Meetings

INTERMAG

The International Conference on Magnetics (INTERMAG) was held in Washington, D.C., 5–7 April 1967. Both American and foreign participants attended.

Of extremely high interest at this year's conference were the papers on magneto-optics. D. O. Smith (Lincoln Laboratories) reviewed the potential of optical beam, addressable memories. He pointed out that writing could be performed by localized heating and that reading could be accomplished by Faraday rotation. Smith also discussed the advantages and disadvantages of the various possible storage materials. D. Treves (Ampex Corporation) discussed several possible techniques for obtaining increased signal-to-noise ratios in extremely wide-band, magneto-optic readout systems. Of first order importance in the consideration of a new technology is the area of materials preparation. J. E. Mee (Autonetics) reviewed the potential of chemical techniques for depositing epitaxial garnet films useful in beam, addressable memories.

A number of papers were presented which dealt with various aspects of thin film memories. Of particular interest was the presentation by B. I. Bertelsen (IBM Corporation) in which the problems involved in the fabrication of a coupled film memory plane were described. In addition, A. V. Pohm *et al.* (Iowa State University) described a ¼-million bit, high-density, low-power NDRO film memory.

A great deal of interest in domain wall devices was exhibited at this year's conference. R. A. Kaenel (Bell Telephone Laboratories) described various functional structures, as parallel-to-serial converters and shift registers using the propagation of domain walls in permalloy wire.

Interest in superconductivity continues to be high. A. R. Sass *et al.* (RCA) discussed some recent advances in techniques of cryotron fabrication which may help to overcome previous obstacles in the way of obtaining cryogenic memories. In addition, Sass described a new technique, based on flux shuttling, for obtaining nondestructive readout.

The second Workshop on Magnetic Recording was held at this year's conference. The most lively discussion centered around digital recording techniques indicating the dominant interest in the use of magnetic recording in computer storage. Especially controversial were discussions on whether digital recording systems took full advantage of high-resolution recording techniques such as equalization and nonsaturation recording.

The conference was sponsored by the Magnetics Group of the Institute of Electrical and Electronics Engineers.

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Thermal Addition to the Marine Environment

Thermal pollution is a relatively new factor in most ecosystems. It has, however, been a growing problem in many fresh-water drainage systems. Consequently many conventional and thermonuclear electric generating plants are now being planned and located along our maritime coasts. Such installations may have considerable impact on marine communities, particularly when the heated waters are discharged into embayments or estuaries lacking a broad connection to the sea. Such environments frequently serve as major repositories for economically important shell- and finfish as well as for nursery grounds where many pelagic fishes develop as larvae.

Because of the possible adverse effects which heated effluents might have on these populations, increasing numbers of scientists have initiated studies of the marine environments into which heated waters are to be discharged. As most of these investigations are long-term endeavors, the results are slow in being published. It was therefore proposed that those investigators with active research programs meet to consider cooperative programs and to exchange data and information on techniques.

A meeting of the working group on thermal addition was held at Sandy Hook Marine Laboratory, Highlands, New Jersey, 17–18 May 1967. Approximately 14 participants from Atlantic and Pacific marine stations attended.

Following introductory remarks by L. A. Walford (Sandy Hook Marine Laboratory), the participants briefly described their current or anticipated programs. The data suggest that thermal addition will have different effects on marine environments located at various latitudes and on different coasts. It therefore appears impossible to make gross generalizations on the basis of individual studies.

However, certain common methodology can be applied to the various studies and many techniques can be standardized so that comparable results may be obtained. Several participants are interested in the utilization of heated marine waters to increase the productivity of limited estuarine environments. Other investigators are attempting to introduce heat-tolerant forms which might replace those indigenous forms eliminated by thermal addition. Improvement in cooperation between utility companies and institutions and scientists involved in studies of thermal effects was discussed.

It was proposed that subsequent working sessions be held, each at a different host institution. This arrangement would make it possible for the participants to observe facilities and activities of the host laboratory and to make constructive criticism of the various programs. The next meeting is tentatively scheduled for early winter, 1967, and will be held at the Chesapeake Biological Laboratory, Solomons, Maryland. Scientists who are working with problems of thermal addition to marine environments and are interested in the activities of this working group should contact L. A. Walford, director, Sandy Hook Marine Laboratory, Highlands, New Jersey 07732.

The conference was held under the auspices of the Subcommittee on Productivity of Marine Communities of the International Biological Program, National Academy of Sciences, as part of the program concerning modification of the environment.

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