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Metrology for Electromagnetic Technology: A Bibliography of NIST Publications

Edited by

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Metrology for Electromagnetic Technology: A Bibliography of NIST Publications

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Electromagnetic Technology Division
Electronics and Electrical Engineering Laboratory
National Institute of Standards and Technology
Boulder, Colorado 80303-3328

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A Bibliography of the NIST Electromagnetic Technology Division Publications

Ann G. Bradford, Editor
R. E. Harris, Chief

This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NIST during the period from January 1970 through publication of this report. A few earlier references that are directly related to the present work of the Division are also included. The bibliography includes publications in cryoelectronic metrology and superconductor and magnetic measurements.

Key words: cryoelectronics; electromagnetic metrology; X-ray detectors; voltage standards; Josephson junctions; superconductivity; magnetics; magnetic recording; magnetic imaging

INTRODUCTION

The Electromagnetic Technology Division was formed during the reorganization of the National Bureau of Standards (now the National Institute of Standards and Technology) in April 1978 by combining parts of the former Electromagnetics and Cryogenics Divisions. It developed measurement methods and standards and provided metrological support for laser systems, optical communication equipment, cryoelectronics, magnetics, superconductors, and other unusual electrical engineering materials. Therefore, this bibliography covers the period beginning some time before the reorganization and includes at least the more recent origins of the present work of the division. The editor has attempted to include all work published by staff members of the division, while they were employees of NIST, in the period from January 1970 through publication of this report. In 1994, the Electromagnetics Technology Division was divided into two divisions: the Electromagnetic Technology Division, which includes projects in the cryoelectronics metrology and superconductor and magnetic measurement areas and the Optoelectronics Division, which includes the projects in the former optoelectronics group.

A companion bibliography, NISTIR 5052, lists the publications of the Optoelectronics Division. Another source that may be useful to the reader who is interested in activities at NIST connected with electromagnetic metrology is NISTIR 5050 which lists the publications of the Electromagnetic Fields Division. Its topics include metrology for antennas, satellite communications equipment, microwaves, electromagnetic waveforms, and electromagnetic fields and interference. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the Proceedings of the IEEE (vol. 55, June 1967). Advances in the following decades were described in two other special issues of the same journal (vol. 66, April 1978, and vol. 74, January 1986).

A Note on Abbreviations

NOTE: On August 23, 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST); therefore, documents with either prefix are considered NIST publications.

Most readers are familiar with the commonly used abbreviations for the names of the professional journals that appear in this bibliography. Some publication series are peculiar to NIST and may call for explanation. They are:

NIST IR - NIST Interagency/Internal Report	NBS IR - NBS Interagency/Internal Report
NIST TN - NIST Technical Note	NBS TN - NBS Technical Note
NIST SP - NIST Special Publication	NBS SP - NBS Special Publication
NIST HB - NIST Handbook	NBS HB - NBS Handbook
NIST JRES - NIST Journal of Research	NBS JRES - NBS Journal of Research
NIST MN - NIST Monograph	NBS MN - NBS Monograph

Purchase Procedures and Document Availability

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Reprints of papers published in non-NIST media may be available in limited quantities from the authors.

Acknowledgments

A large part of the labor of preparing a bibliography is spent collecting and arranging the material; Lisa Eldrige and Mary E. DeWeese assisted with these chores. The main sources of material were the NIST Boulder Editorial Review Board database, the National Technical Information Service, and information supplied by individual authors.

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