

Handwritten notes:
1/28/86
1/28/86
1/28/86
1/28/86
1/28/86
1/28/86

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS

SUPPLEMENT TO
PUBLICATIONS OF CENTER FOR
MANUFACTURING ENGINEERING, 1978 - 1983
(NBSIR 84-2840)
COVERING THE PERIOD
JANUARY, 1984 - MARCH, 1986

This supplement amends and augments the Publications of Center for Manufacturing Engineering 1978-1983, NBSIR 84-2840, March 1984. Where updated publication data is available for a paper included in Publications, the complete revised entry is included here; such entries are marked (*). The index includes all papers from both Publications and this supplement.

March, 1986

March, 1986

SUPPLEMENT TO

PUBLICATIONS OF CME (1978-1983), NBSIR 84-2840

Albus, James S.

- AL21 Albus, J. S., "Robotics," Proc. of NATO Advanced Study Institute on Robotics and AI," Sept. 1983.
- AL22 Albus, J. S., "A Structure for Generation and Control of Intelligent Behavior," IEEE International Conference on Computer Design/VLSI in Computers ICCD; Rye, NY; October, 1983.
- AL23 Albus, J., Barbera, A., Fitzgerald, M., Kent, E., McLean, C., McCain, H., Bloom, H., Haynes, L., Furlani, C., Barkmeyer, E., Mitchell, M., Scott, H., Blomquist, D., Kilmer, R., "A Control System for an Automated Manufacturing Research Facility," Society of Manufacturing Engineering, Robots 8; Detroit, MI; June 4-7, 1984.
- AL24 Albus, J. S., "Research Issues in Robotics," presented at the Society for the Advancement of Material and Process Engineering Conference (SAMPE) in Albuquerque, New Mexico, October 9, 1984.
- AL25 Albus, J. S., "Robotics -- Past, Present, and Future," Proc. AGARD/NATO Consultant Mission on Robotics & Artificial Intelligence, September 26 - October 4, 1985.
- AL26 Albus, J. S., McLean, C. R., Barbera, A. J, Fitzgerald, M. L., "Hierarchical Control for Robots and Teleoperators," IEEE Proc. on Intelligent Control (to be published).
- AL27 Albus, J. S., "A Trip Report: Japanese Progress in Robotics for Construction," Robotics Magazine, Spring, 1986.

-- ALSO SEE BARB3,4,5; FIT2; SHN7,10,11,13

Ambler, A. P.

-- SEE POP1

Bagley, P. P.

-- SEE BLE22

Barash, M. M.

-- SEE DON1,2

Barbera, Anthony J.

BARB3 Barbera, A. J., Fitzgerald, M. L., Albus, J. S., Haynes, L. S., McCain, H. G., "An Application Example of the NBS Robot Control System," International Journal of Robotics and Computer Integrated Manufacturing, March, 1984.

BARB4 Barbera, A. J., Albus, J. S., Fitzgerald, M. L., Haynes, L. S., "RCS: The NBS Real-Time Control System," Robots 8 Conference and Exposition; Detroit, MI., June, 1984.

BARB5 Barbera, A. J., Fitzgerald, M. L., Albus, J. S., Haynes, L. S., "A Language Independent Structure for Implementing Real-Time Control Systems," International Workshop on High-Level Computer Architecture; California, May, 1984.

-- ALSO SEE AL22; BLO05; FIT1,2

Barkmeyer, E. J.

BA1 Barkmeyer, E., Mitchell, M., Mikkilineni, K. P., Su, S. Y. W., Lam, H., "An Architecture for Distributed Data Management in Computer Integrated Manufacturing," NBSIR 86-3312, April, 1986.

-- ALSO SEE AL22; MITC1

Barsky, M.

BAR1 Barsky, M., Hsu, N. N., "A Simple and Effective AE Source Location System," Technical Note Section in Materials Evaluation, accepted for publication in the Journal of the American Society for Nondestructive Testing.

Bartel, T. W.

BART4* Bartel, T. W., Yaniv, S. L., Flynn, D. R., "Use of "Corner Microphones" for Sound Power Measurements in a Reverberation Chamber," J. Acoust. Soc. Am. 74(6):1794-1800, December, 1983.

-- ALSO SEE BURN9

Bell, M. I.

-- SEE LET4,5

Bellos, I.

-- SEE POPl

Bielle, J.

BIE1 Bielle, J., Vorburger, T. V., Roy, V. B. "Functional Needs, Machining Conditions, and Economics of Surface Finishing," submitted to Precision Engineering.

Blessing, G. V.

BLE20* Blessing, G. V., Hsu, N. N., Proctor, T. M., "Ultrasonic Shear Wave Measurement of Known Residual Stress in Aluminum," Proceedings of the Symposium on Nondestructive Methods for Material Property Determination, Hershey, Pennsylvania, April 6-8, 1983.

BLE22 Blessing, G. V., Bagley, P. P., James, J. E., "The Effect of Surface Roughness on Ultrasonic Echo Amplitude in Steel," Proceedings of the 1983 IEEE Sonics/Ultrasonics Symposium, 2; 83 CH1947-1, ISSN:0090-5607; 1983. 923-927.

-- ALSO SEE JONE2,3

Blomquist, Don

BLOM2 Blomquist, D. S., "Sensors for Batch Manufacturing of Metal Parts," Proceedings of American Society for Metals Conference, May 7-9, 1985.

-- ALSO SEE AL22; DON2; YE10

Bloom, Howard

BLOO4* Bloom, Howard and Wenger, Carl, "An Automated Documentation System for a Large-Scale Manufacturing Engineering Research Project," presented at the ACM SIGDOC 2nd International Conference on Systems Documentation in Seattle, WA, April 29-30, 1983.

BLOO5 Bloom, H. M., Furlani, C. M., "Emulation as a Design Tool in Real-Time Control Systems," Proceedings of IASTED Conference on Simulation and Modelling, San Francisco, CA, June, 1984.

BLOO6 Bloom, H. M., Furlani, C. M., McLean, C. R., "Emulation as a Tool in the Design of Factory Automation Systems," IEEE Workshop on Languages for Automation, New Orleans, LA, November 1-3, 1984.

BLOO7 Bloom, H. M., Furlani, C. M., Barbera, A. J., "Emulation as a Design Tool in the Development of Real-Time Control Systems," Proceedings of Winter Simulation Conference, Dallas, TX, November 28-30, 1984.

-- ALSO SEE AL22; FUR1

Borchardt, B.

-- SEE ZH1

Boudreaux, J. C.

BOU1 Boudreaux, J. C., "Defining General Structures," Notre Dame Journal of Formal Logic, Volume 20 (1979), pages 465-488.

BOU2 Boudreaux, J. C., "Frames versus Minimally Restricted Structures," Notre Dame Journal of Formal Logic, Volume 21 (1981), pages 251-262.

BOU3 Boudreaux, J. C., "Elements of a Constructive Theory of Measurement," Proceedings of the IMEKO Workshop on Fundamental Logical Concepts of Measurement, Torino, Italy, September, 1983.

BOU4 Boudreaux, J. C., "ANS Pascal ... And Beyond," Proceedings of the IEEE Educational Computer Conference, EDCOMCON '83, San Jose, CA, October, 1983.

BOU5* Boudreaux, J. C., "Problem Solving and the Evolution of Programming Languages," The Role of Languages in Problem Solving - I, Edited Proceedings of the Symposium, The Johns Hopkins University Applied Physics Laboratory, North-Holland, Amsterdam, pp. 103-126, 1985.

BOU6* Boudreaux J. C., "Summary Assessment of the Symposium," The Role of Languages in Problem Solving - I, Edited Proceedings of the Symposium, The Johns Hopkins University Applied Physics Laboratory, North Holland, Amsterdam, pp. 341-350, 1985.

Breckenridge, F. R.

-- SEE FIC5; PR10,11

Bunch, W. R.

BU1 Bunch, W. R. and Vranish, J. M., "'Split Rail' Parallel Gripper," Proceedings Robots 9 SME Conference, February, 1985.

Burnett, E. D.

BURN9 Burnett, E. D., Evans, D. J., Bartell, T. W., "NBS Hearing Aid Test Procedures and Test Data," Handbook of Hearing Aid Measurements, Veterans Administration, Washington, DC, July, 1985.

Cadoff, M. A.

CAD1 Cadoff, M. A., "Publications of the Mechanical Production Metrology Division in 1980-1982," NBSIR 83-2699, May, 1983. 17 p.

Carasso, A.

-- SEE EI19

Carino, N. J.

CARI1 Carino, N. J., Sansalone, M., Hsu, N., "A Point Source-point Receiver, Pulse-echo Technique for Flaw Detection in Concrete," accepted for publication in the Journal of American Concrete Institute.

Charlton, T.

-- SEE SW14; ZH1

Chen, R.

CHE1 Chen, R., Dagalakis, N. G., Yang, J. C. S., Wang, S. H., Wang, C. B., "Kinematic Parameter Identification," Proceedings of the 3rd Canadian CAD/CAM and Robotics Conference, June 1984, Toronto, Canada.

-- ALSO SEE LU01

Church, E. L.

CHU2 Church, E. L., Vorburger, T. V., Wyant, J. C., "Direct Comparison of Mechanical and Optical Measurements of the Finish of Precision Machined Optical Surfaces," SPIE Proceedings and Optical Engineering, January, 1985.

Cooper, J.

-- SEE MARX14

Dagalakis, Nicholas G.

DA9 Dagalakis, N. G., Myers, D. R., "Adjustment of Robot Joint Gears Using Encoder Velocity & Position Information," accepted for publication in Journal of Robotic Systems.

- DA10 Dagalakis, N. G., Myers, D. R., "Adjustment of Robot Joint Gear Backlash Using the Robot Joint Test Excitation Technique," accepted for publication in the International Journal of Robotics Research.
- DA11 Dagalakis, N. G. and Myers, D. R., "A Technique for the Detection of Robot Joint Gear Tightness," Trans. of ASME; Journal of Dynamic Systems, Measurement, and Control, March, 1985.
- DA12 Dagalakis, N. G. and Myers, D. R., "Use of Correlation Analysis for the Evaluation and Adjustment of Robot Gear Performance," Workshop on Robot Standards Conference, June, 1985.
- DA13 Dagalakis, N. G. and Myers, D. R., "Further Application of the Robot Joint Test Excitation Technique for the Adjustment of Robot Gears," International Journal of Robotics Research (submitted for publication), September, 1985.

-- ALSO SEE CHE1; LU01; MY9

Dainis, A.

- DA11 Dainis, A. and Juberts, M., "Accurate Remote Measurement of Robot Trajectory Motion," 1985 International Conference on Robotics and Automation sponsored by The Institute of Electrical and Electronics Engineers, Inc., IEEE Computer Society, January, 1985.

Doiron, Theodore

- DOI1 Doiron, Theodore, "The Calibration of Gridplates at the National Bureau of Standards," Proceedings of the International Symposium on Metrology for Quality Control in Production.
- DOI2 Doiron, T., "Computer Vision in Dimensional Metrology at NBS," Proceedings of the Measurement Science Conference, Irvine, CA, January 23-24, 1986.

Donmez, A.

- DON1 Donmez, A., Lee, K., Liu, C. R., Barash, M. M., "A Real-Time Error Compensation System for A CNC Turning Center", ASME Journal of Engineering for Industry, March, 1985.
- DON2 Donmez, A., Blomquist D. S., Hocken, R. J., Liu, C. R., and Barash, M. M., "A General Methodology for Machine Tool Accuracy Enhancement by Error Compensation," Journal of Precision Engineering, January, 1986.

-- ALSO SEE SL2

Dornfeld, D. A.

-- SEE YE10

Eitzen, D. G.

EI19 Eitzen, D., Hsu, N., Carasso, A., Proctor, T., "Deconvolution by Design - An Approach to the Inverse Problem of Ultrasonic Testing," Proceedings of Review of Progress in Quantitative NDE, Vol. 4A, Plenum Publishing Corp., 1985.

-- ALSO SEE FIC5; HS13; PR10

Estler, W. T.

EST1 Estler, W. Tyler, "High Accuracy Displacement Interferometry in Air," Applied Optics, September, 1984.

EST2 Estler, W. Tyler, "The Calibration and Use of Optical Straightedges in the Metrology of Precision Machines," Optical Engineering, April 1985.

EST3 Estler, W. T. and Magrab, E. B., "Validation Metrology of the Large Optics Diamond Turning Machine," NBSIR 85-3182(R), May, 1985.

Evans, D. J.

-- SEE BURN9

Evans, J. N.

EV1 Evans, J. N. (editor), "Measurement Technology for Automation in Construction and Large Scale Assembly: Proceedings of a Workshop," NBSIR 85-3310, August, 1985.

Evans, L.

EVA1 Evans, L. and Yee, K. W., "Alternatives for Sensing Tool Wear in Peripheral and Slot End-Milling," Proceedings of "Sensors '85", Sensors for Untended Manufacturing Conference sponsored by Society of Mfg. Engineers, Dearborn, MI, November, 1985.

EVA2 Evans, L., "Using Surface Roughness as a Wear Criterion in High-Speed Steel End-Milling," 14th North American Manufacturing Research Conference, University of Minnesota, MN, May 28-30, 1986.

EVA3 Evans, L., "Monitoring of Wear of High-Speed End Mills -- Some Practical Considerations," Machine Monitoring Sensors Seminar, Chicago, IL, April, 1986 (published by Society of Manufacturing Engineers, Dearborn, MI).

-- ALSO SEE YE10

Fainberg, A.

FA1* Fainberg, A., Gordon, D., Dermendjiev, E., Terrey, D., Mitchell, R. A., "A Portable Load-Cell Based System for Weighing UF6 Cylinders," Proceedings of the International Symposium on Recent Advances in Nuclear Materials Safeguards; November 8-12, 1982; Vienna, Austria. Document No. JAEA-SM-260/97, BNL-31927, Vienna, Austria, International Atomic Energy Agency, 1983.

FA3 Fainberg, A., Mitchell, R., "Portable Load-Cell Based Systems for Weighing UF6 Cylinders," Proceedings of American Nuclear Society/Institute, Nuclear Materials Management Conference on Safeguards Technology: the Processing Safeguards Interface, November 28 - December 2, 1983, Hilton Head Island, South California, Also, Trans. Am. Nuclear Soc. 45 (Suppl. 1):6;1983.

Fick, S. E.

FIC5 Fick, S. E., Breckenridge, F. R., Tschiegg, C. E., Eitzen, D. G., "An Ultrasonic Absolute Power Transfer Standard," NBS, Journal of Research, January, 1984.

FIC6 Fick, S. E., Hsu, N. N., Proctor, T. M., "The Design and Calibration of a Novel Piezoelectric Point Contact High Fidelity Ultrasonic Transducer," Proceedings of 11th World Conference on Nondestructive Testing, Las Vegas, Nevada, November 3-8, 1985.

Fitzgerald, M. L.

FIT1 Fitzgerald, M. L. and Barbera, A. J., "A Low-Level Control Interface for Robot Manipulators", Proceedings of Robots 9 Conference, June, 1985.

FIT2 Fitzgerald, M. L., Barbera, A. J., Albus, J. S., "Real-Time Control Systems for Robots," Robotics Today, June, 1985.

-- ALSO SEE AL22; BARB3,4,5

Fletcher, Robert H.

-- SEE MUL3

Furlani, C. M.

- FUR1 Furlani, C. M., Kent, E. W., Bloom, H. M., McLean, C. R., "The Automated Manufacturing Research Facility of the National Bureau of Standards," Proc. of Summer Computer Simulation Conference, Vancouver, B. C., Canada, July 11-13, 1983.
- FUR2 Furlani, C. (Editor), "Hierarchical Control System Emulation Programmer's Manual," NBSIR 85-3157, April, 1985.
- FUR3 Furlani, C. (Editor), "Hierarchical Control System Emulation User's Manual," NBSIR 85-3156, April, 1985.

-- ALSO SEE AL22; BL005,6,7

Giauque, C. H.

-- SEE G19, VOR9

Gilsinn, D. E.

- GI7 Gilsinn, D. E., Vorburger, T. V., Scire, F. E., Teague, E. C., McLay, M. J., "Surface Texture Characterization by Angular Distributions of Scattered Light," Summer, 1984 Review of Progress in Quantitative NDE Proceedings.
- G18 Gilsinn, D. E., "SOLID - A FORTRAN Program for Displaying Three-Dimensional Surface Topographies," NBSIR 85-3121, March, 1985.
- G19 Gilsinn, D. E., Vorburger, T. V., Teague, E. C., McLay, M. J., Giauque, C., Scire, F. E., "Surface Roughness Metrology by Angular Distribution of Scattered Light," Proceedings of SPIE, Vol. 525 - Measurement and Effects of Surface Defects and Quality of Polish, March, 1985.
- G20* Gilsinn, D. E., "Asymptotic Approximations of Integral Manifolds," SIAM Journal on Applied Math, February, 1986.

-- ALSO SEE TE12; VOR9

Greenspan, L.

- GRE1 Greenspan, L., "Automated Part Insertion Using Only Position Sensing", IEEE Conference on Robotics and Automation, (in review).

-- ALSO SEE SL3

Greenspan, M.

GR1 Greenspan, M., "The NBS Conical Transducer: Analysis",
Journal of the Acoustical Society, (in review).

Haar, R.

-- SEE SHN7,11

Haight, W.

-- SEE LAU3

Haralick, R. M.

-- SEE LUM9,13

Hartley, R.

-- SEE HON2

Hartman, A. W.

HAR3 Hartman, A. W., "Investigations in Array Sizing; Part I:
Accuracy of the Sizing Process," Powder Technol.,
Volume 39, Page 49, 1984.

HAR4 Hartman, A. W., "Investigations in Array Sizing; Part II:
An Experimental Confirmation of the Kubitschek Effects",
Powder Technol. (in press).

HAR5 Hartman, A. W., "The Accuracy of Array Sizing of Monosize
Latex Spheres," Powder Technology (in press).

HAR6 Hartman, A. W., "Investigations in Array Sizing Part III:
Feasibility of Measuring the Diameter Distribution of
Monosize Microspheres by Optical Microscopy," Powder
Technology, November, 1985.

-- ALSO SEE MUL1,2; STE1

Haynes, L. S.

HAY1 Haynes, L. S., "Automated Design and Assembly of
Fixturing," Tooling and Production Magazine, Hueber
Publications, Inc., February, 1986.

HAY2 Haynes, L. S., "Guest Editor's Introduction to the Special
Issue on Robot Standards," Special Issue: International
Journal of Robotics and Computer Integrated Manufacturing,
Spring, 1986.

HAY3 Haynes, L. S., "Real-Time Control," 1986 IEEE International Conference on Robotics and Automation, San Francisco, CA, April 7-10, 1986.

-- ALSO SEE AL22; BARB3,4,5; LAU2; LE3

Hembree, G. G.

-- SEE MUL1,2

Henrici, Gerald

-- SEE KEN8,9

Herman, M.

HER1 Herman, M. and Kanade, T., "Incremental Reconstruction of 3-D Scenes From Multiple, Complex Images," Artificial Intelligence Journal, November, 1985.

HER2 Herman, M., "Fast Path Planning in Unstructured, Dynamic, 3-D Worlds," Proceedings of SPIE Conference on Applications of Artificial Intelligence III, Orlando, FL, April, 1986.

Herriman, James

-- SEE KEN8,9

Hocken, R. J.

-- SEE DON2; LAU1,2,3; ZH1

Hong, T. H.

HON1 Hong, T. H., Shneier, M., Rosenfeld, A., "Border Extraction Using Linked Pyramids," IEEE Trans. SMC 12 5, 660-668, September/October 1982.

HON2 Hong, T. H., SSIENER, M., Hartley, R., Rosenfeld, A., "Using Pyramids to Detect Good Continuation," IEEE Trans. SMC 13 4, 631-635, July/August, 1983.

HON3 Hong, T. H., Shneier, M., "Extracting Compact Objects Using Linked Pyramids," IEEE Trans. PAMI 6 2, 229-237, March, 1984.

HON4 Hong, T. H., Shneier, M., "Describing a Robot's Workspace Using a Sequence of Views From a Moving Camera," Submitted to IEEE Trans. PAMI.

- HON5 Hong, T.H., Schneier M. O., "Describing a Robot's Workspace Using a Sequence of Views from a Moving Camera," IEEE Transactions on Pattern Analysis and Machine Intelligence, March, 1985.
- HON6 Hong, T. H. and Schneier, M., "Incrementally Constructing a Spatial Representation Using A Moving Camera," IEEE Computer Society Conference on Computer Vision and Pattern Recognition, San Francisco, CA, June 9-13, 1985.
- HON7 Hong, T. H. and Shneier, M., "Rotation and Translation of Object Represented by Octrees," International Conference on Pattern Recognition, Paris, France, 1986.

-- ALSO SEE KEN13; SHN20

Hopp, T.

- HOP2 Hopp, T. H., "CAD-Directed Inspection," CIRP Annals, Volume 33/1.

-- ALSO SEE SW14

Hsu, N. N.

- HS12 Hsu, N. N., "Some Thoughts on the ALN System," in Report of the Committee on Physics Review of the Adaptive Learning Network Methodology, Report No. EPRI NP-3216, RP 1570-2, A61-A64, Electric Power Research Institute, Palo Alto, California, October, 1983.
- HS13 Hsu, N. N. and Eitzen, D. G., "Analytical Approach to Acoustic Emission Signal Processing: Problems and Progress," Seventh International Acoustic Emission Symposium, Sendai, Japan, October 23-26, 1984.
- HS14 Hsu, N. N., "Dynamic Green's Functions of An Infinite Plate - A Computer Program", (in review).

-- ALSO SEE BAR1; CAR11; EI19; FIC6; SA4

Hung, Y.

- HU1 Hung, Y., Yeh, P-S., Mansbach, P., "Calibration of a Structured Light Vision System," University of Maryland Center for Automation Research -- Technical Report, May, 1984.

James, J. E.

-- SEE BLE22

Jenkins, L.

-- SEE PET1

Jones, A. T.

JON1 Jones, A. T., McLean, C. R., "A Cell Control for the AMRF," ASME Conf., August 1984.

JON2 Jones, A. T., and McLean, C. R., "A Production Control Module for the AMRF," Proceedings, ASME International Conference on Computers in Mechanical Engineering, Boston, MA, August, 1985.

JON3 Jones, A. T. and McLean, C. R., "A Proposed Hierarchical Control Model for Automated Manufacturing Systems," Journal for Manufacturing Systems, March, 1986.

Jones, M. P.

JONE2 Jones, M. P., Blessing, G. V., Robbins, C. R., "Ultrasonic Elasticity Study of Sintered Ceramics and Their Green States," 1985 Ultrasonics Symposium Proceedings, IEEE Sonics/ Ultrasonics Symposium, published by ASNT, October, 1985.

JONE3 Jones, M. P. and Blessing, G. V., "Real-Time Ultrasonic Nondestructive Evaluation of Green State Ceramic Powders During Compaction," to be published in Nondestructive Testing Communications, England, (in review).

Juberts, M.

JU1 Juberts, Maris, "Repeatability Measurements of a Vision Servoed Manipulator Using An Opto-Electronic Remote 3D Tracking System," IEEE International Conference on Systems, Man and Cybernetics, Tucson, AZ, November, 1985.

-- ALSO SEE KI8; SZ1

Jurgens, P.

-- SEE SL4

Kanade, T.

-- SEE HER1

Keller, J.

-- SEE SCH1

Kent, E.

- KEN5 Kent, E., "A General Overview of the NBS Automated Manufacturing Research Facility," Conference on Proceeding of Robotic and Intelligence and Productivity, Wayne State University, Detroit, Michigan, November 18-19, 1983.
- KEN6 Kent, E., "Hierarchical Control of Robot Vision by Internal Models," Conference of the ACM Computer Science, Philadelphia, Pennsylvania, February 14-16, 1984.
- KEN7 Kent, E. W., Shneier, M., Lumia, R., "Pipelined Image Processing Engine (PIPE)," Journal of Parallel & Distributed Computing, 1984.
- KEN8 Kent, E. W., Shneier, M., Lumia, R., Herriman, J., Luck, R., Henrici, G., "Architecture of the NBS Pipelined Image Processing Engine," Conference on Algorithm-Guide Parallel Architectures for Automatic Target Recognition, Leesburgh, Virginia, 1984.
- KEN9 Kent, E. W., Shneier, M. O., Lumia, R., Herriman, J. M., Luck, R. L., Henrici, G. S., "Design and Function of the NBS Pipelined Image Processing Engine," Proceedings of Vision 8 Applied Machine Vision Conference and Exposition, Detroit, MI, March, 1985.
- KEN10 Kent, E. W., Wheatley, T. E., Nashman, M., "Real-Time Cooperative Interaction Between Structured-Light and Reflectance Ranging for Robot Guidance," Robotica, Cambridge University Press, May, 1985.
- KEN11 Kent, E. W., and Tanimoto, Steven L., "Hierarchical Cellular Logic and the PIPE Processor: Structural and Functional Correspondence," Computer Vision, Graphics, and Image Processing, July, 1985.
- KEN12 Kent, E. W., "PIPE: A Specialized Computer Architecture for Robot Vision," January, 1986, (to be published as book chapter).
- KEN13 Kent, E. W., Shneier, M. O., Hong, T. H., "Building Representations from Fusions of Multiple Views," IEEE International Conference on Robotics and Automation, April, 1986.

-- ALSO SEE AL22; FUR1; LUM16,19; SHN10,13,15,17,18,19

Kilmer, R. D.

KI8 Kilmer, R., McCain, H., Juberts, M., Legowik, S. A.,
"Watchdog Safety Computer Design and Implementation,"
Robots 8 Conference and Exposition.

-- ALSO SEE AL22; MCC2; SZ1

Kirsch, R. A.

KIR1 Kirsch, R. A., "Pictures as Primary Sources for Computer-
Based Art History Data," Proc. of International Conf. on
Automatic Processing of Art History Data; Pisa, Italy,
September 24, 1984; also NBSIR 84-2928.

Lam, H.

-- SEE BA1

Lau, K.

LAU1 Lau, K., Hocken, R. J., "A Survey of Current Robot
Metrology Methods," Annals of the CIRP.

LAU2 Lau, Kam, Hocken, Robert, Haynes, Leonard, "Robot End Point
Sensing Using Laser Tracking System," Workshop on Robot
Standards, Detroit, MI, June 6-7, 1985.

LAU3 Lau, Kam, Hocken, Robert, Haight, William, "An Automatic
Laser Tracking Interferometer System for Robot Metrology,
Proceedings for CIRP - Precision Engineering Conference,
Interlaken, Switzerland, July, 1985.

-- ALSO SEE VII

Lee, J.

LE1 Lee, James D., Chiou, Jen-Huang, Erdman, A. G., "Comparison
Between Two Theories of Plasticity," Society of Engineering
Science 22nd Annual Meeting, Pennsylvania State University,
October 7-9, 1985.

LE2 Lee, J. D. and Wang, B. L., "Finite Element Analysis of
Curved Composite Laminate," International Symposium on
Composite Materials and Structures, Beijing, China,
June 10-13, 1986.

LE3 Lee, J. D. and Haynes, L. S., "Finite Element Analysis of
Flexible Fixturing System," Japan-U.S.A. Symposium on
Flexible Automation; Control and Design in Robotics,
Vehicles, and Flexible Manufacturing Systems, July, 1986.

Lee, K.

-- SEE DON1

Legowik, S. A.

-- SEE KI8

Lettieri, Thomas R.

LET3* Lettieri, T. R. and Jenkins, W. D., "Ultra-high Resolution Sizing of Single Droplets by Resonance Light Scattering," Proceedings of the 1983 ASTM Symposium on Liquid Particle Size Measurement Techniques, Kansas City, Missouri. June 23-24, 1983.

LET4 Lettieri, T. R., Preston, R. E., Bell, M. I., "Raman Spectroscopy of Single Optically Levitated Droplets," Proceedings of the 1984 CRDC Scientific Conference on Obscuration and Aerosol Research, October, 1984.

-- ALSO SEE MUL1

Libes, D.

LIB1 Libes, D., "User-Level Shared Variables," Proceedings of the "Summer 85 USENIX Conference, May, 1985.

LIB2 Libes, D., "UNIX in the Government's Automated Manufacturing Research Facility (AMRF)," Government Computer News, February 14, 1986.

Lieberman, A. G.

LIE10 Lieberman, A. G., "Transient Dynamics of Ultrashort Electromagnetic Pulses," Bull. Am. Phys. Soc. 29(4): 656; April, 1984.

LIE11 Lieberman, A. G., "Optical Phase Change Upon Reflection from a Graded Metal Surface," Journal of the Optical Society of America.

LIE12 Lieberman, A. G., "Transient-State Analysis of Plane Electromagnetic Waves Reflected from Dispersive Material Surfaces, NBS Technical Note.

LIE13 Lieberman, A. G., "Characterization of Optical Materials and Surfaces Using Time-Domain Reflectometry", Digest for NBS Topical Conference on Basic Properties of Optical Materials, May 7-8, 1985.

Liu, C. R.

-- SEE DON2

Luck, Randall

-- SEE KEN8,9

Lumia, R.

- LUM1 Lumia, R., Parrish, E. A., "Charge Coupled Device Technology in Pattern Recognition," presented at Southeastcon '78, pp. 368-370, April 12-14, 1978.
- LUM2 Lumia, R., "The Applications of Pattern Recognition," Electronique et Applications Industrielles, No. 270, pp. 42-47, June 1, 1979.
- LUM3 Lumia, R., Parrish, E. A., "Discrete Analog Processing in Automation," Mundo Electronico, No. 86, pp. 103-106, June, 1979.
- LUM4 Lumia, R., Parrish, E. A., "An Example of the Use of CCD Processors in Automation," IEEE Transactions on Instrumentation and Measurement, Vol. IM-28, No. 2, pp. 105-108, June, 1979.
- LUM5 Lumia, R., "A Low Cost Optical Data Acquisition System," presented at IECI '80 Conference, Philadelphia, Pennsylvania, March 17-19, 1980.
- LUM6 Lumia, R., "Novel Method for Signal Energy Measurement," IEEE Transactions on Instrumentation and Measurement, Vol. IM-29, No. 3, pp. 198-200, September, 1980.
- LUM7 Lumia, R., "A Microprocessor Based Quality Control System," presented at Southeastcon '81, Huntsville, Alabama, April 5-8, 1981.
- LUM8 Lumia, R., Haralick, R. M., Shapiro, L. G., "Texture Discrimination Using Region Based Primitives," presented at Pattern Recognition and Image Processing Conference, PRIP '81, Dallas, Texas, August 3-5, 1981.
- LUM9 Lumia, R., "Reality in French Engineering Education," IEEE Trans. on Education, Vol. E-24, No. 4, pp. 275-277, November, 1981.
- LUM10 Lumia, R., "Variable Threshold Digitizer for Photodiode Array," IEEE Trans. on Instrumentation and Measurement, Vol. IM-30, No. 4, pp. 299-301, December, 1981.

- LUM11 Lumia, R., "A New Connected Components Algorithm for Large Images," presented at Southeastern Symposium on System Theory, Blacksburg, Virginia, April 15, 1982.
- LUM12 Lumia, R., Shapiro, L. G., Zuniga, O., "A New Connected Components Algorithm for Virtual Memory Computers," presented at Pattern Recognition and Image Processing Conference, PRIP '82, Las Vegas, Nevada, June 17, 1982.
- LUM13 Lumia, R., Haralick, R. M., Shapiro, L. G., "Texture Analysis of Aerial Photographs," Pattern Recognition, Vol. 16, No. 1, pp. 39-46, 1983.
- LUM14 Lumia, R., Shapiro, L. G., Zuniga, O., "A New Connected Components Algorithm for Virtual Memory Computers," Computer Graphics and Image Processing, Vol. 22, pp. 287-300, 1983.
- LUM15 Lumia, R., "A New Three Dimensional Connected Components Algorithm," Computer Graphics and Image Processing, Vol. 23, pp. 207-217, 1983.
- LUM16 Lumia, R., Shneier, M., Kent, E., "The Real-time Iconic Image-processor," IEEE International Conference on Robotics and Automation, St. Louis, Missouri, March, 1985.
- LUM17 Lumia, R., "Representing Solids for a Real-time Robot Sensing System," submitted to Prolamat '85 Conference, June, 1985.

-- ALSO SEE KEN7,8,9; SHN17,18,19

Luo, R.

- LUO1 Luo, R., Chen, R., Yang, J. C. S., Dagalakis, N. G., "Identification of the Dynamic Characteristics of Robotic Systems," Proceedings of the Robots 8 Conference, Detroit, Michigan, June, 1984.

Magrab, E.

- MAG5 Magrab, E. B., "Visualization of Machine Tool Vibratory Motion," Bound Volume of Special Session on CAD/CAM at ASME Piping Division Conference; San Antonio, TX, June, 1984, January, 1984.
- MAG6 Magrab, Edward, "Some Perspectives on CAD/CAM in Mechanical Engineering," presented at the 1984 Pressure Vessels and Piping Conference and Exhibition, San Antonio, Texas, June 17-21, 1984, PVP-Vol. 87.

MAG7* Magrab, E., Gilsinn, D., "Buckling Loads and Natural Frequencies of Drill Bits and Fluted Cutters," Trans. ASME J. Engrg. Ind. 106:196-204, August, 1984.

MAG 8 Magrab, Edward B. and Vaishnav, Ramesh N., "A General Procedure to Evaluate Robot Positioning Errors: Part II-Numerical Results", International Journal of Robotics Research, April, 1985.

-- ALSO SEE EST3

Mansbach, P.

-- SEE HUI; SHN10,13,15

Marx, E.

MARX8* Marx, E. and Mulholland, G. W., "Size and Refractive Index Determination of Single Polystyrene Spheres," J. Res. Nat. Bur. Stand. 88 (5):321-338, September-October, 1983.

MARX9* Marx, E., "Transient Fields in Dispersive Media," J. Math. Phys., 24(11):2602-2607; November, 1983.

MARX10 Marx, E., "Free-Space Propagation of Light Pulses," NBSIR 84-2835, May, 1984.

MARX11 Marx, E., "CSORKED Scalar Particles in the Lorentz Gauge," International Journal of Theoretical Physics, (in press).

MARX12 Marx, E., "Self-Patch Integrals in Transient Electromagnetic Scattering," IEEE Transactions on Antennas and Propagation.

MARX13 Marx, E., "Neighboring-Patch Integrals in Transient Electromagnetic Scattering," IEEE Transactions on Antennas and Propagation.

MARX14 Marx, E., Cooper, J., "Free-Space Propagation of Ultra-Short Light Pulses," Journal of the Optical Society of America.

MARX15 Marx, E., "Alternative Interaction Between Spinor and Yang-Mills Fields," Nuovo Cimento (in press).

MARX16 Marx, Egon, "Free-Field Propagation of Localized Pulses," IEEE Transactions on Antennas and Propagation, February, 1985.

- MARX17 Marx, Egon, "The Composite Proton," International Journal of Theoretical Physics," April, 1985.
- MARX18 Marx, E., "The Causal Green Distribution In Relativistic Quantum Mechanics," Journal of Mathematical Physics, December, 1985.
- MARX19 Marx, E., "Electromagnetic Pulse Scattered by a Sphere," IEEE Transactions in Antennas and Propagation, March, 1986.

-- ALSO SEE MUL1,3

McCain, H.

- McC1 McCain, H. G., "A Hierarchically Controlled, Sensory Interactive Robot in the Automated Manufacturing Facility," 1985 International Conference on Robotics & Automation, St. Louis, MO, March 25-28, 1985.
- McC2 McCain, H. G., Kilmer, R. D., Murphy, K. N., "Development of a Cleaning and Deburring Workstation for the AMRF," Proceedings of the Deburring & Surface Conditioning '85 Conference, July, 1985.

-- ALSO SEE AL22; KI8

McCammon, I.

- McCA1 McCammon, Ian, "Design of a Conformal Tactile Sensing Array," Proceedings of the Intelligent Robots and Computer Vision Conference, Society of Photo-Optical Instrumentation Engineers, November 4-8, 1984.

McKenzie, Raymond L.

-- SEE MUL3

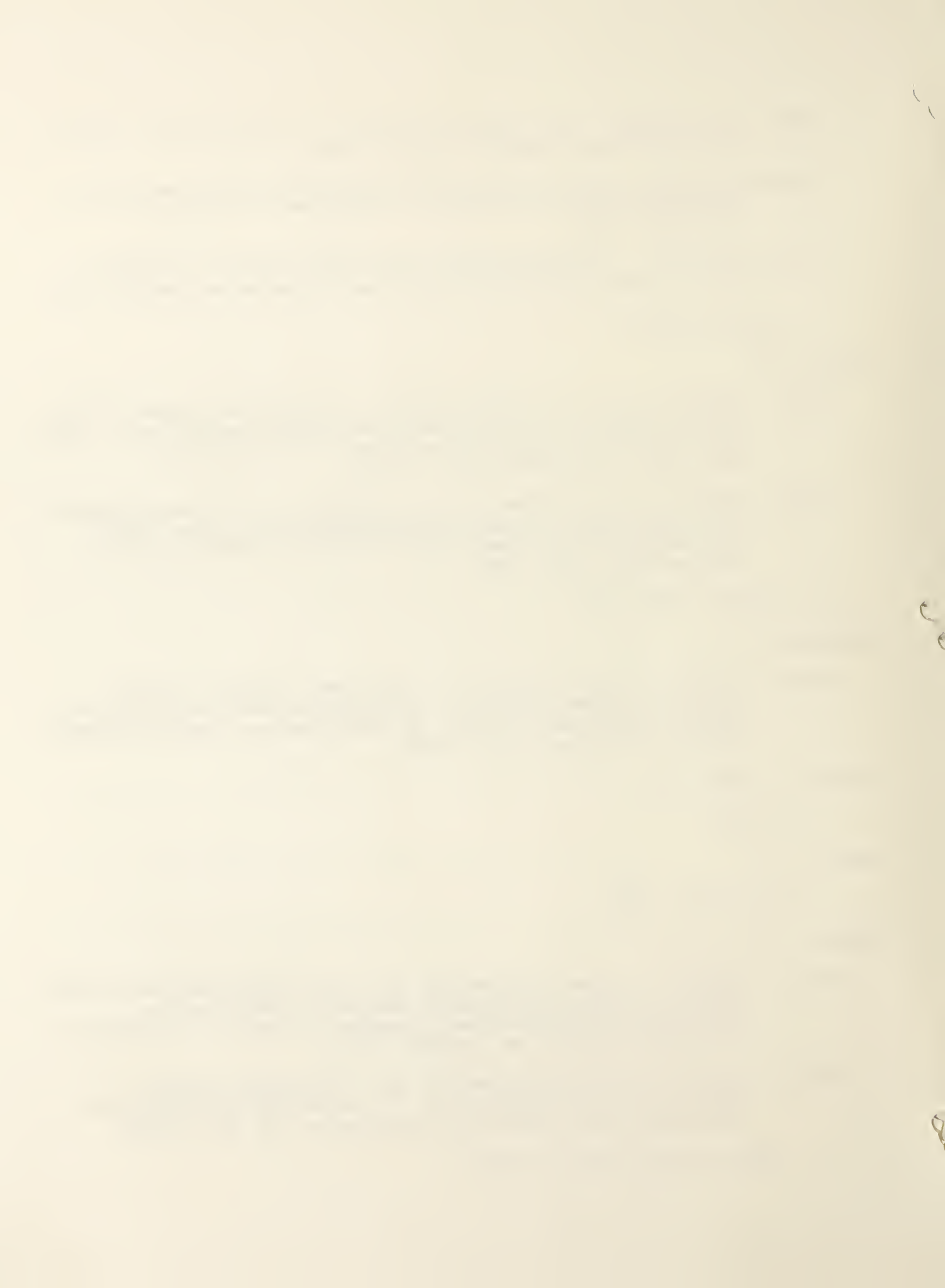
McLay, M. J.

-- SEE GI7,19; VOR9

McLean, C. R.

- MCL3 McLean, C., "An Architecture for Intelligent Manufacturing Control," 1985 International Computer & Engineering Conference and Exposition, American Society of Mechanical Engineers, Boston, MA, August, 1985.
- MCL4 McLean, C. R. and Wenger, C. E., "The AMRF Material Handling System Architecture," Proceedings of Control 86 Conference and Exposition, Barrington, IL, May, 1986.

-- ALSO SEE AL22; FUR1; JON1,2,3



Mikkilineni, K. P.

-- SEE BA1

Mitchell, Mary J.

MITC1 Mitchell, M. J., Barkmeyer, E. J., "Data Distribution in the NBS Automated Manufacturing Research Facility," Proceedings of the IPAD2 Conference, Denver, Colorado, April 17-18, 1984.

-- ALSO SEE BA1

Mitchell, R. A.

MIT3 Mitchell, R. A., "Progress in Force Measurement at NBS," 10th International Conference of IMEKO Technical Committee CTC-3 on Measurement of Force and Mass."

MIT4 Mitchell, Richard A., "Customized Force Calibration: Matching Laboratory Tests to Field Conditions," ASTM Standardization News, July, 1985.

MIT5 Mitchell, R. A., Seifarth, R. L., Reeve, C. P., "Eccentric Load Sensitivity of Force Sensors," Proceedings of the 11th International Conference on Measurement of Force and Mass, IMEKO, Amsterdam, May 12-16, 1986.

-- ALSO SEE AL22; FA3; PET1

Mulholland, G. W.

MUL1 Mulholland, G. W., Hartman, A. W., Hembree, G. G., Marx, E., Lettieri, T. R., "Standard Reference Materials: Development of a 1 um Diameter Particle Size Standard (SRM 1690), NBS Special Publication.

MUL2 Mulholland, G. W., Hembree, G. G., Hartman, A. W., "Sizing of Polystyrene Spheres Produced in Microgravity," NBS Interagency/Internal Report.

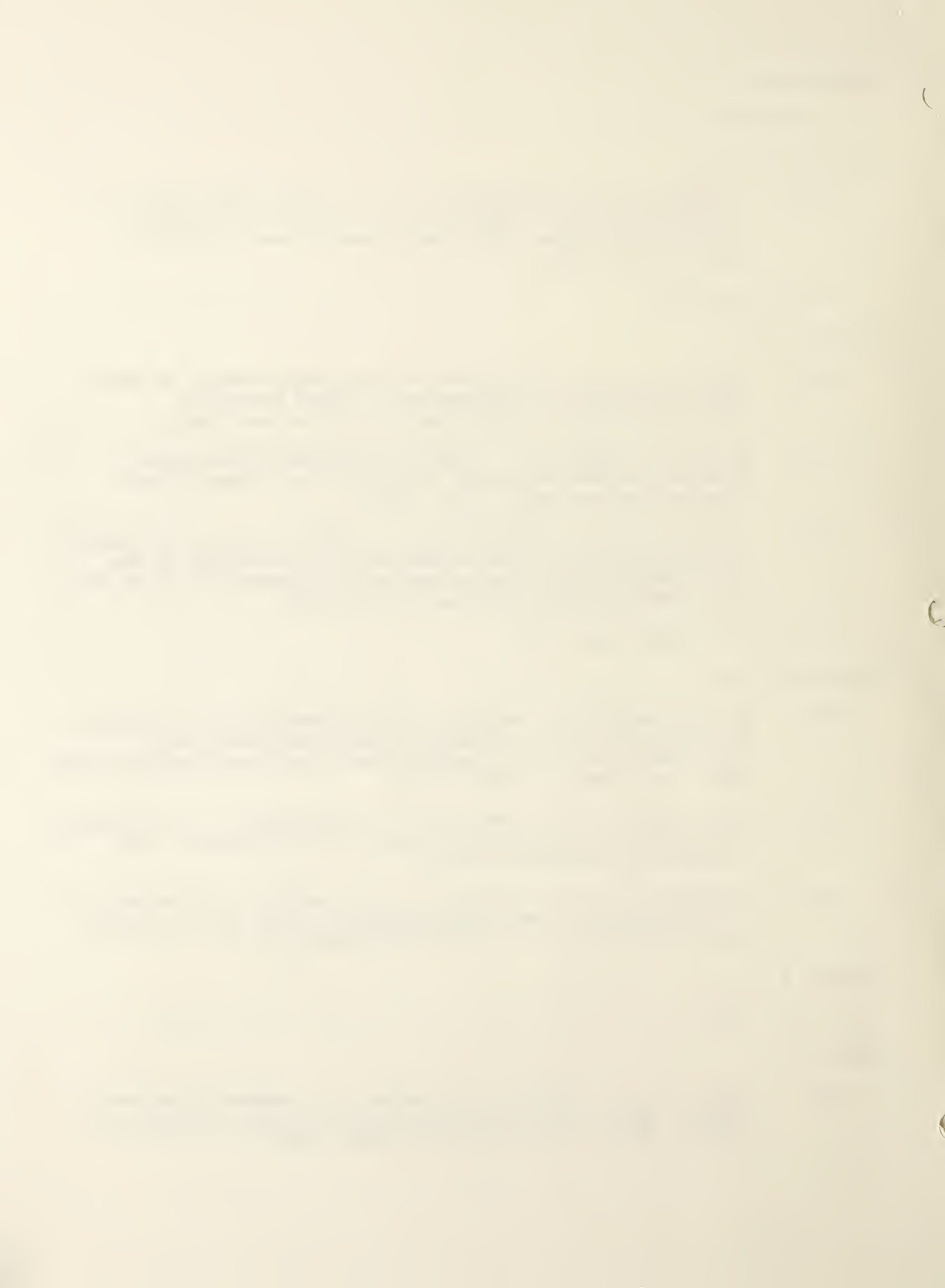
MUL3 Mulholland, G. W., McKenzie, R. L., Marx, E., Fletcher, R. H., "Refractive Index and Evaporation Rate of Individual Smoke Droplets," J. Colloid Interface Sci.

Murphy, K. N.

-- SEE MCC2

Myers, D. R.

MY8 Myers, D. R., Juberts, M., Leake, S., "Enhanced Telemanipulator Operation Using LED Beacons," IEEE Conference on Systems, Man, and Cybernetics, June, 1985.



MY9 Myers, D. R. and Dagalakis, N., "Estimation of the Dynamic Parameters of a Robot Joint Drive System," submitted to 1986 IEEE International Conference on Robotics and Automation, April, 1986.

-- ALSO SEE DA9,10,11,12,13

Nagalia, S.

-- SEE SHN7,11

Nanzetta, Philip

NANZ1 Nanzetta, P., Wellington, J., "Publications of Center for Manufacturing Engineering, 1978-1983," NBSIR 84-2840, March, 1984.

NANZ2 Nanzetta, P., "Update: NBS Research Facility Addresses Problems in Set-Ups For Small Batch Manufacturing," Industrial Engineering, Volume 16, No. 6, June, 1984.

Nashman, M.

-- SEE KEN10; SHN7,10,13

Nedzelnitsky, V.

NE8 Nedzelnitsky, Victor, "Development of Standards for Measuring the Phase Response of Microphones," Proceedings of INTER-NOISE 84, October, 1984.

Nyyssonen, D.

NY1 Nyyssonen, D., "Procedure for Calibration of Ferrite Gaps in Magnetic Tape Heads Traceable to NBS AR-Chromium Optical Linewidth SRMs," NBSIR 86-3306, January, 1986.

Orser, D. J.

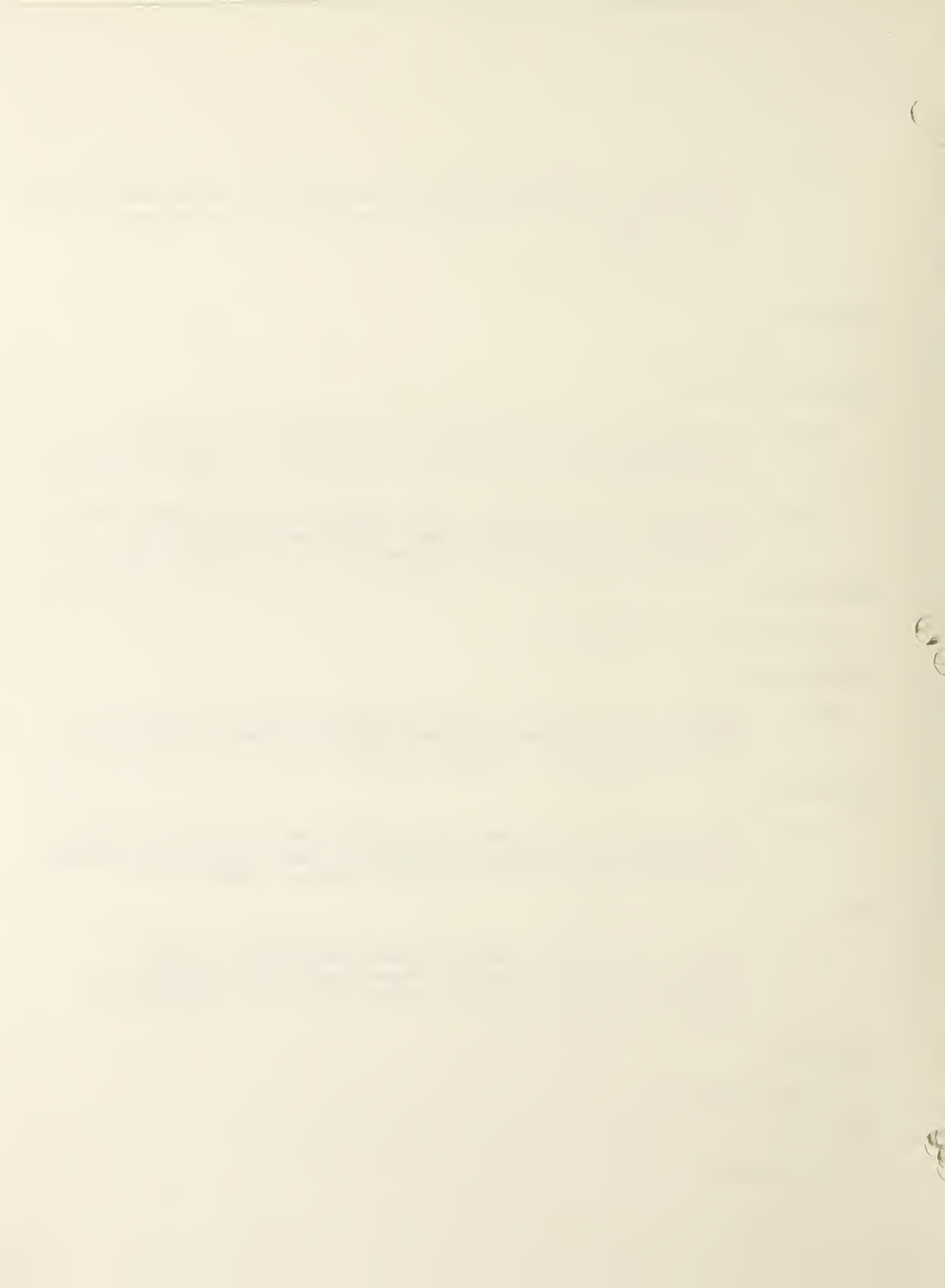
OR1 Orser, D. J., "An Algebraic Representation for the Topology of Multicomponent Phase Diagrams," chapter in Computer Modeling of Phase Diagrams, to be published by ASM/TMS, Spring, 1986.

Palombo, L.

-- SEE SHN10,13

Pan, C. S.

-- SEE YE10



Parrish, E. A.

-- SEE LUM1,3,4

Payne, B. F.

PAY7* Payne, B. F. and Serbyn, M. R., "An Automated System for the Absolute Measurement of Pickup Sensitivity," NCSL 1983 Workshop and Symposium Proceedings, Boulder, CO, pp. II-11.1 to 11.22, July 18-21, 1983.

PAY8 Payne, B. F., "Automation of Vibration Testing at the National Bureau of Standards," Institute of Environmental Sciences, Proceedings, 30th Annual Technical Meeting, April 30-May 3, 1984.

PAY9 Payne, B. F., "The Back-to-Back Accelerometer as a High Frequency Vibration Standard," 31st International Instrumentation Symposium (ISA), January, 1985.

-- ALSO SEE ROB4

Peris, J.

-- SEE SL2,3,4

Peterson, R. W.

PET1 Peterson, R. W., Jenkins, L., Mitchell, R. A., "Interlaboratory Comparison of Force Calibrations Using ASTM Method E74-74, NBS Technical Notes, January, 1985.

Popplestone, R. J.

POP1 Popplestone, R. J., Ambler, A. P., Shneier, M., Bellos, I., "Formation of Body Models and Their Use in Robotics," Proceedings 8ISIR/4CIRT/10. IPA Arbeitstagung, Stuttgart, West Germany, 1978.

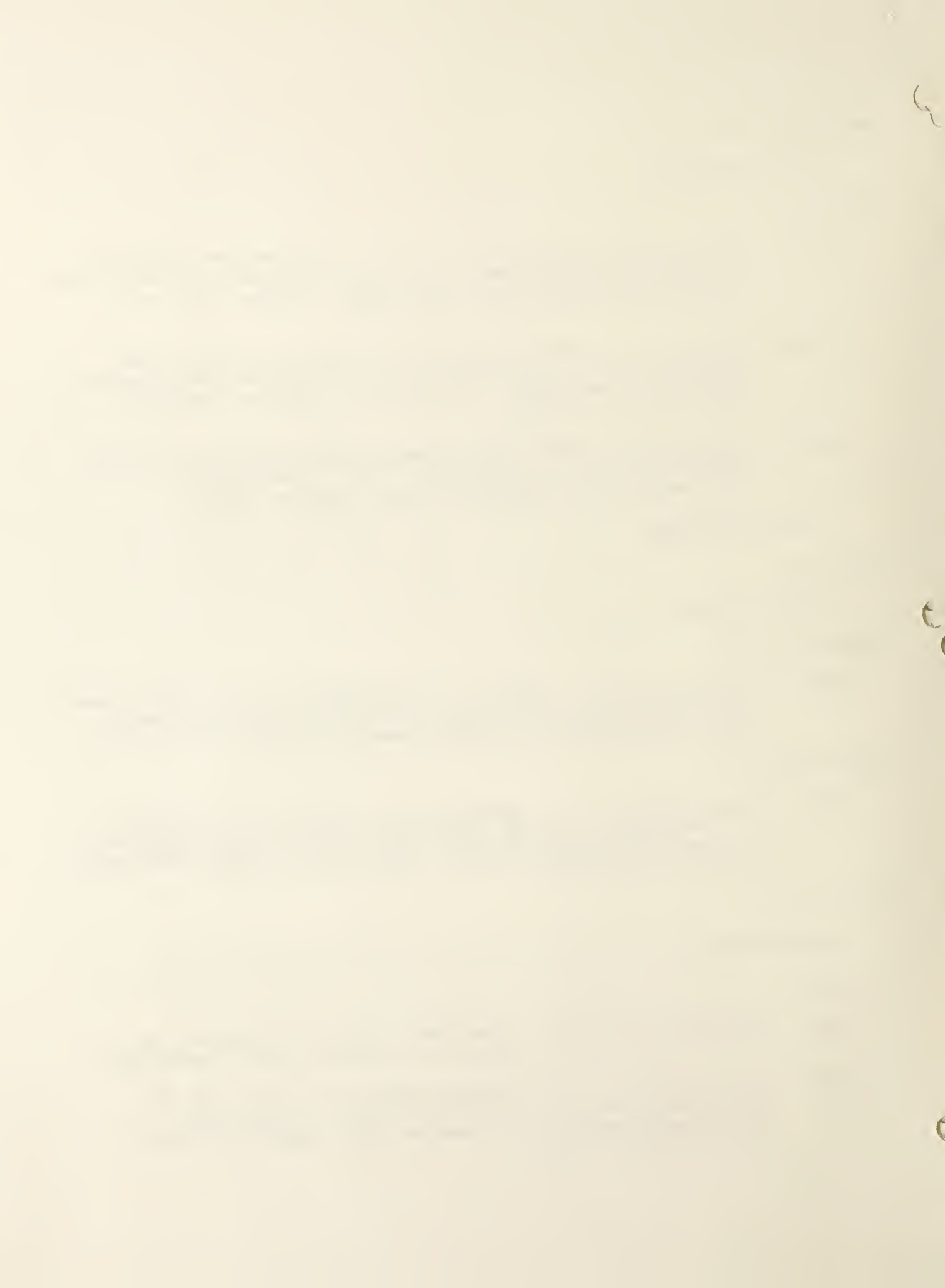
Preston, R. E.

-- SEE LET4,5

Proctor, T.

PR7* Proctor, T. M., Jr., "The NBS Conical Transducer," J. Acoust. Soc. Am. 74 (Suppl. 1) S14, Fall 1983 (abstract).

PR8* Proctor, T. M., Jr., Breckenridge, F. R., Pao, Y. H., "Transient-waves in an Elastic Plate: Theory and Experiment Compared," J. Acoust. Soc. Am. 74(6), 1905-1907, December, 1983.



PR10 Proctor, T., Breckenridge, F., Eitzen, D., "The Development of High Fidelity Acoustic Emission Transducers," submitted to the American Society of Metals Proceedings.

PR11 Proctor, T., Breckenridge, F., "NBS Conical Transducer Manual - Transducers #60 and #42," Chapter in Battelle NW Topical Report to NADC.

-- ALSO SEE FIC6

Ranade, S.

RAN1 Ranade, S., Shneier, M., "Using Quadrees to Smooth Images," IEEE Trans. SMC, pages 373-376, May, 1981.

Reeve, Charles P.

REEV1 Reeve, Charles P., "The Calibration of a Roundness Standard," NBSIR 79-1758, June, 1979.

REEV2 Reeve, Charles, P., "The Calibration of Angle Blocks by Intercomparison," NBSIR 80-1967, April, 1980.

-- ALSO SEE MIT5

Ressler, S.

RES1 Ressler, S., "TileTool: A Graphical Interface for the Exploration of Generalized Penrose Tilings," IEEE Computer Graphics and Applications, March, 1986.

Rippey, W.

RIP1 Rippey, W. G., and Vranish, John M., "Robotic Tool Changing In a Horizontal Workstation," Proceedings Robots 9 SME Conference February, 1985.

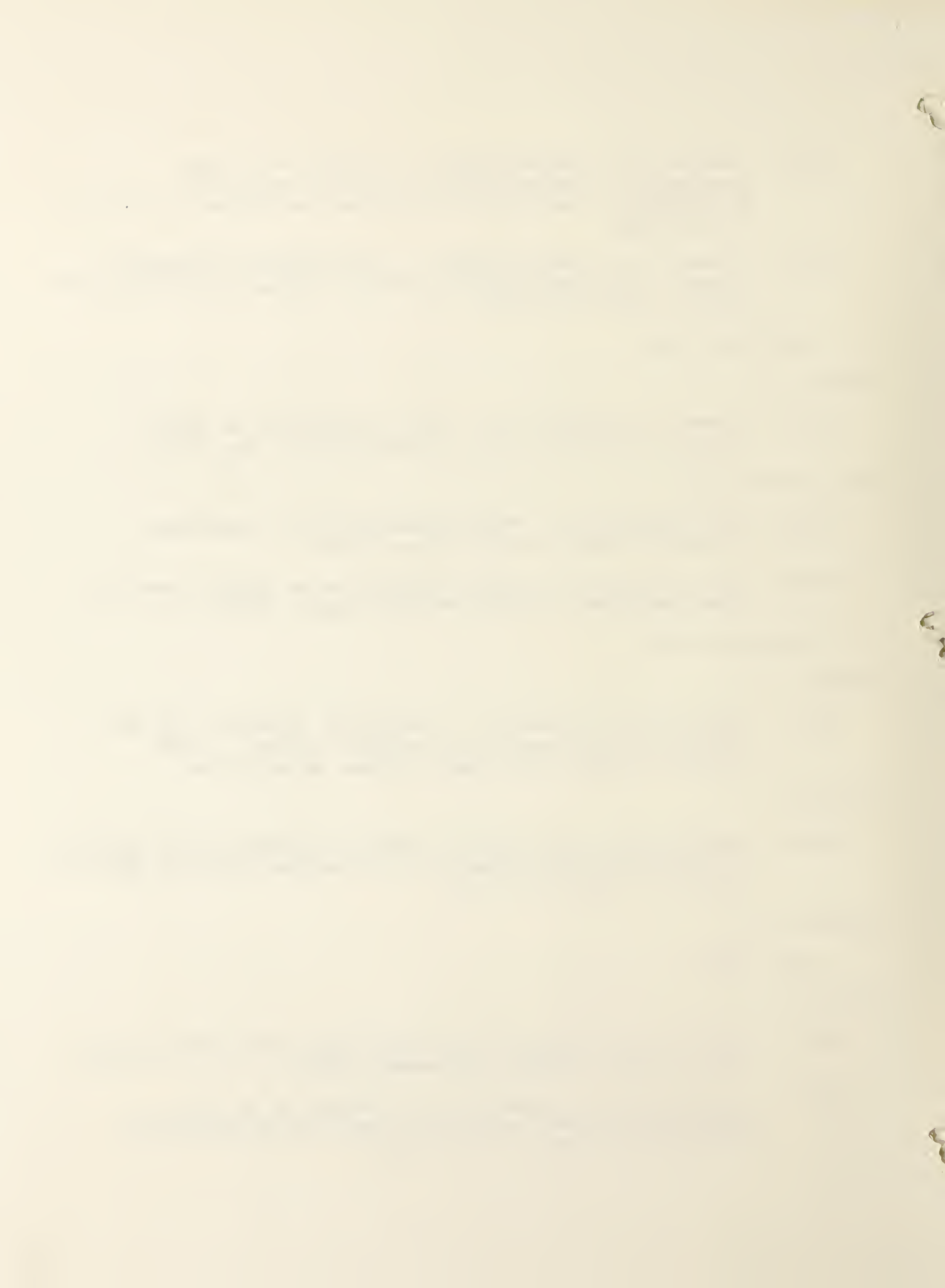
Robbins, C. R.

-- SEE JONE2

Robinson, D. C.

ROB3 Robinson, D., "Evaluation of Chain Saw Simulated Kickback Modes," NBSIR 84-2823, September, 1983.

ROB4 Robinson, D. C., Serbyn, M. R., Payne, B. F., "A Description of NBS Calibration Services in Mechanical Vibration and Shock," (in review).



Rosenfeld, A.

-- SEE HON1,2; SCH1,2

Roy, V. B.

-- SEE BIE1

Rutkowski, W.

-- SEE SHN13,20

Sachse, W.

SA4 Sachse, W., Hsu, N. N., "Ultrasonic Transducers,"
Encyclopedia of Materials Science and Engineering,
Pergamon Press, Oxford, 1983.

Sansalone, M.

-- SEE CAR11

Scher, A.

SCH1 Scher, A., Shneier, M., Rosenfeld, A., "Clustering
Collinear Line Segments," Pattern Recognition, 15, 2,
85-91, 1982.

SCH2 Scher, A., Shneier, M., Rosenfeld, A., "A Method For
Finding Pairs of Anti-parallel Straight Lines," IEEE
Trans. PAMI 4, 316-323, May, 1982.

Schoonover, R. M.

SCH1 Schoonover, R. M., Keller, J., "A Surface-Dependent
Thermal Effect in Mass Calibration and What You Can Do
About It," In Proceedings of the 68th National Conference
on Weights and Measures, Sacramento, California, July 18-
22, 1983.

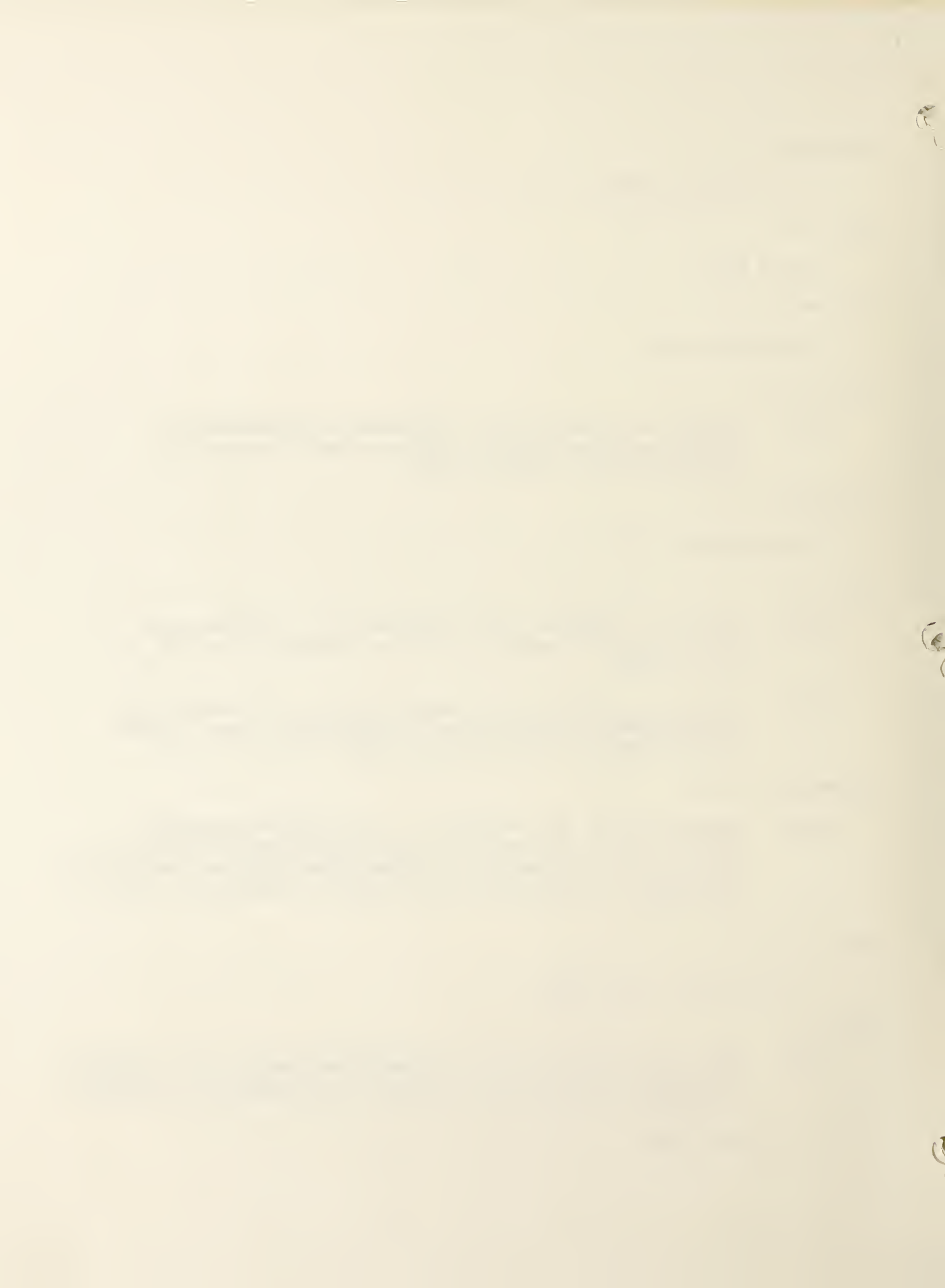
Scire, F. E.

-- SEE GI7,19; TE12; VOR9

Scott, H.

SCO2 Scott, H., Strouse, K., "Workstation Control in a Computer
Integrated Manufacturing System," Proceedings of Autofact
6, October, 1984.

-- ALSO SEE AL22



Seifarth, R. L.

-- SEE MIT5

Serbyn, M. R.

-- SEE ROB4

Shapiro, L. G.

-- SEE LUM9,12,13,14

Shneier, M.

- SHN1 Shneier, M. O., "Recognition Using Semantic Constraints," Proceedings FNUTS International Conference on Artificial Intelligence, pages 585-589, Cambridge, Massachusetts, 1977.
- SHN2 Shneier, M., "A Compact Relational Structure Representation," Proceedings Sixth International Conference on Artificial Intelligence, Pages 818-826, Tokyo, Japan, August, 1979.
- SHN3 Shneier, M., "A Compact Relational Structure Representation," Proceedings of the Workshop on the Representation of Three-Dimensional Objects, University of Pennsylvania, Philadelphia, Pennsylvania, May, 1979.
- SHN4 Shneier, M., "Path-length Distance Transforms for Quadtrees," Information Sciences, 23:49-67, 1981.
- SHN5 Shneier, M., "Calculations of Geometric Properties Using Quadtrees," Computer Graphics and Image Processing, 16:296-302, 1981.
- SHN6 Shneier, M., "Models and Strategies for Matching in Industrial Vision," Computer Science Center TR-1073, University of Maryland, College Park, Maryland, July, 1981.
- SHN7 Shneier, M., Nagalia, S., Albus, J., Haar, R., Nashman, M., "Real-time Three-dimensional Vision for Parts Acquisition," SPIE Technical Symposium, East Washington D.C., 1981.
- SHN8 Shneier, M., "Two Hierarchical Linear Feature Representations: Edge Pyramids and Edge Quadtrees," Computer Graphics and Image Processing, 17:211-224, 1981.
- SHN9 Shneier, M., "Extracting Linear Features from Images Using Pyramids," IEEE Trans. SMC, 12:569-572, July/August, 1982.

- SHN10 Shneier, M., Albus, J. S., Kent, E., Nashman, M., Mansbach, P., Palombo, L., "A 6-D Vision System," Proceedings of SPIE Technical Symposium, Crystal City, Virginia, May, 1982.
- SHN11 Shneier, M., Nagalia, S., Albus, J., Haar, R., "Visual Feedback For Robot Control," Proceedings of the Workshop on Industrial Applications of Machine Vision, Research Triangle Park, North Carolina, 232-236, May, 1982.
- SHN12 Shneier, M., Kent, E., Albus, J., Mansbach, P., Nashman, M., Palombo, L., Rutkowski, W., Wheatley, T., "Robot Sensing For a Hierarchical Control System," Proceedings of the 13th ISIR/Robots 7 Symposium, Chicago, Illinois, April, 1983.
- SHN13 Shneier, M., "Using Pyramids to Define Local Thresholds for Blob Detection," IEEE Trans. PAMI 5 3, 345-349, May, 1983.
- SHN14 Shneier, M., "3-D Robot Vision," In the Proceedings of the International Conference on Cybernetics and Society, Seattle, Washington, 332-336, October, 1983.
- SHN15 Shneier, M., Kent, E., Mansbach, P., "Representing Workspace and Model Knowledge for a Robot With Mobile Sensors," Proceedings of the 7th International Conference on Pattern Recognition, Montreal, Canada, July, 1984.
- SHN16 Shneier, M., "Multiresolution Feature Encodings," In Multiresolution Image Processing and Analysis, Springer-Verlag, 1984.
- SHN17 Shneier, M., Lumia, R., Kent, E., "Model-based Strategies For High-level Robot Vision," Submitted to Computer Vision, Graphics, and Image Processing.
- SHN18 Shneier, Michael O., Lumia, Ronald, Kent, Ernest W., "A High Level Sensory-Processing Architecture for Robot Control," International Joint Conference on Artificial Intelligence, January, 1985.
- SHN19 Shneier, Michael O., Lumia, Ronald, Kent, Ernest W., "Model-Based Strategies for High-Level Robot Vision," Computer Vision, Graphics and Image Processing, March, 1985.
- SHN20 Shneier, Michael O., Rutkowski, Wallace S., Hong, Tsai-Hong "Using Chebyshev Polynomials for Interpreting Structured Light Images," 1985 International Conference on Robotics and Automation, April, 1985.

-- ALSO SEE HON1,2,3,4,5,6,7; KEN7,8,9,13; LUM16,19; POP1; RAN1; SCH1,2

Simpson, J. A.

- SIMP6 Simpson, J. A., "Metrology of the Future and the NBS Automated Manufacturing Research Facility," Proceedings of the National Conference of Standards Laboratories' 1984 Workshop and Symposium, October, 1984.
- SIMP7 Simpson, John A., "The Automated Manufacturing Research Facility (AMRF) -- Its Relation to Space Station Operations, AIAA/NASA Symposium on Automation, Robotics, and Advanced Computing for the National Space Program, Washington, DC, September 4-6, 1985.

Slocum, A.

- SL1 Slocum, Alexander H., "Mechanical Design of a Five Axis Robotic Fine Positioning Device," IEEE Conference on "Robotics and Automation", 1985
- SL2 Slocum, A. H., Peris, J., Donmez, A., "Development of a Flexible Automated Fixturing System," International Journal of Machine Tool Design and Research, November, 1985.
- SL3 Slocum, A. H., Greenspan, L., Peris, J. P., "Design and Implementation of a Five-Axis Robotic Micromanipulator," International Journal of Robotics Research, January, 1986.
- SL4 Slocum, A. H., Peris, J. P., Jurgens, P., Yee, K. W., "A Servo-Controlled Pneumatic Double-Gripper With Changeable Fingers," International Journal of Robotics Research, January, 1986.

Sternheim, M.

- STE1 Sternheim, M., van Gelder, W., Hartman, A. W., "A Laser Interferometer System to Monitor Dry Etching of Patterned Silicon," J. Electrochem. Soc. 130(3): 655-658; March, 1983.

Strawbridge, M.

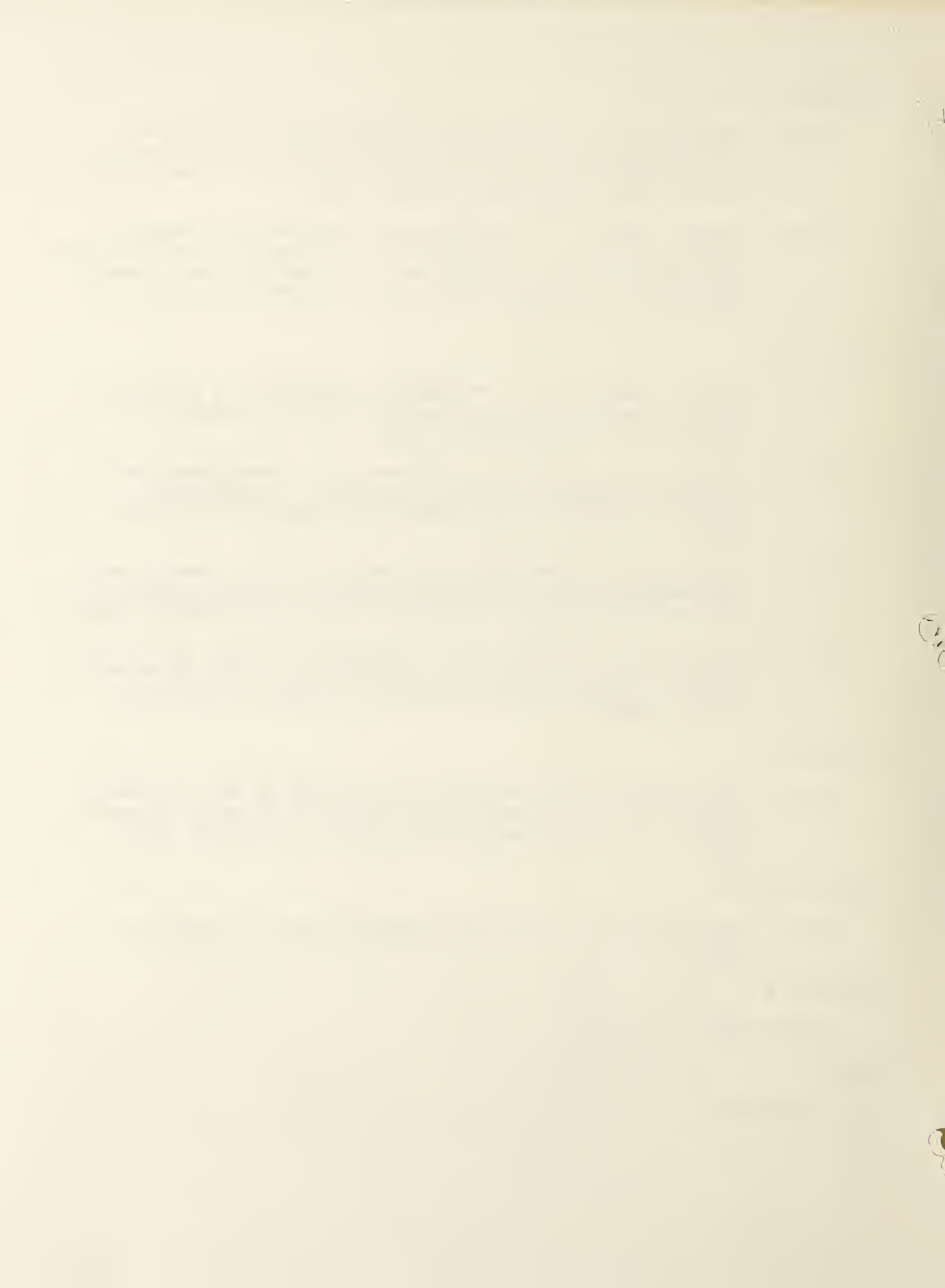
- STR1 Strawbridge, M., "Selected NBSNET Software," NBSIR 84-2902.

Strouse, K.

-- SEE SCO2

Su, S. Y. W.

-- SEE BA1



Swyt, D. A.

- SW12* "Standard Reference Materials: A Look at Techniques for the Dimensional Calibration of Standard Microscopic Particles," Nat. Bur. Stand. (U.S.) Spec. Publ. 260-85, Washington, DC, September, 1983.
- SW13 Swyt, Dennis A., "Innovation in Manufacturing Technology: A View from NBS," Proceedings - 1985 NSF Conference on Industrial Science and Technological Innovation, Albany, NY, May, 1985.
- SW14 Swyt, Dennis A., "New Demand for Engineering Specialists in the Computerized Manufacturing Systems Environment: A View from NBS, NSF invited talk: 8th International Conference on Production Research; Stuttgart, Germany, August 21, 1985.
- SW15 Swyt, D. A., Hopp, T. H., Charlton, T., "Quality Control in Automated Manufacturing," Measurement Science Conference, Irvine, CA, January, 1986.
- SW16 Swyt, D. A., "Technology, Industry, Skills, and Education," invited article for The Technology Teacher: The Journal of the Technology Education Association, December, 1985.

Szabo, S.

- SZ1 Szabo, S., Juberts, M., Kilmer, R. D., "Automated Guided Vehicle at the National Bureau of Standards Automated Manufacturing Research Facility," Journal of Unmanned Vehicle Systems.

Tanimoto, S. L.

-- SEE KEN11

Teague, E. C.

- TE12 Teague, E. C., Young, R. D., Scire, F., Gilsinn, D., "Para-Flex Stage for Microtopographic Mapping," Review of Scientific Instruments, (in review).

-- ALSO SEE GI7,19; VOR9

Tschiegg, C. E.

-- SEE FIC5

Vaishnav, R.

- VAI1 Vaishnav, Ramesh N., and Magrab, Edward B., "A General Procedure to Evaluate Robot Positioning Errors: Part I-Theory," International Journal of Robotics Research, January, 1985.

Van Gelder, W.

-- SEE STE1

Veale, R.

-- SEE ZH1

Vira, N.

VII Vira, N. and Lau, K., "Design and Testing of Extensible Ball Bar for Measuring the Positioning Accuracy and Repeatability of Industrial Robots," North American Manufacturing Research Conference, University of Minnesota, May 20-30, 1986.

Vorburger, T. V.

VOR7* Vorburger, T. V., "FASTMENU: A Set of FORTRAN Programs for Analyzing Surface Texture," Nat. Bur. Stand. (U.S.), NBSIR 83-2703, July, 1983. 123 p.

VOR8* Vorburger, T. V., Teague, E. C., Scire, F. E., McLay, M. J., Gilsinn, D. E., "Surface Roughness Studies with DALLAS-Detector Array for Laser Light Angular Scattering," J. Res. Nat. Bur. Stand. 89(1):3-16; January-February, 1984.

VOR9 Vorburger, T. V., McLay, M. J., Sciere, F. E., Gilsinn, D.E., Teague, E. C., Giauque, C. H., "Surface Roughness Studies for Wind Tunnel Models Used in High Reynolds Number Testing," AIAA 23rd Aerospace Sciences Meeting and Journal of Aircraft and Preprint Collection for International Conference on the Metrology and Properties of Engineering Surfaces, March, 1985.

VOR10 Vorburger, T. V., Gilsinn, D. E., Scire, F. E., McLay, M. J., Giauque, C. H. W., Teague, E. C., "Optical Measurement of the Roughness of Sinusoidal Surfaces," Wear and Proceedings of the Second International Conference on the Metrology and Properties of Engineering Surfaces, (in review).

-- ALSO SEE BIE1; CHU2; GI7,19

Vranish, J. M.

VRA1 Vranish, J. M., "Magnetoresistive Skin for Robots," Proc. of Robotics Research Conference, Lehigh University.

VRA2 Vranish, J. M., "Quick Change System for Robots," Proc. of Robots VIII SME Conference, February 1984.

VRA3 Vranish, J. M., "Materials Handling R&D in a Horizontal Workstation," (to be published).

-- ALSO SEE BUI, RIPI

Wang, B. L.

-- SEE LE2

Wang, C. B.

-- SEE CHE1

Wang, S. H.

-- SEE CHE1

Wellington, J.

-- SEE NANZ1

Wenger, C.

-- SEE McL4

Wheatley, T.

-- SEE KEN10; SHN13

Wyant, J. C.

-- SEE CHU2

Yang, J. C. S.

-- SEE CHE1; LUO1

Yee, K. W.

YE8 Yee, Kenneth, W., "On the Use of Drill-Up for On-Line Determination of Drill Wear," Proc. of Seminar on Sensor Technology for Untended Manufacturing, April 5-6, 1984, Chicago, Illinois, Technical Paper MS84-914, Society of Manufacturing Engineers, Dearborn, MI. 1984.

YE9 Yee, Kenneth W., and Evans, Laurie, "Drill-Up, An Alternative for On-Line Determination of End-Mill Wear," Proceedings of North American Manufacturing Research Conference, May, 1985.

YE10 Yee, K. W., Blomquist, D. S., Dornfeld, D. A., Pan, C. S.,
"An Acoustic Emission Chip-Form Monitor for Single Point
Turning," 26th International Machine Tool Design & Research
Conference, Manchester, England, September 13-18, 1986.

-- ALSO SEE EVAL; SL4

Yeh, P-S.

-- SEE HUI

Young, R. D.

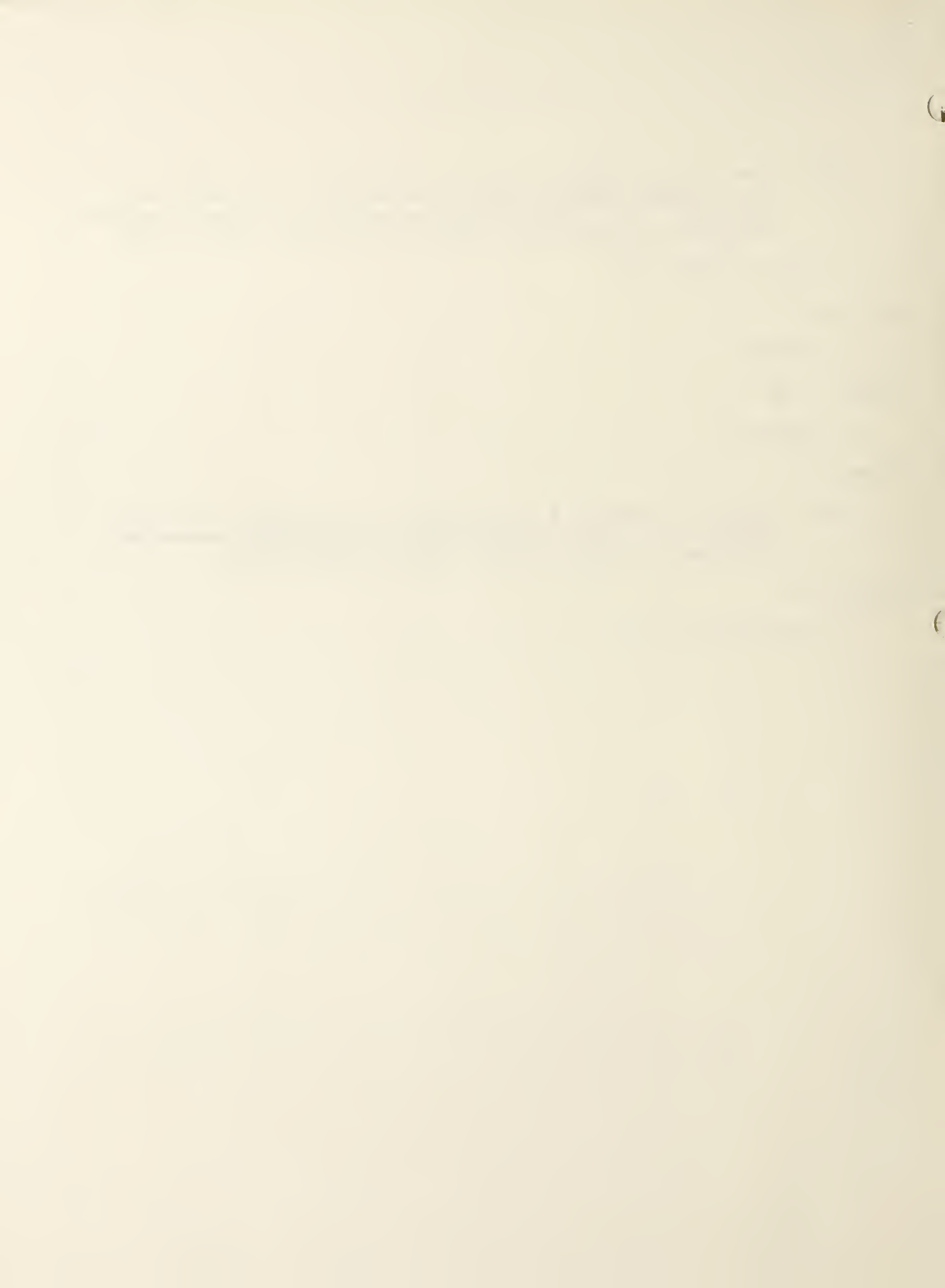
-- SEE TE12

Zhang, G.

ZH1 Zhang, G., Veale, R., Charlton, T., Borchardt, B., and
Hocken, R., "Error Compensation of Coordinate Measuring
Machines," CIRP, Palermo, Italy, August, 1985.

Zuniga, O.

-- SEE LUM12,14



SUBJECT INDEX

This subject index lists those papers which fall in the following categories: Automated Manufacturing, Metrology, Precision Engineering, and Robotics. There are papers in the publication list and supplement which do not fall in any of these four categories.

AUTOMATED MANUFACTURING

AL6, AL10, AL15, AL22-23, BA1, BARB2, BLOM2, BLOO1-7, CHA1, CHU2, DON1-2, EVAL-3, FUR1-3, GE1-3, GRE1, HAY1, HAY3, HOC8, HOPl, HU1, JON1-3, KEL1, KEN5-6, LE3, MAG7, McC1-2, McL1-4, MIL1-3, MITC1, NANZ2, NAU1, SC01-2, SIMP3-5, SIMP7, SL2-4, SM1-10, SW13-15, SZ1, VAN2, VRA3, WE1, YE4-10.

METROLOGY

BAR1, BART1-4, BEE1-4, BERG1, BII-5, BIE1, BLE1-22, BLOM1, BRA1, BREN1, BURN1-9, CHU2, CHW1-5, COO1, COR3-8, CUL1-3, DAI1, D02, DO11-2, DON2, EII-19, ELB1, EST1-3, FA1-3, FIC1-6, FL2-3, FL5, G17-19, GOL1-5, GR1, GREEN1, GREENS1-7, HAI1-3, HAR3-6, HE4-5, HOC1-2, HOC4, HOC7, HOPl-2, HSl-9, HS11, HS13, HS14, JEN1-3, JONE1, JU1, KN1, KO1, KUH1-4, LAU1-3, LEE1-2, LET1-4, LIE10-13, MAG1, MAG4, MAG6, MAG8, MARX2-9, MARX16, MILLE1-2, MIT3-4, MUL1-3, NAD1, NE1, NE3-5, NE7-8, PALM1, PAY1-9, PET1, PO1-2, PR1-3, PR5-10, REEV1-2, RIN1, ROSE1-6, SA1-3, SCH1, SER1-2, SER4, SER6, SIMP1, SIMP6, STE1, SU1, SW1-12, TE1-4, TE6, TE8-11, TS1, TU1, VAR1, VOR1-10, YAN13, YO1, ZH1.

PRECISION ENGINEERING

BLE18, CHU1-2, DON1-2, EST2-3, HOC5-7, HS10, MAG8, PR4, SER3, SER5, TE5, TE7, TE12, VII.

ROBOTICS

AL1-9, AL11-14, AL16-17, AL19-21, AL23-27, BARB1-5, BU1, CHE1, DA5, DA8-13, DAI1, EV1, FIT1-2, GE1-3, HAY1-3, HER1-2, HON1-7, HU1, JU1, KEN1-13, KI6-8, LAU1-3, LE3, LUM1-5, LUM9, LUM11-12, LUM16-17, LUO1, MAG8, MAN4-5, McC1-2, McCA1, MY7-9, POP1, RAN1, RIP1, SCH1-2, SHN1-20, SIMP2-3, SL1, SL3-4, VAI1, VAN1, VII, VRA1-2, WHEA1.

