NBSIR 86-3048

METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NBS PUBLICATIONS

Edited by
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National Bureau of Standards
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Boulder, Colorado 80303

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CONTENTS

METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NBS PUBLICATIONS

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This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NBS in the period from January 1970 through December 1985. A few earlier references that are directly related to the present work of the Division are included.

Key words: cryoelectronics; electromagnetic metrology; lasers; optical fibers; superconducting materials

INTRODUCTION

The Electromagnetic Technology Division was formed during the reorganization of NBS in April 1978 by combining parts of the former Electromagnetics and Cryogenics Divisions. It develops measurement methods and standards and provides metrological support for: laser systems, optical communication equipment, cryoelectronics, superconductors, and other unusual electrical engineering materials. For the individual staff members of the division, the reorganization brought a realignment of long-term goals but little immediate discontinuity in their work. It therefore makes good sense that this bibliography should cover a period beginning some time before the reorganization, so as to include at least the more recent origins of the present work of the division. The editors have attempted to include all work published by the present staff members of the division, while they were employees of NBS, in the period from January 1970 to December 1985. There are a few exceptions, where work that is totally unrelated to the present program has been excluded or where work by authors now in other parts of NBS has been included because of its special significance. A few papers on various topics published before 1970 have also been included because of their direct relationship to the present program.

There are several other sources that may be useful to the reader who is interested in activities at NBS connected with electromagnetic metrology. A companion bibliography to this one lists the publications of the Electromagnetic Fields Division: NBSIR 85-3040. Its topics include metrology for antennas, satellite communications equipment, microwave metrology, electromagnetic waveform metrology, electromagnetic interference, and hazard. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the IEEE Proceedings (vol. 55; June 1967). Advances in the following decade were described in two other special issues of the same journal (vol. 66, April 1978; and vol. 74, January 1986).

A Note on Abbreviations

Most readers will be familiar with the commonly used abbreviations for the names of the various professional journals that appear in this bibliography. There are also some publication series that are peculiar to NBS and may call for explanation. They are:

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

Purchase Procedures and Document Availability

NBS Technical Notes, Special Publications, Handbooks, Journals of Research, and Monographs may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Orders must be accompanied by postal money order, express money order, or check made out to the Superintendent of Documents.

NBS Interagency/Internal Reports (NBSIRs) may be purchased from the National Technical Information Service, Springfield, VA 22161. Orders must be accompanied by postal money order, express money order, or check made out to the NTIS.

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

Acknowledgments

A large part of the labor of preparing a bibliography is spent on collecting and arranging the material. We thank Frances Brown, Jessie Page, and Sheila Aaker for their assistance with these chores. The prime source of material was the NTIS file. This was supplemented with material supplied by the individual authors.

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