

CMRR Report

Center for Magnetic Recording Research

ISSN: 0888-7381

Volume 3, Number 2

Summer 1986

Ceremony to Dedicate New Building

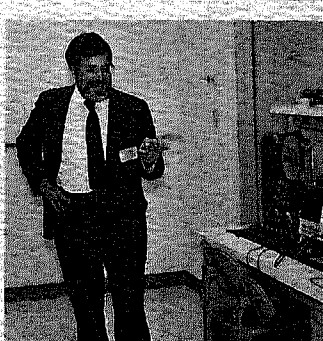
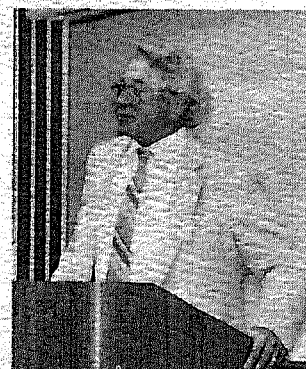
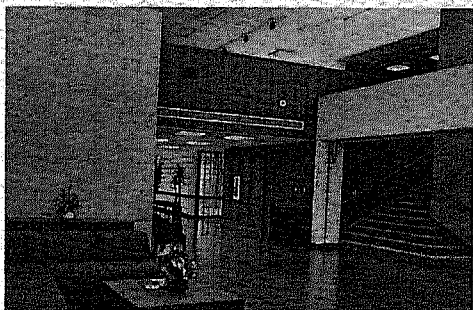
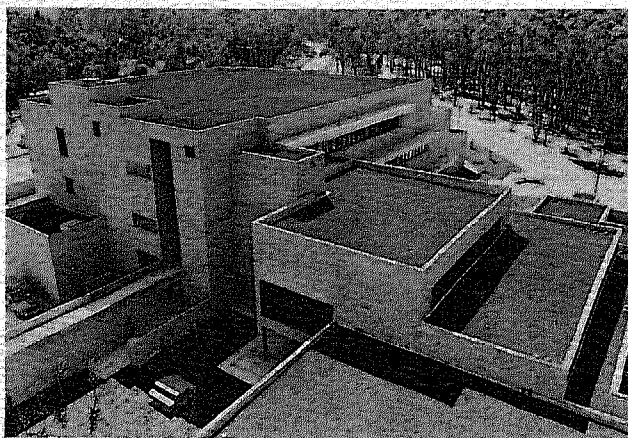
On March 27, the newly constructed building which houses the Center for Magnetic Recording Research was officially dedicated. The ceremony began with an address by the director of CMRR, John C. Mallinson, during which he stressed the importance of a research center devoted to fostering basic research in magnetic recording technology in order to satisfy the ever increasing demands for higher storage densities. The Center provides a model for cooperation among competing private corporations. The number of sponsors of CMRR has grown to thirteen since its inception in 1983.

The dean of Engineering, M. Lea Rudee and the chancellor of UCSD, Richard C. Atkinson also addressed the assembled group which comprised members of the sponsoring corporations, local dignitaries and invited guests from industry and academe.

The keynote address was given by Dr. Art Anderson, retired vice president and director of research at IBM, and a prominent figure in the establishment of CMRR. He cited industry interest in increasing communication of basic information as distinct from product research, as one of the reasons for industrial support of CMRR.

After the formal presentations, visitors were toured over the 57,000 square foot facility to view the newly equipped research and teaching laboratories and the Information Center. Graduate students and resident academic scholars involved in research projects at the Center had prepared poster presentations and were on hand to discuss their work.

The afternoon was rounded off with an informal reception in the foyer area adjoining the lecture hall, part of the complex which forms the Director's Suite.



University of California, San Diego



From the Director

CMRR continues to ramp up ahead of schedule. We now have all four endowed professors appointed, over one dozen classes are listed in the official UCSD schedule of classes and, in total, thirty-six graduate students are hard at work. The fourth appointed professor is Ami Berkowitz of General Electric Research Laboratories, Schenectady, NY. Ami, a well-known expert in the micromagnetics of particles and

thin-films, will join us in the fall.

The outfitting of our new building is proceeding well. The third, upper floor is dedicated to the endowed professors. The second floor will house at least five other professors from the UCSD departments. Their principal emphasis will be upon materials and media research with labs devoted to sputtering, electro-plating, spin- and web-coating, and magnetometry.

On March 27 we held the dedication ceremony of the CMRR building. While this happy event is covered elsewhere in this issue of CMRR Report, I must add that it was a source of great satisfaction and pride to me.

During the last two months, I have been visiting most of CMRR's original sponsors and many potential new sponsors. One of the issues I have been discussing is the almost complete lack of federal funding of magnetic recording technology. It appears that the 1983 NSF "MINT" workshop has not borne fruit. It is my opinion that one can make, today, just as good a rationale for massive Federal support of storage technology as was made several years ago for VLSI research and development. In both cases, the future evolution of computers is critically dependent upon the technology, and foreign competition looms as a major threat to U.S. industry. If any readers have advice or help to offer on this taxing subject, I will be glad to hear from them.

Telephone Numbers Change

The University of California, San Diego has installed a new telephone system for the campus. There is a new three digit prefix—534—which replaces the existing 452 prefix. The area code (619) remains the same.

Following is a list of CMRR faculty and staff telephone numbers:

	Inquiries	534-6198
John C. Mallinson	Director	534-6210
Phebe Cohen	Asst. to the Director	534-6563
Jack K. Wolf	Professor	534-6218
H. Neal Bertram	Professor	534-6588
Frank E. Talke	Professor	534-3646
Dawn Talbot	Information Center Manager	534-6213
Jan Neumann	Library Asst.	534-6199
	Telefacsimile	534-2720

With our relocation onto the university campus, our internal mail code has also changed and is now R-001. Use of this code will speed mail delivery on campus.

Information Center Welcomes New Staff Member

On May 27, Jan Neumann joined the staff of CMRR as a library assistant in the Information Center. Jan had previously worked for nine years at UCSD's Biomedical Library, so is well versed in university library procedures. She will have responsibility for placing orders for new material, processing books and journals on arrival, and will handle requests for documents from the collection. We are pleased to have Jan join us. Her enthusiasm for her new position will greatly benefit us all.



Richard Benson to Spend Sabbatical at CMRR

Dr. Richard Benson has joined CMRR on a twelve month sabbatical that began in July 1986. He is an associate professor of mechanical engineering at the University of Rochester in New York, and has degrees from Princeton University (B.S.E., 1973), the University of Virginia (M.S., 1974) and the University of California, Berkeley (Ph.D., 1977). Benson's interest in magnetic storage devices dates back to his doctoral dissertation on the mechanics of very flexible spinning disks. This work was supported by IBM, San Jose and supervised by Professor David Bogy. It was during this time that Benson came to know Professor Frank Talke, who holds one of the Center's four endowed chairs.

From 1977 to 1980, Dr. Benson worked for the Xerox Corporation, specializing in the mechanics of paper and paper transport design. The mechanics of paper has continued as one of the main research thrusts of Benson's general study of delicate and easily-deformed structures. In the field of magnetic recording technology, Dr. Benson has focused on the mechanical equilibrium and stability of very flexible tapes and disks. Recent emphasis has been on the significance of geometric imperfections. Much of Benson's work in magnetic recording technology is funded and assisted by the Eastman Kodak Company. While at the Center, Benson will work closely with Professor Frank Talke on problems concerning the tribology of head/disk and head/tape contact.

3M Gives Research Gift of \$2,000 to Glenn Dixon

Dan Argento of 3M's Camarillo plant attended a recent San Diego Chapter Magnetism Society meeting and presented a check for \$2,000 to Glenn Dixon. Glenn is seeking his graduate degree in the Electrical Engineering & Computer Sciences Department at UCSD. He completed his undergraduate work at Dartmouth College, where he was on the varsity swim team and active in other campus activities. Glenn will use this money for his research in making channel measurements on the magnetic recording channel. Endowed Professor Jack Wolf of CMRR is his adviser.

Equipment Given by IBM

At the suggestion of Dr. Ian Croll, IBM visiting researcher at CMRR, Professor Sheldon Schultz of UCSD's Physics Department contacted Dr. Don L. Thomas, coordinator of IBM's Gifts to Universities Program, and was given a large selection of furniture and equipment for use in his research program. Professor Schultz spent a day at the San Jose warehouse and feels it was time well spent.

Magnesette-100 System Installed

After a good deal of planning, the Magnesette-100 production sputtering system which was donated by Temescal of Berkeley, finally arrived at the Center. The dimensions were such that the freight elevator could not transport it to the laboratory on the second floor where the system was to reside. Some anxious moments accompanied the final stages of the delivery. With expert guidance from Temescal's staff, the system was finally lifted into place.



Donation of Books to Information Center

Mr. Mark Siera, former Instruments and Mechanisms Manager for Product Development at Lockheed Missiles and Space Company, Palo Alto, donated his personal collection of books to the Information Center. The technical books included some thirty volumes on magnetic recording technology. Along with this published material, Mr. Siera also donated his course notes and accompanying slide collection. This material was prepared by Mr. Siera when he was teaching seminars on magnetic recording held at the University of California Extension between 1962 and 1964. We thank Mr. Siera for his generous gift.

Research Proposals Funded by CMRR

1. Dr. Johann Oesterreicher, Department of Chemistry, UCSD.
Project title: "Materials for Magnetic Recording"
Number of students supported: 2 research assistants
*Dates: 6/1/83-5/31/84
- 1B. One year extension of above project
Number of students supported: 3 research assistants
*Dates: 6/1/84-5/31/85
- 1C. One year extension
Project title: "Metallic Materials for Magnetic Recording"
Number of students supported: 3 research assistants
*Dates: 6/1/85-5/31/86
- 1D. One year extension
Number of students supported: 3 research assistants,
1 postgraduate researcher
Dates: 6/1/86-5/31/87
2. Dr. Harry Suhl, Institute of Pure & Applied Physical Sciences, UCSD
Project title: "Dynamics of the Magnetization Field and Magnetic Noise"
Number of students supported: 1 graduate student,
1 post-doctoral researcher
*Dates: 9/19/83-9/13/85
- 2B. One year extension
Project title: "The Dynamics of Switching Processes of Magnetic Media"

Number of students supported: 1 research assistant,
1 post-doctoral researcher

Dates: 10/1/85-9/30/86

3. Dr. Ron Soohoo, Electrical & Computer Engineering, UCD
Project title: "Micromagnetics of Recording Heads & Media"
Number of students supported: 2 research assistants,
1 undergraduate engineering aide
*Dates: 10/1/83-9/30/84
4. Dr. David Boggy, Mechanical Engineering, UCB
Project title: "Mechanical Analysis of the Head/Disk Interface in Magnetic Recording"
Number of students supported: 2 research assistants
*Dates: 7/1/83-6/30/86
- 4B. Supplemental funding for DISA transverse laser doppler anemometer
*Date: 6/84
- 4C. One year extension
Project Title: "Head/Disk Interface Dynamics"
Number of students supported: 4 Ph.D. candidates
Dates: 9/1/86-8/31/87
5. Dr. Manuel Rotenberg, Electrical Engineering & Computer Sciences, UCSD
Project title: "Aerodynamics of Recording Heads in an Environment of Large Knudsen Numbers"
Number of students supported: 1 graduate student
*Dates: 2/84-8/84
- 5B. Project title: "Simulation of 3-D Flows in Very Narrow Channels"
Number of students supported: 1 graduate student
*Dates: 7/1/85-6/30/86
6. Dr. Fred T. Parker, Department of Chemistry, UCSD
Project title: "Mossbauer Spectroscopy on Materials for Magnetic Recording"
Number of students supported: 2 research assistants
*Dates: 7/1/84-6/30/85
- 6B. One year extension of above project
Number of students supported: 2 research assistants
*Dates: 6/1/85-5/31/86
- 6C. Six month extension of above project
Number of students supported: 1 research assistant
Dates: 6/1/86-11/30/86
7. Drs. S. Schultz, D.R. Fredkin, S.B. Oseroff, Department of Physics, UCSD
Project title: "Research on Problems in Magnetic Recording"
Number of students supported: 4 research assistants
*Dates: 7/1/84-6/30/85
- 7B. One year extension of above project
Number of students supported: 4 graduate students,
1 postgraduate research physicist
*Dates: 7/1/85-6/30/86
8. Dr. Stanley Middleman, Applied Mechanics & Engineering Sciences, UCSD
Project title: "Fluid Management Techniques for the Creation of Magnetic Recording Media"
Number of students supported: 1 research assistant
*Dates: 10/1/84-9/30/85
9. Dr. Huey-Lin Luo, Electrical Engineering & Computer Sciences, UCSD
Project title: "Studies on Thin Films of Magnetic Recording Materials"
Number of students supported: 3 graduate students
*Dates: 4/1/85-3/31/86
- 9B. One year extension of above project
Number of students supported: 3 graduate students
Dates: 4/1/86-3/31/87

*Completed

Calendar

This section includes forthcoming conferences, meetings, symposia, special courses, etc., related to magnetic recording.

September 2-5, 1986	MRM'86—International Conference on Magnetic Recording Media, Parma, Italy
September 8-10, 1986	The Magnetic Recording Channel, Montreux, Switzerland
September 14-20, 1986	International Conference on Physics of Magnetic Materials (ICPMM), Spala, Poland
September 22-24, 1986	Data Storage '86, San Jose, CA
September 25, 1986	IEEE Magnetics Society San Diego Chapter lecture, CMRR, 7-9 p.m. Speaker: Professor Frank E. Talke
October 13-16, 1986	Short Course in Magnetic Recording Technology, University of Minnesota, Minneapolis, MN
October 20-21, 1986	Electromagnetic Field Computation Workshop, Schenectady, NY
October 23, 1986	IEEE Magnetics Society San Diego Chapter lecture, CMRR, 7-9 p.m. Speaker: Jerry Miller, Masstor
November 17-20, 1986	31st Conference on Magnetism and Magnetic Materials, Baltimore, MD
November 20, 1986	IEEE Magnetics Society San Diego Chapter lecture, CMRR, 7-9 p.m. Speaker: Professor Ami Berkowitz

February, 1987

February 25-27, 1987

March 16-20, 1987

April, 1987

April 6-9, 1987

April 8-11, 1987

April 20-22, 1987

For further information: (619) 534-6563. Please send notices of meetings, etc. to the editor.

CompCon '87, San Francisco, CA

IEEE International Solid-State Circuits Conference, New York, NY

6th International Seminar on Magnetism, Dresden, GDR

Intermag '87, Tokyo, Japan

Magnetic Media Manufacturing Methods, Honolulu, HI

International Symposium on Physics of Magnetic Materials (ISPMM '87), Tokyo, Japan

International Symposium on Magnetism of Intermetallic Compounds, Kyoto, Japan

University of California, San Diego
CENTER FOR MAGNETIC
RECORDING RESEARCH
R-001
La Jolla, CA 92093

Director	John C. Mallinson
Editor	Dawn E. Talbot
Editorial Assistant	Phebe Cohen

CMRR Report is published quarterly.

University of California, San Diego
CENTER FOR MAGNETIC RECORDING RESEARCH
R-001
La Jolla, CA 92093

Nonprofit Organization
U.S. Postage
PAID
La Jolla, CA
Permit No. 128

No public funds were used in the production of the CMRR Report.