

# TECHNOLOGY High-Speed Massive Magnetic Imaging on a Spin-Stand

### **OVERVIEW**

Due to importance of information technology in the context of the modern society, large efforts are made to improve the magnetic materials as well as the analytical tools needed to optimize them. For this reason visualization of magnetic structures is an important issue.

Researchers at University of Maryland, College Park, have developed a new technique for magnetic imaging on a spin-stand.

This new technique allows nondestructive data retrieval from commercial hard disk drives.

A special method of triggering as well as a numerical alignment algorithm have been developed in order to always image the same target area and to offset any resultant image shift

The comparison of this new technology with the magnetic force microscopy (MFM) imaging technology reveals some of the advantages of this method

Generally, the key factors of this technology are:

- · High scanning rate
- · Large surface scanning range
- · The absence of scanning-induced hysteresis
- · Easy to locate the disk target area to be imaged
- · Nondestructive technology (imaging performed under similar condition as in actual hard disk drives)
- The ability to rapidly acquire imaging in order to increase signal-to-noise ratio
- . The ability to control the scanning procedure that the whole disk can be imaged automatically

This invention has application to:

- $\cdot$  Data recovery where the data can be recovered through imaging
- · Hard disk manufacturing to asses the quality of the written data
- Applications to testing of servo-writers
- · Magnetic head characterization
- · Laboratory tool in government/universities for fundamental research on magnetic recording
- · Setting the standards for hard drive quality

See US Patent No. 7,005,849

For additional information, please contact, Office of Technology Commercialization, University of Maryland, College Park, phone: (301) 405-2555, e-mail:

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## **Additional Information**

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Patent(s) pending

### LICENSE STATUS

Contact OTC for licensing information

### CATEGORIES

- Microelectronics
- Sensors/Monitors
- Imaging devices

#### **EXTERNAL RESOURCES**

• US Patent 7,005,849

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