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# **METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS**

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Edited by  
Mary E. DeWeese

National Institute of Standards and Technology  
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Boulder, Colorado 80303-3328

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# **METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS**

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NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, Raymond G. Kammer, Acting Director



## CONTENTS

|   | Page |
|---|------|
| INTRODUCTION .....                                  | 1    |
| A Note on Abbreviations .....                       | 2    |
| Purchase Procedures and Document Availability ..... | 2    |
| Acknowledgments .....                               | 2    |
| OPTICAL ELECTRONIC METROLOGY .....                  | 3    |
| CRYOELECTRONIC METROLOGY .....                      | 18   |
| SUPERCONDUCTOR AND MAGNETIC MEASUREMENT .....       | 32   |
| AUTHOR INDEX .....                                  | 49   |



# METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS

Mary E. DeWeese, Editor

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.

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

## INTRODUCTION

R. A. Kamper

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 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 NIST, in the period from January 1970 through publication of this report. 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 NIST 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.

Several other sources may be useful to the reader who is interested in activities at NIST connected with electromagnetic metrology. A companion bibliography to this one lists the publications of the Electromagnetic Fields Division: NISTIR 89-3920. 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 Proceedings of IEEE (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

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:

|   |   |
|---|---|
| NISTIR - NIST Interagency/Internal Report | NBSIR - 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

NIST (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.

NIST (NBS) Interagency/Internal Reports (NISTIRs, 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 NTIS.

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 on collecting and arranging the material. We thank Sheila Aaker, Frances Brown, Kit Kline, and Jessie Page for their assistance 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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Ekin, J.W.; Clem, J.R.  
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Fickett, F.R.; Sullivan, D.B.  
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Fickett, F.R.; Sparks, L.L.  
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Sparks, L.L.; Fickett, F.R.  
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Reed, R.P.; Schramm, R.; Clark, A.F.  
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Fickett, F.R.  
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Clark, A.F.; Tryon, P.V.  
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Fickett, F.R.  
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- Combination of a Power Transmission Line and an Active Track for a Magnetically Suspended, High Speed Train;  
Clark, A.F.  
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Fickett, F.R.  
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Fickett, F.R.  
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Characterization of High Purity Metals by the Eddy Current Decay Method;

Clark, A.F.; Deason, V.A.; Powell, R.L.

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Hust, J.G.; Clark, A.F.

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Fickett, F.R.

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Clark, A.F.; Childs, G.E.; Wallace, G.H.

Cryogenics 10: 295-305; Aug 70.

## INDEX OF AUTHORS

|                      |                   |                  |                   |
|----------------------|-------------------|------------------|-------------------|
| Adair, R.T.          | 26-29             | Edrich, J.       | 25-27,29          |
| Alvarez, R.          | 7                 | Ekin, J.W.       | 18,32-46          |
| Andrews, J.R.        | 13,25             | Ellington, M.B.  | 37                |
| Angerhofer, P.E.     | 46                | Engelsrath, A.   | 5,8               |
| Arp, V.D.            | 43,45,47          | Etzel, S.M.      | 5,6,8             |
| Arvidson, J.M.       | 38,39             | Evenson, K.M.    | 16,30,31          |
| Ashley, J.R.         | 30                |                  |                   |
| Aust, J.A.           | 3                 |                  |                   |
|                      |                   | Fast, R.W.       | 37                |
| Baines, J.           | 3                 | Fickett, F.R.    | 19,20,28,33-48    |
| Baruch, J.C.         | 36                | Finnemore, D.K.  | 38                |
| Beall, J.A.          | 18-21,32,33       | Flandermeyer, B. | 34                |
| Beasley, M.R.        | 38                | Flynn, T.M.      | 26,47             |
| Beers, Y.            | 15                | Fogle, W.E.      | 19                |
| Bell, R.             | 38                | Folsom, R.M.     | 32,33             |
| Bender, B.K.         | 26                | Fowlkes, C.W.    | 46                |
| Bennett, H.E.        | 3,4               | Franzen, D.L.    | 3-16              |
| Benson, R.           | 36                | Franzen, D.L.    | 8,9,20,23,25-30   |
| Bergren, N.          | 33                | Frederick, N.V.  | 41-43             |
| Birmingham, B.W.     | 46                | Fujii, G.        |                   |
| Blankenship, B.A.    | 32,33             |                  |                   |
| Bloom, L.R.          | 11,13             | Gallawa, R.L.    | 3,6,7,9-11,13     |
| Braginski, A.I.      | 34,42             | Gardner, J.B.    | 37                |
| Bray, S.L.           | 32,33,35          | Garrett, H.J.    | 41                |
| Bussey, H.E.         | 35                | Gavaler, J.R.    | 39,40             |
|                      |                   | Gayley, R.I.     | 25                |
| Campbell, W.H.       | 24,27             | Geballe, T.H.    | 37                |
| Capobianco, T.E.     | 19,32-36          | Geist, J.        | 15                |
| Capone, D.W.         | 34                | Genens, L.       | 42                |
| Carelli, P.          | 23                | Giarratano, P.J. | 23                |
| Case, W.E.           | 7,10,13,15,16     | Ginsberg, D.M.   | 27                |
| Cernosek, R.W.       | 7                 | Glaser, I.       | 8                 |
| Chamberlain, G.E.    | 9-11,13,14        | Go, D.           | 18,19             |
| Chandler, G.I.       | 7                 | Goeke, K.        | 18                |
| Chen, D.-X.          | 33                | Gold, R.E.       | 43                |
| Chen, H.S.           | 35,36,40          | Goldfarb, R.B.   | 32-36,38-41       |
| Cherin, A.H.         | 3                 | Goldgraben, R.   | 7                 |
| Chieh, K.            | 18                | Goodrich, L.F.   | 32-42             |
| Childs, G.E.         | 48                | Goree, W.S.      | 28-30             |
| Churoux, P.          | 7                 | Gould, D.        | 32                |
| Cirillo, M.          | 19                | Gray, E.M.       | 11,13             |
| Ciszek, T.           | 33                | Greggi, J.       | 39,40             |
| Clark, A.F.          | 20,22,32-48       | Gregory, E.      | 32                |
| Clem, J.R.           | 46                | Gruzensky, P.M.  | 14-16             |
| Cochran, J.F.        | 35                | Gschneider, K.A. | 33                |
| Cohen, D.            | 31                | Guenther, A.H.   | 3,4               |
| Collins, G.J.        | 14,15             |                  |                   |
| Colwell, J.H.        | 19                | Hackert, M.      | 3                 |
| Conrad, D.           | 5                 | Hale, P.D.       | 4,5               |
| Cook, A.R.           | 14-16             | Halford, D.      | 16                |
| Costabile, G.        | 22                | Hamilton, C.A.   | 14,15,18-27,29,30 |
| Craig, R.M.          | 3                 | Hanson, A.G.     | 11,13             |
| Crete, D.G.          | 19,20             | Harris, R.E.     | 19,20,22-27       |
| Cromar, M.W.         | 18-21,23,36-38    | Hartwig, G.      | 42                |
| Cupp, J.D.           | 27-31             | Havemann, R.H.   | 26                |
|                      |                   | Haynes, W.M.     | 45                |
| Dalder, E.N.C.       | 42,43             | Hazzenzahl, W.V. | 39                |
| Damento, M.A.        | 33                | Head, E.         | 3                 |
| Daney, D.E.          | 21                | Heinrich, B.     | 35                |
| Danielson, B.L.      | 3-6,8,10-16,27-29 | Heinz, W.        | 37                |
| Day, G.W.            | 3-16              | Hellman, F.      | 37                |
| Deason, V.A.         | 45-48             | Hickernell, R.K. | 3,4               |
| Deb, S.K.            | 33                | Hinken, J.H.     | 20,21             |
| Deeter, M.           | 5                 | Hirabayashi, H.  | 33                |
| DeLima, O.F.         | 34                | Hirooka, T.      | 33                |
| DeWeese, M.E.        | 4,6,8             | Ho, J.C.         | 41,43,44          |
| DeWeese-Bishop, M.E. | 5                 | Hobbs, R.D.      | 23                |
| DiIorio, M.S.        | 18                | Hoblitt, R.      | 42                |
| Dimmock, J.O.        | 17                | Hoer, C.A.       | 28,29             |
| Dinger, R.J.         | 28                | Holthuis, J.T.   | 37,39             |
| Dragomirecky, M.     | 35                | Hong, M.         | 34,37-39          |
| Drapela, T.J.        | 3,4               | Howard, R.E.     | 18                |
| Dube, W.P.           | 32,35,36          | Hu, Q.           | 18                |
| Duffield, C.         | 36                | Hull, G.W., Jr.  | 39                |
| Dulcie, L.L.         | 34                | Hust, J.G.       | 45,47,48          |
| Dynes, R.C.          | 27                |                  |                   |
| Dziuba, R.F.         | 28                | Itoh, K.         | 32                |
|                      |                   | Ives, J.T.       | 23                |
| Edelsack, E.A.       | 31                |                  |                   |
|                      |                   | Janocko, M.A.    | 34                |
|                      |                   | Jarvis, S.       | 29                |

|                      |                  |                     |                   |
|----------------------|------------------|---------------------|-------------------|
| Jennings, D.A.       | 16               | Oldham, N.M.        | 18                |
| Johnson, E.G., Jr.   | 5-10,12-14,27-30 | Olien, N.A.         | 28-30             |
| Johnson, W.          | 21               | Ono, R.H.           | 18-21,32,33       |
| Johnson, W.L.        | 14               | Oyamada, A.         | 33                |
| Jones, H.            | 32               |                     |                   |
| Jones, K.            | 38               | Pankove, J.I.       | 33                |
|                      |                  | Panson, A.J.        | 32-34             |
| Kamper, R.A.         | 6,9,26-31,34     | Papatheofanis, B.   | 3,4               |
| Kanada, T.           | 6                | Pasztor, G.         | 38                |
| Kaplan, S.B.         | 24,41            | Patton, C.E.        | 40,41             |
| Kasen, M.B.          | 43,44            | Persson, K.B.       | 14,15             |
| Katayama-Yoshida, H. | 33               | Petersen, F.R.      | 16,27-29          |
| Katzir, Y.           | 8                | Peterson, R.L.      | 15,18,19,22-27,31 |
| Kautz, R.L.          | 18-26            | Phelan, R.J., Jr.   | 3-9,12,14,15-17   |
| Kazmerski, L.L.      | 33               | Pittman, E.S.       | 35-38,40          |
| Kim, E.              | 6,9-12           | Powell, R.L.        | 41,43,44,46-48    |
| Kim, S.H.            | 42               | Pyatt, K.W.         | 14                |
| King, G.B.           | 43               |                     |                   |
| Klein, G.P.          | 15               | Radebaugh, R.       | 26,27,29,30,41-43 |
| Kline, K.E.          | 5,6,8            | Raine, K.           | 3                 |
| Klipping, G.         | 37               | Raisanen, A.V.      | 19,20             |
| Kocpol, W.           | 18               | Ranney, M.A.        | 41,42             |
| Kose, V.E.           | 31               | Rao, K.V.           | 33,35,36,40       |
| Kreilick, T.S.       | 32               | Rasmussen, A.L.     | 6,7,10,13,16      |
| Kropschot, R.H.      | 48               | Read, D.T.          | 43                |
| Ku, H.C.             | 35               | Reed, R.P.          | 38,39,41-47       |
| Kwo, J.              | 34               | Reite, M.           | 22,25,27          |
|                      |                  | Richards, P.L.      | 18-20,24,25       |
| Larbalestier, D.C.   | 38               | Ried, D.L.          | 32                |
| Larson, D.R.         | 3-9,11,12        | Risley, A.S.        | 27-30             |
| Larson, E.           | 42               | Rizzoto, C.         | 37                |
| Larson, L.E.         | 4                | Rodhe, P.M.         | 8,9               |
| Larson, T.           | 33               | Rose, A.H.          | 3,4               |
| Lee, K.S.            | 3,4              | Rosenbaum, J.       | 42                |
| Lehman, J.           | 4                | Rosenblum, S.       | 44                |
| Li, X.               | 3                | Russell, T.W.       | 16                |
| Li, Y.K.             | 32,33            |                     |                   |
| Liou, S.H.           | 34               | Sanders, A.A.       | 6,7,9,10,13-15    |
| Lloyd, F.L.          | 18-25            | Sasaki, T.          | 33                |
| Lonzarich, G.        | 35               | Sauvageau, J.E.     | 18                |
|                      |                  | Schmidt, L.B.       | 14,15             |
| Madden, M.           | 32               | Schoon, R.H.        | 39                |
| Maher, D.M.          | 37               | Schramm, R.E.       | 42,43,47          |
| Mahler, R.J.         | 16               | Scott, J.F.         | 45                |
| Maisonneuve, J.M.    | 7,9              | Scott, T.R.         | 3,5               |
| Mankiewich, P.M.     | 18               | Sekine, H.          | 40                |
| Masarie, K.A.        | 18               | Shao, Y.            | 6,7               |
| Mascarenhas, A.J.    | 33               | Shelton, R.N.       | 35                |
| McCarthy, S.M.       | 23               | Shen, T.M.          | 24,25             |
| McDonald, D.G.       | 18-22,24,26-31   | Siegwarth, J.D.     | 26,27,29,30       |
| McFadden, J.D.O.     | 7                | Silver, A.H.        | 27,31             |
| McFarlane, J.C.      | 20               | Simmonds, M.B.      | 28-30             |
| McGrath, W.R.        | 19,20            | Simmons, W.R.       | 16                |
| McHenry, H.I.        | 41,43,44         | Simpson, P.A.       | 3,6,8,9,12,14     |
| McNeil, J.R.         | 14,15            | Smith, R.J.         | 3                 |
| Mears, C.A.          | 18               | Smith, R.L.         | 14-16             |
| Mikesell, R.P.       | 44               | Sorenson, C.M.      | 45                |
| Milam, D.            | 3,4              | Soulen, R.J., Jr.   | 19,23             |
| Milner, T.E.         | 5                | Sparks, L.L.        | 44,46             |
| Minervini, J.V.      | 35,37,38         | Srivastava, R.      | 8,9               |
| Mockler, R.C.        | 45               | Stanley, W.D.       | 28                |
| Monaco, R.           | 18,21            | Stauffer, T.C.      | 32                |
| Moore, D.F.          | 22               | Steiner, R.L.       | 20                |
| Moreland, J.         | 32-37            | Steyert, W.A.       | 44                |
| Moulder, J.C.        | 35               | Stubenrauch, C.F.   | 14                |
| Muhlfelder, B.       | 20,21            | Suenaga, M.         | 41                |
| Mullen, L.O.         | 15,16,31         | Sullivan, D.B.      | 21-31,46          |
| Myrtle, K.           | 35               | Superczynski, M.J.  | 38,40,42          |
|                      |                  | Suzuki, T.          | 33                |
| Nagano, H.           | 37               | Swartzlander, A.B.  | 33                |
| Nelson, A.J.         | 32,33            |                     |                   |
| Newnam, B.E.         | 3,4              | Tachikawa, K.       | 32,39,40          |
| Newton, R.N.         | 46               | Takahashi, T.       | 33                |
| Niemeyer, J.         | 20,21            | Tang, D.            | 4                 |
| Nikolo, M.           | 32               | Timmerhaus, K.D.    | 43,45             |
| Nisenoff, M.         | 28,29            | Tinkham, M.         | 38                |
| Nogues, J.           | 33               | Tobler, R.L.        | 43                |
|                      |                  | Trapani, R.J.       | 45                |
| O'Sullivan, W.J.     | 45               | Tryon, P.V.         | 47                |
| Oates, C.W.          | 3,5              |                     |                   |
| Oberly, C.E.         | 41               | Van Reuth, E.C.     | 45,46             |
| Ochiai, A.           | 33               | Van Vechten, D.     | 23                |
| Okabe, Y.            | 33               | VanZeghbroeck, B.J. | 22                |



|                 |          |                   |          |
|-----------------|----------|-------------------|----------|
| Vecchia, D.F.   | 32,38    | Whitesel, H.K.    | 3,4      |
| Vesser, L.R.    | 3,4,7    | Whittenberg, C.D. | 3-5      |
| Vorreiter, J.W. | 25       | Wilmer, R.        | 39       |
|                 |          | Withers, R.S.     | 18       |
| Wada, H.        | 32       | Wolf, P.          | 22       |
| Walker, M.S.;   | 41       | Wolf, S.A.        | 28,29    |
| Wallace, G.H.   | 48       |                   |          |
| Walters, C.R.   | 32       | Xizhi, L.         | 18       |
| Waltman, D.J.   | 38,40    |                   |          |
| Wang, S.T.      | 42       | Yang, S.          | 7        |
| Weimer, C.      | 7        | Young, M.         | 3-13     |
| Wells, J.S.     | 16,29-31 | Yu, K.            | 33       |
| Weppner, M.B.   | 5        |                   |          |
| Werner, P.E.    | 12       | Zeitlin, B.A.     | 41       |
| West, E.D.      | 15,16    | Zimmerman, J.E.   | 19-31    |
| Weston, W.F.    | 45       | Zimmerman, J.T.   | 22,25,27 |

|   |   |  |   |
|---|---|--|---|
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