

# MAGNETISM AND INFORMATION STORAGE

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# Priorities

- Create a modern educational module supplementing current High School/College curriculum
- Covering the material from basic phenomena to practical devices (in our case – hard drives)
- Multiple levels – separate material for High School and College levels
- Easily accessible via WWW

# Progress Report

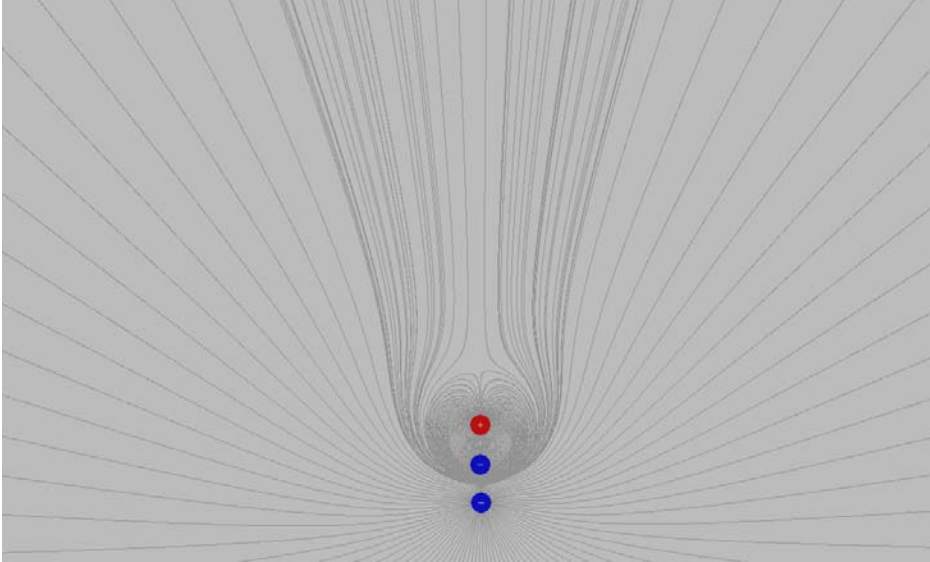
*Completed:*

- ✓ Brochure that explains the material
- ✓ Computational/visualization module, designed both to illustrate the material in the brochure and to be used in laboratory works given to students
- ✓ Independent testing of the module

## *Incomplete:*

- Introduction to advanced topics, such as spintronics, atomic scale information storage
- WWW-based integration of research tools
- Development of an alternative visualization module based on JAVA
- Final module's adjustment to the needs of specific customers

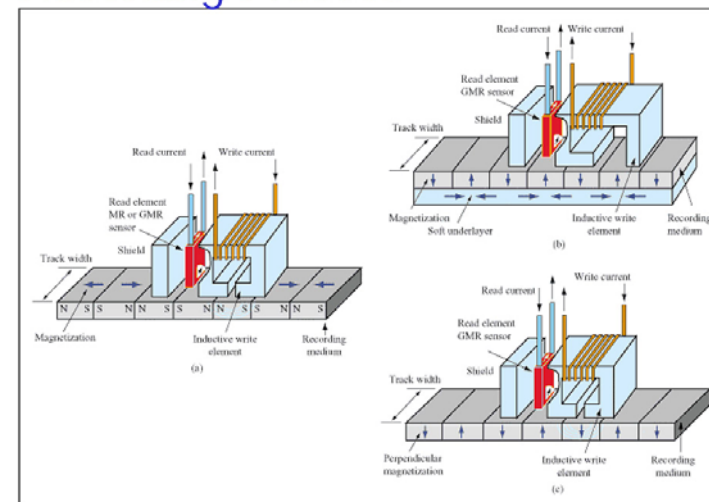
# Scope of the material



From basic physics of magnetic dipoles, whether that of individual electrons or interstellar bodies like Earth

To modern applications of nanomagnetism, such as hard drives

## Recording Process

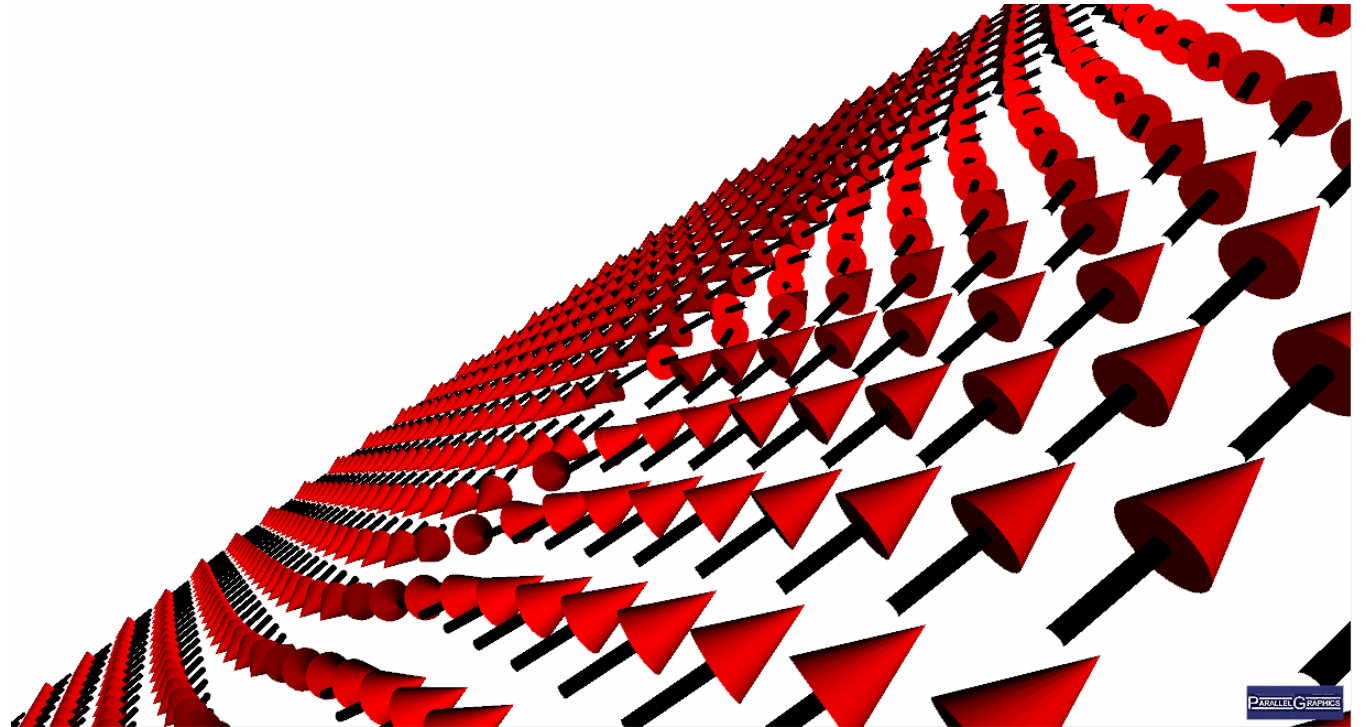


D. Thompson, J. Best,  
“The future of magnetic  
data storage  
technology”,  
IBM J. Res. Develop.,  
Vol.44, No.3, 2000.

# Visualization

3D visualization based on VRML technologies

Example: [www.rkmag.com/chang/per.wrl](http://www.rkmag.com/chang/per.wrl)



# Laboratory works

10 laboratory works, designed to both illustrate the concepts in the course and test the students.

*Example:*

*Try varying the size of a given magnetic sample between 50 and 5000nm. Can you explain the changes in the equilibrium configuration?*

This task is supposed to test the students' knowledge of domains, magnetic dipoles and specifics of nanomagnetism.