMR transition, the extendibility of current PMR recording, and the nature and merits of new enabling technologies. We will also discuss a technology roadmap toward recording densities approaching 10 Tb/in<sup>2</sup>, approximately 40 times higher than in current disk drives.

Gerardo Bertero has worked in the magnetic recording industry for more than 15 years. He obtained his Ph.D. in Materials Science and Engineering from Stanford University, where he worked on Co/Pt and related metallic multilayer structures. In 1994, he joined Komag, Inc., now the Magnetic Media Division of Western Digital Co., where he is Vice President for R&D in charge of all vacuum related processes, and is also in charge of media overcoat development. His research focus has been on magnetic performance of recording media. He specializes in the synthesis of magnetic thin films and the performance and characterization of materials and thin film structures, including both hard and soft magnets. He has numerous technical publications in magnetic recording media and has given multiple talks on these topics. He served as chairperson of TMRC 2004 and helped in the organization of numerous conferences and symposia. He is a member of the IEEE Magnetics Society, where he also served in the Society's Technical Advisory Committee. He holds 14 U.S. patents.

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