

successful technology, reality must take precedence over public relations, for Nature cannot be fooled." That no scientist, engineer or technical administrator should ever forget.

Feynman writes that when he was first invited to serve on the shuttle commission his "immediate reaction was not to do it: I have a principle of not going anywhere near Washington or having anything to do with government, so my immediate reaction was—how am I gonna get out of this?" Happily, he had second thoughts. I regret that I didn't have an opportunity to question Feynman about his experience after the commission had completed its report. Although he frequently challenged me through the years about my own government activities in Washington and insisted that he himself could never play such a role, I never really doubted that underneath his joking and cynical manner there was a deep respect for public service. He made that abundantly clear by his conscientious and determined service as a member of the commission—and we are deeply indebted to him for his important contributions to its work.

To those who want to catch a glimpse of the sensitive private Feynman that was largely under wraps in *Surely You're Joking*, I recommend his description of growing up and the story of his first wife, Arlene. To those who have occasionally pondered about the value of science, I recommend his thoughtful 1955 speech on this subject, included as an epilogue. These two chapters alone are more than worth the price of the book.

SIDNEY DRELL
Stanford University

NEW BOOKS

Atomic Physics

Advances in Atomic and Molecular Physics, Vol. 24. D. Bates, B. Bederson, eds. Academic, San Diego, Calif., 1988. 332 pp. \$94.50 hc ISBN 0-12-003824-2. *Compilation*

Advances in Multi-Photon Processes and Spectroscopy, Vol. 4. S. H. Lin, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 316 pp. \$58.00 hc ISBN 9971-50-577-0. *Compilation*

Angular Momentum: Understanding Spatial Aspects in Chemistry and Physics. R. N. Zare. Wiley, New York, 1988. 349 pp. \$39.95 hc ISBN 0-471-85892-7. *Text*

Atomic and Molecular Processes with Short Intense Laser Pulses. NATO ASI Series B: Physics 171. Proc. Wksp., Lennoxville, Canada, July 1987. A. D. Ban-

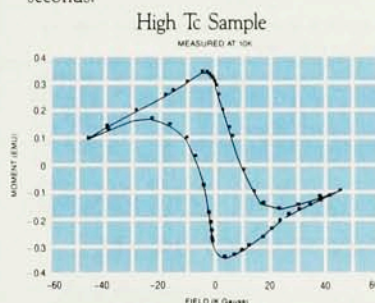
The Standard for Sample Magnetometers Just Got Better

Additional Capability for the Study of Magnetism

Quantum Design's Magnetic Property Measurement System (MPMS) is the most versatile variable temperature magnetometer available, allowing fast accurate measurement of magnetic moment at magnetic fields to ± 5.5 Tesla. Quantum Design has developed a series of options which greatly expand the range and capability of the MPMS, permitting material investigators to tailor the configuration of the MPMS to meet their specific needs.

Hysteresis Measurement Control Option M103

The Hysteresis Measurement Control Option gives the MPMS the ability to collect magnetic hysteresis data faster than any other SQUID magnetometer. For sample moments of 10^{-4} emu and above, the MPMS with this option can perform a field change, make a measurement and record it in as few as twenty seconds.



Transverse Superconducting Coil Set Option M101A

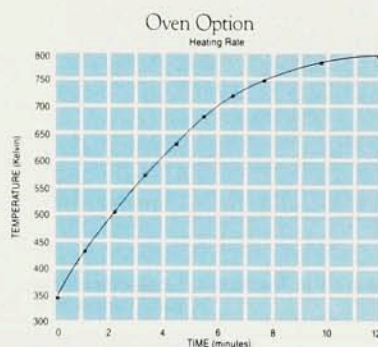
Option M101A allows the measurement of moments having vector components perpendicular to the applied field. This capability permits the observation of anisotropic effects in single crystals. Transverse moments as small as 10^{-6} emu can be resolved.

Computer Controlled Rotator Option M101B

Designed for use with the Transverse Coil Set (Option M101A), this option allows the user to rotate the sample under computer control in steps up to 360 degrees about the longitudinal axis of the magnet.

Sample Space Oven Option M102

The Option M102 is a High-temperature insulated heater assembly which is inserted directly into the existing MPMS sample space, allowing the user to perform magnetic moment measurements at temperatures between ambient and 800 Kelvin. All oven features are fully integrated into the MPMS automated temperature control system.



External Device Control Option M106

Option M106 permits the user to configure and control custom experiments with IEEE-488 devices external to the MPMS control system. This allows the MPMS to be used as an experimental platform with precise temperature and magnetic field control for resistivity, magneto-resistance, critical current and hall effect measurements.

Extended Dynamic Range Option M105

With this option, the MPMS is the first SQUID-based magnetometer capable of measuring magnetic moments over a total dynamic range exceeding 10^9 (10^{-7} to 300 emu). This means bulk ferromagnetic materials and thin-film materials with inherently low magnetic moments can be investigated using a single instrument.

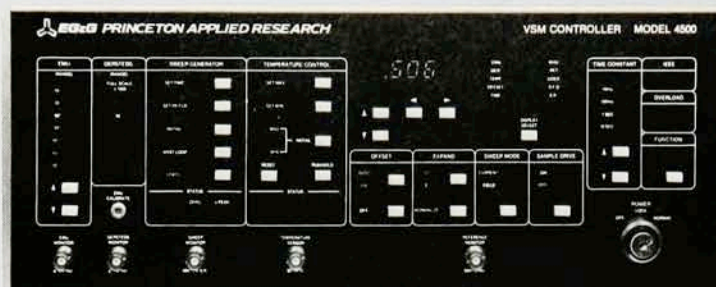
Call or Write for Additional Information on MPMS Options:

11578 Sorrento Valley Road, Suite 30
San Diego, California, USA 92121
(619) 481-4400
Telex: 4943226 Fax: (619) 4817410

QUANTUM DESIGN

Circle number 43 on Reader Service Card

Magnetic Research System



EG&G Princeton Applied Research introduces the completely automated version of the magnetic research industry standard: the new model 4500 Vibrating Sample Magnetometer System.

Features include:

- Fully integrated design including gaussmeter, temperature controller, PC, magnet, and power supply.
- 1.2K to 750 C temperature range
- Unsurpassed noise performance
- 10^{-3} emu sensitivity
- 5×10^{-5} emu noise floor
- Menu-driven IBM compatible system
- Auto hysteresis scan with 0 to 2T field range
- Automatic temperature slewing

Applications include:

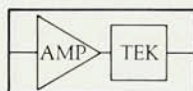
- Meissner Effect
- Magnetic Susceptibility
- Magnetic Hysteresis with bipolar readout
- Magnetic tape and disk material characterization

Send for your FREE information packet today!



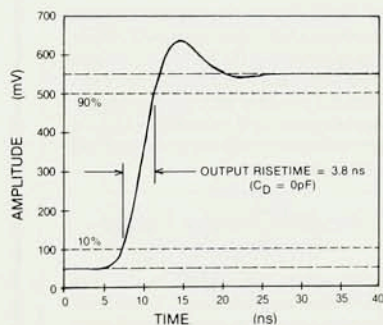
P.O. Box 2565 • Princeton, NJ 08543-2565 USA
(609) 452-2111 • TELEX: 843409

See Us At The Pittsburgh Conference, Atlanta, GA, March 6-10th, 1989, Booths 5903-5910
Circle number 44 on Reader Service Card



CHARGE SENSITIVE PREAMPLIFIER

A250



RUN SILENT — RUN FAST!!! A NEW STATE-OF-THE-ART

EXTERNAL FET

FET CAN BE COOLED

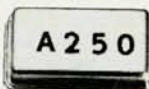
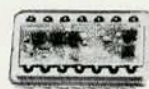
NOISE: < 100e-RMS (Room Temp.)

< 20e-RMS (Cooled FET)

POWER: 19 mW typical

SLEW RATE: > 475 V/ μ s

GAIN-BANDWIDTH f_T > 1.5 GHz



If you are using: Solid State Detectors, Proportional counters, Photodiodes, PM tubes, CEMS or MCPs and want the best performance, try an AMPTEK CHARGE SENSITIVE PREAMPLIFIER

Send for Complete Catalog

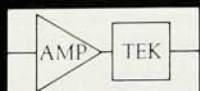
Features:

- Low noise (less than 100 electrons RMS)
- Low power (5 milliwatts)
- Small size (Hybrids)
- High Reliability

Radiation hardened (as high as 10^4 Rads)
One year warranty

Applications:

- Aerospace
- Portable Instrumentation
- Nuclear Plant Monitoring
- Imaging
- Research Experiments
- Medical and Nuclear Electronics
- Electro-Optical Systems and others.



AMPTEK INC.

6 DE ANGELO DRIVE, BEDFORD, MA 01730 U.S.A. (617) 275-2242

SOUTH AUSTRALIA: TEKNIK PTY. LTD., P.O. Alberton, Adelaide 5061; AUSTRIA: AVIATICA Vienna 804-318; BELGIUM: LANDRE INTECHNOL N. V., Antwerp 03221-7810; BRITAIN: TEKNIK LTD., 800 POND 25000, DENMARK: TEKNIK DANMARK, Vejle 46172; ENGLAND: TEKNIK LTD., Spring 800402; FRANCE: TEKNIK S.A.R.L., Cedex 955 7771; WEST GERMANY: TEKNIK GmbH, Munich 797457; INDIA: SARA-TEKNIK Division of BANUBHAI AMBALAL PVT. LTD., Bombay 20419; ISRAEL: GIVON AGENCIES LTD., Tel-Aviv 266122; ITALY: C.I.E.R., Roma 00504; JAPAN: K.K. EWIG SHOKAI, Tokyo 404721; HOLLAND: HOLLANDA N.V., The Hague 51201; HONG KONG: S & F ENTERPRISES LTD., Watson Estate, North Point, TAIPEI: NORMAN, TEKNIK AS, Oslo 02045; POLAND: Overseas Marketing Corp. Ltd., Warsaw 270002; SPAIN: COMELTASA MADRID 254881; SWEDEN: LES KONSULT AB, Bromma 185296; TAIWAN: TAUSE & CO. LTD., Taipei 321-0880.

Circle number 45 on Reader Service Card

drauk, ed. Plenum, New York, 1988. 481 pp. \$92.50 hc ISBN 0-306-42826-1

Correlation and Polarisation in Electronic and Atomic Collisions. Proc. Symp., Belfast, UK, July 1987. A. Crowe, M. R. H. Rudge, eds. World Scientific, Singapore (Teaneck, N.J.), 1988. 352 pp. \$45.00 hc ISBN 9971-50-596-7

Mathematical Frontiers in Computational Chemical Physics. The IMA Volumes in Mathematics and Its Applications 15. Proc. Wksp., Minneapolis, Minn., June 1987. D. G. Truhlar, ed. Springer-Verlag, New York, 1988. 349 pp. \$36.80 hc ISBN 0-387-96782-6

Multiphoton Processes. Cambridge Studies in Modern Optics 8. Proc. Conf., Boulder, Colo., July 1987. S. J. Smith, P. L. Knight, eds. Cambridge U.P., New York, 1988. 365 pp. \$54.50 hc ISBN 0-521-35393-9

Semiclassical Theory of Atoms. Lecture Notes in Physics 300. B.-G. Englert. Springer-Verlag, New York, 1988. 401 pp. \$34.80 hc ISBN 0-387-19204-2

The Spectrum of Atomic Hydrogen: Advances. G. W. Series, ed. World Scientific, Singapore (Teaneck, N.J.), 1988. 512 pp. \$78.00 hc ISBN 9971-50-261-5; \$37.00 pb ISBN 9971-50-287-9. Compilation; includes reprint of The Spectrum of Atomic Hydrogen (Oxford U.P., 1957)

Zero-Range Potentials and Their Applications in Atomic Physics. Physics of Atoms and Molecules. Yu. N. Demkov, V. N. Ostrovskii (translated from Russian by A. M. Ermolaev). Plenum, New York, 1988. 288 pp. \$75.00 hc ISBN 0-306-42779-6. Monograph

Biophysics

Photon Emission from Biological Systems. Proc. Symp., Wroclaw, Poland, January 1986. B. Jezowska-Trzebiatowska, B. Kochel, J. Slawinski, W. Strlek, eds. World Scientific, Singapore (Teaneck, N.J.), 1987. 267 pp. \$40.00 hc ISBN 9971-50-151-1

The Photosynthetic Bacterial Reaction Center: Structure and Dynamics. NATO ASI Series A: Life Sciences 149. Proc. Inst., Cadarache, France, September 1987. J. Breton, A. Vermeglio, eds. Plenum, New York, 1988. 443 pp. \$85.00 hc ISBN 0-306-42917-9

Supramolecular Structure and Function. Proc. Conf., Dubrovnik, Yugoslavia, September 1987. G. Pifat-Mrzljak, ed. World Scientific, Singapore (Teaneck, N.J.), 1988. 278 pp. \$42.00 hc ISBN 9971-50-656-4

Condensed Matter Physics

Core-Level Spectroscopy in Condensed Systems. Springer Series in Solid-State Sciences 81. Proc. Symp., Kashikojima, Japan, October 1987. J. Kanamori, A. Kotani, eds. Springer-Verlag, New York,

1988. 303 pp. \$55.90 hc ISBN 0-387-19112-7

Crystal Growth: Principles and Progress. *Updates in Applied Physics and Electrical Technology.* A. W. Vere. Plenum, New York, 1987. 258 pp. \$47.50 hc ISBN 0-306-42576-9. Monograph text; includes 100 pages of abstracts

Current Topics on Semiconductor Physics. Proc. Sch., Sao Paulo, Brazil, February 1987. O. Hipólito, A. Fazzio, G. E. Marques, eds. World Scientific, Singapore (Teaneck, N.J.), 1988. 266 pp. \$48.00 hc ISBN 9971-50-581-9

Desorption Induced by Electronic Transitions, DIET III. *Springer Series in Surface Sciences 13.* Proc. Wksp., Shelter Island, N. Y., May 1987. R. H. Stulen, M. L. Knotek, eds. Springer-Verlag, New York, 1988. 295 pp. \$59.00 hc ISBN 0-387-19297-2

Diffusion at Interfaces: Microscopic Concepts. *Springer Series in Surface Sciences 12.* Proc. Wksp., Campobello Island, Canada, August 1987. M. Grunze, H. J. Kreuzer, J. J. Weimer, eds. Springer-Verlag, New York, 1988. 205 pp. \$59.50 hc ISBN 0-387-19212-3

Disorder and Order in the Solid State: Concepts and Devices. *Institute for Amorphous Studies Series.* R. W. Pryor, B. B. Schwartz, S. R. Ovshinsky, eds. Plenum, New York, 1988. 261 pp. \$62.50 hc ISBN 0-306-42926-8. *Festschrift for Heinz K. Henisch*

Electronic Structure and Optical Properties of Semiconductors. *Springer Series in Solid-State Sciences 75.* M. L. Cohen, J. R. Chelikowsky. Springer-Verlag, New York, 1988. 264 pp. \$59.00 hc ISBN 0-387-18818-5. Monograph

An Introduction to Solid State Diffusion. R. J. Borg, G. J. Dienes. Academic, San Diego, Calif., 1988. 360 pp. \$49.50 hc ISBN 0-12-118425-0. Text

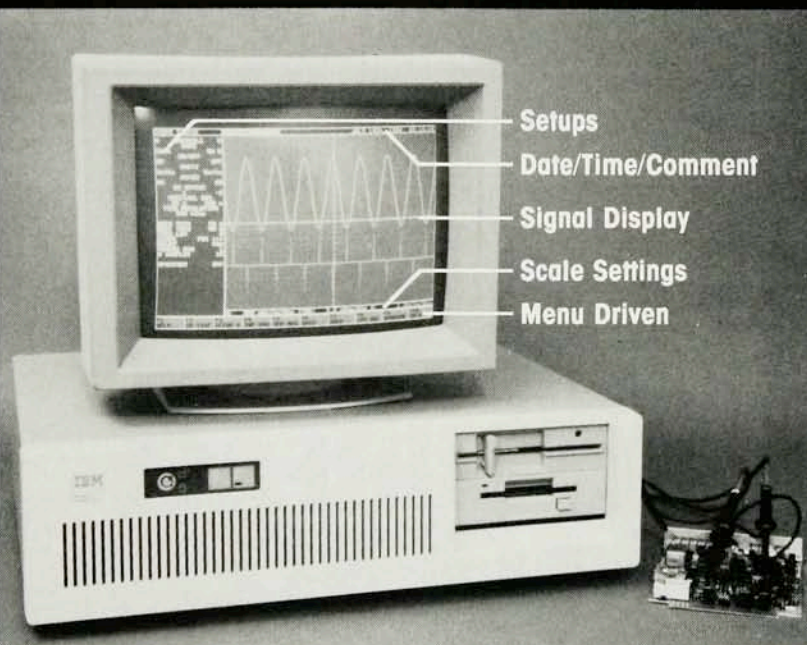
Laser Techniques for Investigation of Defects in Semiconductors and Dielectrics. *Proceedings of the Institute of General Physics 4.* A. A. Manenkov, ed. (translated from Russian by K. S. Hendzel). Nova Science, Commack, N. Y., 1988 [1986]. 204 pp. \$58.00 hc ISBN 0-941743-15-2

Luminescence and Anisotropy of Zinc Sulfide Crystals. *Proceedings of the Lebedev Physics Institute 175, Supplement.* M. D. Galanin, ed. (translated from Russian by K. S. Hendzel). Nova Science, Commack, N. Y., 1988. 170 pp. \$73.00 hc ISBN 0-941743-20-9. Compilation

The Magnetic and Electron Structures of Transition Metals and Alloys. *Proceedings of the Institute of General Physics 3.* V. G. Veselago, L. I. Vinokurova, eds. (translated from Russian by P. Makenin, K. S. Hendzel). Nova Science, Commack, N. Y., 1988 [1986]. 216 pp. \$58.00 hc ISBN 0-941743-14-4

New Developments in Semiconductor Physics. *Lecture Notes in Physics 301.* Proc. Sch., Szeged, Hungary, August 1987. G. Ferenczi, F. Beleznyay, eds. Springer-Verlag, New York, 1988. 302 pp. \$35.80 hc ISBN 0-387-19215-8

DATA ACQUISITION: 20 MHz for <\$1500!



Setups
Date/Time/Comment
Signal Display
Scale Settings
Menu Driven

GOLEM's Plug-In Board and Software Provides Your IBM Compatible PC with these Capabilities:

Digital Storage Oscilloscope Spectrum Analyzer Front End to 1-2-3 and Other Packages

Features:

- Two Channels on Monitor (Hercules, CGA, EGA, VGA)
20 MHz (40 MS/sec)—Single Channel
10 MHz (20 MS/Sec)—Two Channel
- Two Independent Cursors
- All Setups from Keyboard or File
- Programmable Retrievable Test Routines
- Trigger Modes: Auto, Ch 1/Ch 2, Ext. TTL
- Arithmetic, Integration, Differentiation,
Mean + RMS, FFT—Selectable Windows
- Output to Standard Printers and as ASCII Files
- Available with 4K, 16K, 128K Buffers
- Hot-Line Tech Support

(800) 942-1441 Call for orders or more information
Master Card and VISA honored

GOLEM Golem Systems
1526 Holly Ct., Thousand Oaks, CA 91360

PERFORMANCE+PRICE

Physics and Applications of Amorphous Semiconductors. Proc. Symp., Turin, Italy, September 1987. F. Demicheli, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 411 pp. \$62.00 *hc* ISBN 9971-50-550-9

Physics and Applications of Quantum Wells and Superlattices. NATO ASI Series B: Physics 170. Proc. Inst., Erice, Italy, April 1987. E. E. Mendez, K. von Klitzing, eds. Plenum, New York, 1987. 458 pp. \$89.50 *hc* ISBN 0-306-42823-7

Polymer Motion in Dense Systems. *Springer Proceedings in Physics* 29. Proc. Wksp., Grenoble, France, September 1987. Springer-Verlag, New York, 1988. 307 pp. \$55.90 *hc* ISBN 0-387-19167-4

Proceedings of the IX Winter Meeting on Low Temperature Physics: High Temperature Superconductors. *Progress in High Temperature Superconductivity* 5. Proc. Mtg., Morelos, Mexico, January 1988. J. Heiras, R. A. Barrio, T. Akachi, J. Tagüena, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 295 pp. \$48.00 *hc*

ISBN 9971-50-583-5; \$24.00 *pb* ISBN 9971-50-584-3

Semimetals, Part 1: Graphite and Its Compounds. *Modern Problems in Condensed Matter Sciences* 20.1. N. B. Brandt, S. M. Chudinov, Ya. G. Ponomarev (translated from Russian by O. A. Zilbert). North Holland, New York, 1988. 498 pp. Dfl 320.00 (\$168.50) *hc* ISBN 0-444-87049-0. *Monograph*

Solid Materials. Structure and Bonding 69. J. Augustynski, C. K. Jørgensen, H. D. Lutz, R. Reisfeld. Springer-Verlag, New York, 1988. 134 pp. \$69.50 *hc* ISBN 0-387-18790-1. *Monograph compilation*

Spin Waves and Magnetic Excitations [Parts 1-2]. A. S. Borovik-Romanov, S. K. Sinha, eds. North Holland, New York, 1988. *Modern Problems in Condensed Matter Sciences* 22.1. 521 pp. Dfl 250.00 (\$131.50) *hc* ISBN 0-444-87068-7. *Modern Problems in Condensed Matter Sciences* 22.2. 483 pp. Dfl 250.00 (\$131.50) *hc* ISBN 0-444-87078-4. *Compilation*

Zero-Phonon Lines and Spectral Hole Burning in Spectroscopy and Photochemistry. O. Sild, K. Haller, eds. (translated from Russian). Springer-Verlag, New York, 1988 [1986]. 183 pp. \$41.10 *hc* ISBN 0-387-19214-X. *Compilation*

Elementary-Particle Physics

Experiments, Detectors and Experimental Areas for the Supercollider. Proc. Wksp., Berkeley, Calif., July 1987. R. Donaldson, M. G. D. Gilchrie, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 917 pp. \$89.00 *hc* ISBN 9971-50-473-1

Energy and Environment

Coal Liquid Mixtures. *Institution of Chemical Engineers Symposium* 107; *EFCE Publication* 64. Proc. Symp., Malmö, Sweden, October 1987. T. J. Peirce, ed. Hemisphere, New York, 1988. 409 pp. \$82.50 *hc* ISBN 0-89116-843-5

Engineering Principles and Concepts for Active Solar Systems. Solar Energy Research Institute. Hemisphere, New York, 1988. 295 pp. \$49.50 *hc* ISBN 0-89116-855-9. *Reference*

Handbook of Applied Thermal Design. E. C. Guyer, ed. McGraw-Hill, New York, 1989. 720 pp. \$75.00 *hc* ISBN 0-07-025353-6. *Reference*

Heat Transfer Equipment Design. Proc. Inst., Poona, India, June 1986. R. K. Shah, E. C. Subbarao, R. A. Mashelkar, eds. Hemisphere, New York, 1988. 804 pp. \$159.50 *hc* ISBN 0-89116-729-3

Innovation in Process Energy Utilization. *Institution of Chemical Engineers Symposium* 105; *EFCE Publication* 58. Proc. Symp., Bath, UK, September 1987. A. Rogers, ed. Hemisphere, New York, 1988. 445 pp. \$98.50 *hc* ISBN 0-89116-844-3

Photovoltaic Demonstration Projects. Proc. Mtg., Brussels, Belgium, April 1987.

A NEW APPROACH TO SURFACE SCIENCE.

Burleigh's UHV Inchworm® Motor with the "controlled approach" to in-vacuum positioning.

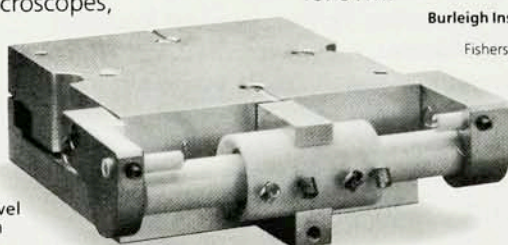
People who do precision positioning inside high vacuum chambers are excited about Burleigh's UHV series, the first in-vacuum linear motor positioning system. Sample or probe positioning for surface science can now be accomplished without cumbersome mechanical feedthroughs. The UHV Series is designed for use in scanning tunneling microscopes,

Auger and ESCA spectrometers, scanning electron microscopes, etc.

- UHV compatible materials.
- In-vacuum operation with remote controller.
- No mechanical feedthrough or bellows.
- A small footprint makes it ideal for close quarters.
- True linear motion.
- Bakeout temperatures to 150°C.
- Micron resolution.

Call or write for more information on Burleigh's new Controlled Approach Systems, specifically for STM.

Burleigh Instruments, Inc.
Burleigh Park,
Fishers, NY 14453 USA
(716) 924-9355
Telex 97-8379



UHV-1110
one inch travel
stage system

burleigh

European Headquarters: Burleigh Instruments, GmbH, West Germany. Tel. (06157) 3047; Telex (841) 4191728

United Kingdom: Burleigh Instruments, Ltd. Tel. (0727) 41347, Telex (851) 94011348

Japanese Representative: Marubun Corp. Tel. (03) 6399871, Telex (781) J22803

*Inchworm is a registered trademark of Burleigh Instruments, Inc.

© Burleigh Instruments, 1988

Circle number 47 on Reader Service Card

W. B. Gillet, J. E. Bates, W. Kaut, eds. Elsevier, New York, 1988. 235 pp. \$45.00 *hc* ISBN 1-85166-190-5

Photovoltaic Safety. *AIP Conference Proceedings 166.* Proc. Conf., Denver, Colo., January 1988. W. Luft, ed. AIP, New York, 1988. 246 pp. \$51.00 (\$41.00, AIP members) *hc* ISBN 0-88318-366-8

Soil Physics. Second edition. T. J. Marshall, J. W. Holmes. Cambridge U.P., New York, 1988. 374 pp. \$89.50 *hc* ISBN 0-521-35270-3; \$29.95 *pb* ISBN 0-521-35817-5. *Monograph text*

Instrumentation

Crystallographic Computing, Vol. 4: Techniques and New Technologies. *Oxford Science Publications, IUCr Crystallographic Symposia 3.* Proc. Sch., Adelaide, Australia, August 1987. N. W. Isaacs, M. R. Taylor, eds. Intl. Union of Crystallography (Oxford U.P.), New York, 1988. 464 pp. \$70.00 *hc* ISBN 0-19-855282-3

Electrostatic Hazards in Powder Handling. *Electronic and Electrical Engineering Research Studies 9.* M. Glor. Wiley, New York, 1988. 171 pp. \$59.95 *hc* ISBN 0-471-92024-X

Instrumentation in Elementary Particle Physics. Proc. Sch., Trieste, Italy, June 1987. C. W. Fabjan, J. E. Pilcher, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 532 pp. \$74.00 *hc* ISBN 9971-50-585-1; \$35.00 *pb* ISBN 9971-50-637-8

Neutron Scattering at a Pulsed Source. Proc. Sch., Oxford, UK, September 1986. R. J. Newport, B. D. Rainford, R. Cywinski, eds. Adam Hilger, Bristol, UK (US dist. Taylor and Francis, Philadelphia), 1988. 413 pp. \$44.00 *hc* ISBN 0-85274-366-1

Spectroscopy of Surfaces. *Advances in Spectroscopy 16.* R. J. H. Clark, R. E. Hester, eds. Wiley, New York, 1988. 488 pp. \$203.00 *hc* ISBN 0-471-91895-4. *Compilation*

Vacuum and Surface Analysis, Vol. 1. Proc. Sem., Shanghai, October 1985. H. Zhong-Yi, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 364 pp. \$55.00 *hc* ISBN 9971-50-459-6

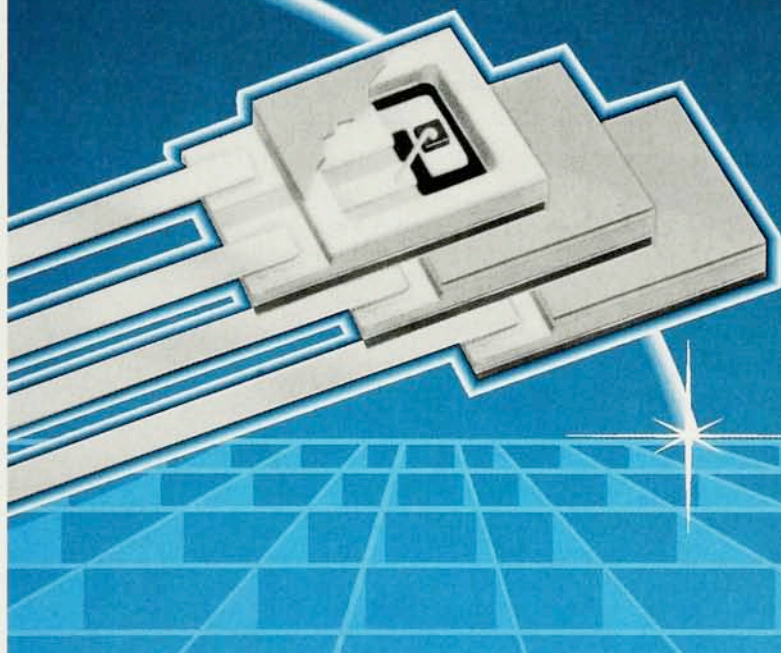
X-Ray Microscopy II. *Springer Series in Optical Sciences 56.* Proc. Symp., Upton, N. Y., August 1987. D. Sayre, M. Howells, J. Kirz, H. Rarback, eds. Springer-Verlag, New York, 1988. 454 pp. \$69.00 *hc* ISBN 0-387-19392-8

Materials Science

Adhesion International 1987. Proc. Mtg., Williamsburg, Va., February 1987. L. H. Sharpe, ed. Gordon and Breach, New York, 1988. 775 pp. \$83.00 *hc* ISBN 0-677-21930-X

Annual Review of Materials Science, Vol. 18. R. A. Huggins, ed. Annual Reviews, Palo Alto, Calif., 1988. 433 pp. \$66.00 US (\$70.00 elsewhere) *hc* ISBN 0-8243-1718-1

Measurable Performers



Lake Shore's Full Line of Temperature Sensors

Look to Lake Shore for a full range of temperature sensors that perform in virtually any measurement and control application—from near absolute zero to well above room temperature.

Our general purpose, high-performance *silicon diodes* are predictable and repeatable from sensor to sensor from 1.4K to 475K. Recognized as the Secondary Standard thermometer, our *germanium resistors* offer accurate, reproducible performance from 0.05K to 100K. Our *carbon-glass resistors* provide temperature measurement and control from 2K to 325K in high magnetic field environments. And for the ultimate in magnetic field independence, our *capacitance sensors* offer stable temperature control with monotonic response from 1.5K to 290K in magnetic fields to 19 Tesla.

Lake Shore also provides a full range of specialty sensors such as MIL-STD, GaAlAs diodes and sensors for use up to 800K including platinum and rhodium-iron RTDs and thermocouples.

We Make Sure Your Sensors Make Sense

Lake Shore provides fully traceable calibration for all types of temperature sensing elements from 0.05K to well above room temperature.

LakeShore



CRYOTRONICS, INC.

64 East Walnut Street, Westerville, Ohio 43081 (614) 891-2243
Telex: 24-5415 Cryotron WTVL Fax: (614) 891-1392

Look to Lake Shore for a complete line of new controllers that offer digital ease with analog stability—in one instrument.

© 1988 Lake Shore Cryotronics, Inc.

Circle number 48 on Reader Service Card

Look to
Lake Shore.
High-
performance
in low
temperature
technology

Basic Mechanisms in Fatigue of Metals. *Materials Science Monographs* 46. Proc. Colloq., Brno, Czechoslovakia, April 1988. P. Lukáš, J. Polák, eds. Elsevier, New York, 1988. 440 pp. Dfl 325.00 (\$171.00) hc ISBN 0-444-98926-9

Boundary Value Problems in Linear Viscoelasticity. J. M. Golden, G. A. C. Graham. Springer-Verlag, New York, 1988. 266 pp. \$72.50 hc ISBN 0-387-18615-8. *Monograph*

Crystal Growth from the Melt. *Crystals: Growth, Properties and Applications* 12. G. Müller. Springer-Verlag, New York,

1988. 138 pp. \$77.60 hc ISBN 0-387-18603-4

Crystals in Gels and Liesegang Rings. H. K. Henisch. Cambridge U.P., New York, 1988. 197 pp. \$54.50 hc ISBN 0-521-34503-0. *Monograph*

Deposition and Growth: Limits for Microelectronics. *AIP Conference Proceedings* 167; *American Vacuum Society Series* 4. Proc. Conf., Anaheim, Calif., November 1987. G. W. Rubloff, ed. AIP, New York, 1988. 388 pp. \$58.75 (\$47.00, AIP members) hc ISBN 0-88318-367-6

Distillation and Absorption 1987, Vols. 1-2. *Institution of Chemical Engineers Symposium 104; EFCE Publication* 62. Proc. Symp., Brighton, UK, September 1987. G. G. Haselden, ed. Hemisphere, New York, 1988. 1184 pp. \$197.50 hc ISBN 0-89116-840-0

Elastic-Plastic Problems. B. D. Annin, G. P. Cherepanov (translated from Russian by J. I. Ghogel). Am. Soc. Mech. Eng. P., New York (Nauka, Novosibirsk, USSR, 1988 [1983]). 250 pp. \$39.00 (\$31.20, ASME members) hc ISBN 0-7918-0000-8. *Monograph text*

Emerging Technologies for In Situ Processing. Proc. Wksp., Cargèse, France, May 1987. D. J. Ehrlich, V. Tran Nguyen, eds. Nijhoff (Kluwer), Boston, 1988. 290 pp. Dfl 150.00 (\$79.00) hc ISBN 90-247-3733-8

Graphite Fibers and Filaments. *Springer Series in Materials Science* 5. M. S. Dresselhaus, G. Dresselhaus, K. Sugihara, I. L. Spain, H. A. Goldberg. Springer-Verlag, New York, 1988. 382 pp. \$74.00 hc ISBN 0-387-18938-6. *Monograph*

Growth of Crystals, Vol. 15. E. I. Givargizov, S. A. Grinberg, eds. (translated from Russian by J. E. S. Bradley). Consultants Bureau (Plenum), New York, 1988 [1986]. 230 pp. \$75.00 hc ISBN 0-306-18115-0. *Compilation*

Handbook on the Physics and Chemistry of Rare Earths, Vol. 11: Two-Hundred-Year Impact of Rare Earths on Science. K. A. Gschneidner, L. Eyring, eds. North Holland, New York, 1988. 594 pp. Dfl 350.00 (\$184.25) hc ISBN 0-444-87080-6. *Compilation*

Inelastic Mesomechanics. *Series in Theoretical and Applied Mechanics* 5. V. Kafka. World Scientific, Singapore (Teaneck, N. J.), 1987. 162 pp. \$34.00 hc ISBN 9971-50-505-3. *Monograph*

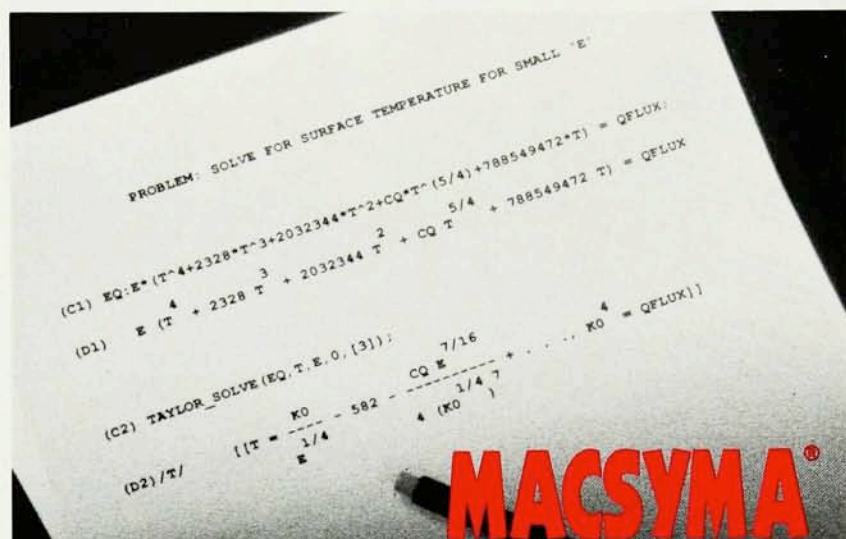
Interfaces in Polymer, Ceramics and Metal Matrix Composites. Proc. Conf., Cleveland, Ohio, June 1988. H. Ishida, ed. Elsevier, New York, 1988. 780 pp. \$120.00 hc ISBN 0-444-01329-6

Natural Rubber Science and Technology. A. D. Roberts, ed. Oxford U.P., New York, 1988. 1136 pp. \$150.00 hc ISBN 0-19-855225-4. *Compilation*

Nuclear Physics Applications on Materials Science. *NATO ASI Series E: Applied Sciences* 144. Proc. Inst., Viana do Castelo, Portugal, September 1987. E. Recknagel, J. C. Soares, eds. Kluwer, Boston, 1988. 458 pp. Dfl 250.00 (\$136.00) hc ISBN 90-247-3703-6

The Physical Properties of Liquid Metals. T. Iida, R. I. L. Guthrie. Clarendon (Oxford U.P.), New York, 1988. 288 pp. \$75.00 hc ISBN 0-19-856331-0. *Monograph text*

Physics of Materials. *WSPC-COSTED Series in Emerging Technology.* Proc. Mtg., Madras, November 1985 and December 1986. S. Radhakrishna, K. Srinivasan, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 464 pp. \$64.00 hc ISBN 9971-50-398-0



...the most versatile math software ever built

MACSYMA does for you what no other software can; it saves you days or weeks of valuable time by automating your complex mathematical computations — symbolically and numerically.

MACSYMA is at work today throughout the world, solving problems in engineering, science, and economics. It has the expertise to select which techniques to use in many situations and implements them: in algebra and trigonometry, calculus, differential and integral equations, Laplace and Fourier transforms, vector and tensor calculus, and much more. And within these areas MACSYMA has greater depth than any other system.

You can run MACSYMA on Apollo, Sun, VAX, and Symbolics systems. You can visualize results with 2-D and 3-D graphics. You can even mix MACSYMA code with Fortran or 'C', and generate code to use in your existing programs.

Call for your copy of the MACSYMA Quick Reference Card, and see how easily you can start automating symbolic and numerical mathematics with a few simple commands.

1-800-MACSYMA In Massachusetts, call (617) 221-1250.

symbolics, Inc.

Computer Aided Mathematics Group
8 New England Executive Park East
Burlington, Massachusetts 01803
617-221-1250

MACSYMA is a registered trademark and Symbolics is a trademark of Symbolics, Inc. VAX and MicroVAX are trademarks of Digital Equipment Corp. SUN is a trademark of SUN Microsystems, Inc. Apollo is a trademark of Apollo Computer, Inc. Copyright 1988, Symbolics, Inc.

Circle number 49 on Reader Service Card

Quasicrystalline Materials. Proc. Wksp., Grenoble, France, March 1988. C. Janot, J. M. Dubois, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 434 pp. \$58.00 hc ISBN 9971-50-631-9

Recent Developments in Surface Acoustic Waves. *Springer Series on Wave Phenomena 7.* Proc. Colloq., Nottingham, UK, September 1987. D. F. Parker, G. A. Maugin, eds. Springer-Verlag, New York, 1988. 351 pp. \$62.70 hc ISBN 0-387-19401-0

The Si-SiO₂ System. *Materials Science Monographs 32.* P. Balk, ed. Elsevier, New York, 1988. 356 pp. Dfl 220.00 (\$115.75) hc ISBN 0-444-42603-5. *Compilation*

The Theory of Polymer Dynamics. *International Series of Monographs on Physics 73.* M. Doi, S. F. Edwards. Clarendon (Oxford U. P.), New York, 1986. 391 pp. \$78.50 hc ISBN 0-19-851976-1. *Monograph*

Thermal Conductivity 19. Proc. Conf., Cookeville, Tenn., October 1985. D. W. Yarbrough, ed. Plenum, New York, 1988. 565 pp. \$115.00 hc ISBN 0-306-42787-7

Thermoplastic Elastomers: A Comprehensive Review. N. R. Legge, G. Holden, H. E. Schroeder, eds. Carl Hanser, Munich, FRG (US dist. Oxford U. P., New York), 1987. 574 pp. \$109.00 hc ISBN 0-19-520719-X. *Monograph compilation*

Ultrastructure Processing of Advanced Ceramics. Proc. Conf., San Diego, Calif., February 1987. J. D. Mackenzie, D. R. Ulrich, eds. Wiley, New York, 1988. 1014 pp. \$95.00 hc ISBN 0-471-62416-0

Mathematical Methods

A Course in Number Theory. H. E. Rose. Clarendon (Oxford U. P.), New York, 1988. 354 pp. \$59.95 hc ISBN 0-19-853262-8; \$32.50 pb ISBN 0-853261-X. *Text*

Fibre Bundles: Their Use in Physics. Proc. Conf., Trieste, Italy, April 1987. J. P. Ezin, A. Verjovsky, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 175 pp. \$34.00 hc ISBN 9971-50-644-0

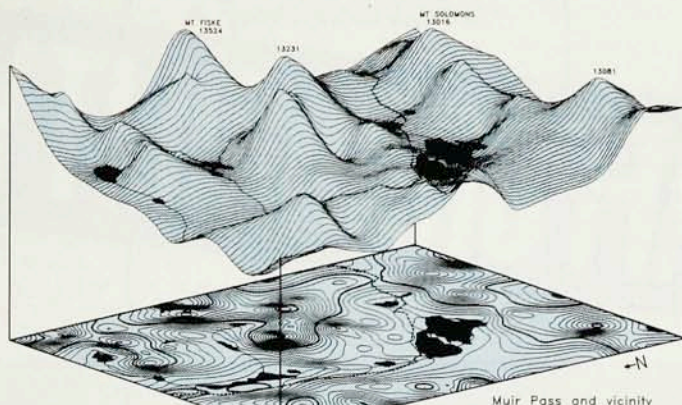
Field Theory Handbook: Including Coordinate Systems, Differential Equations and Their Solutions. Second edition. P. Moon, D. E. Spencer. Springer-Verlag, New York, 1988. 236 pp. \$39.50 pb ISBN 0-387-18430-9

Finite Dimensional Integrable Nonlinear Dynamical Systems. Proc. Wksp., Johannesburg, South Africa, January 1988. P. G. L. Leach, W. H. Steeb, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 346 pp. \$52.00 hc ISBN 9971-50-541-X

Fourier Analysis. J. S. Walker. Oxford U. P., New York, 1988. 440 pp. \$49.95 hc ISBN 0-19-504300-6. *Text*

Fractals. *Physics of Solids and Liquids.* J. Feder. Plenum, New York, 1988. 283 pp. \$49.50 hc ISBN 0-306-42851-2. *Monograph*

A NEW DIMENSION IN GRAPHICS



Plotworks revolutionizes its PLOT88 package to include three-dimensional contour maps at a fixed level. You can now project your two-dimensional contours into the third dimension for a unique visualization of your data.

PLOT88 is a library of more than 50 subroutines to construct grids, contour maps, and mesh drawings that outputs to printers, plotters and displays. A device-independent graphics package, it includes PLOT, SYMBOL, AXIS and LINE—just to name a few.

Now your mainframe graphics programs can run on your personal computer at your convenience and at a fraction of the cost.

**Call (619) 457-5090 today
for a free poster**

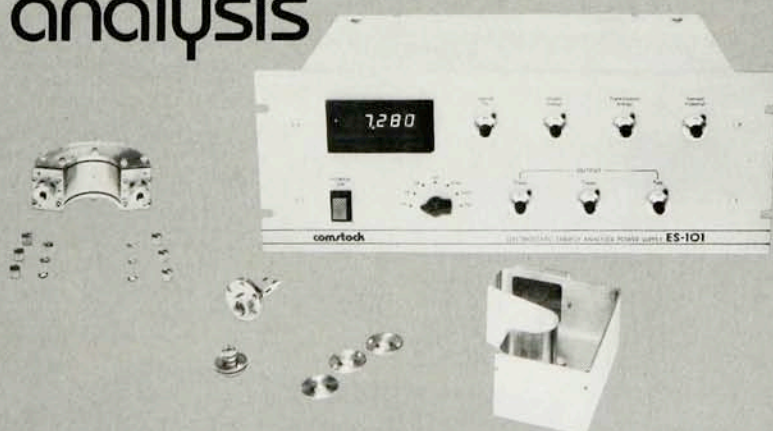
PLOTWORKS, Inc.

**Department P-10
16440 Eagles Crest Road
Ramona, CA 92065**

"Toolmakers for the Information Age"

Circle number 50 on Reader Service Card

electrostatic energy analysis



The Comstock System III Electrostatic Energy Analysis System includes Double Focusing Electrostatic Energy Analyzer, Dual Channelplate Detector, Einzel Lens, Analyzer Power Supply and Electrostatic and Magnetic Shield and Mounting Boxes. **All the major components you need for a state-of-the-art Electrostatic Energy Analysis System.**

comstock

P.O. BOX 199 OAK RIDGE, TENNESSEE 37831 (615)483-7690

Circle number 51 on Reader Service Card

PHYSICS TODAY

FEBRUARY 1989

Leybold Inficon presents
another breakthrough
in RGA technology:

AFFORDABILITY

Leybold Inficon has dramatically reduced the price of the *Inficon Quadrex 100 and 200 RGAs*, making them more affordable than ever before.

So now you can monitor, diagnose, verify and control your gas processes with these industry-leading Inficon Quadrex RGAs, which are both easy-to-read and easy-to-operate.

To find out more, simply contact your local Leybold Sales Engineer or call 1-800-448-3400 ext. 402.



LEYBOLD INFICON

LEYBOLD INFICON INC
6500 Fly Road
East Syracuse, N.Y. 13057
(315) 434-1100

©1988 Leybold Inficon

Circle number 52 on Reader Service Card

I'M REALLY STRUCK BY OXFORD'S
NEW CRYOGENIC CONTROLLER...
EXCLUSIVE 3-SENSOR INPUT & DISPLAY...
256-STEP LINEARIZATION, 3-TERM
CONTROL...DIGITAL PROGRAMING AND
READOUT...



SMASHING,
THAT ITC-4!

Everyone's
talking about
our new
temperature
controller.



OXFORD[®]

A Member of the Oxford Instruments Group plc

Oxford Instruments North America Inc.
3A Alfred Circle, Bedford, MA 01730, USA
Tel: (617) 275-4350

Oxford Instruments Limited
Osney Mead, Oxford, OX2 0DX, England
Tel: (0865) 241456

Circle number 53 on Reader Service Card

Fractals, Quasicrystals, Chaos, Knots and Algebraic Quantum Mechanics. *NATO ASI Series C: Mathematical and Physical Sciences* 235. Proc. Wksp., Acquafredda di Maratea, Italy, October 1987. A. Amann, L. Cederbaum, W. Gans, eds. Kluwer, Boston, 1988. 331 pp. Dfl 160.00 (\$89.00) hc ISBN 90-277-2750-3

Geometry of Supersymmetric Gauge Theories. *Lecture Notes in Physics* 302. F. Gieres. Springer-Verlag, New York, 1988. 189 pp. \$20.60 hc ISBN 0-387-19080-5

GLIM: An Introduction. M. J. R. Healy. Clarendon (Oxford U. P.), New York, 1988. 130 pp. \$39.95 hc ISBN 0-19-852213-4. *Computing text; linear models*

Global Bifurcation of Periodic Solutions with Symmetry. *Lecture Notes in Mathematics* 1309. B. Fiedler. Springer-Verlag, New York, 1988. 144 pp. \$17.30 pb ISBN 0-387-19234-4

Global Bifurcations and Chaos: Analytical Methods. *Applied Mathematical Sciences* 73. S. Wiggins. Springer-Verlag, New York, 1988. 494 pp. \$49.95 hc ISBN 0-387-96775-3. *Monograph text*

Infinite-Dimensional Dynamical Systems in Mechanics and Physics. *Applied Mathematical Sciences* 68. R. Temam. Springer-Verlag, New York, 1988. 500 pp. \$64.00 hc ISBN 0-387-96638-2. *Monograph*

Information and Self-Organization: A Macroscopic Approach to Complex Systems. *Springer Series in Synergetics* 40. H. Haken. Springer-Verlag, New York, 1988. 196 pp. \$59.50 hc ISBN 0-387-18639-5. *Monograph*

Information-Based Complexity. *Computer Science and Scientific Computing*. J. F. Traub, G. W. Wasilkowski, H. Wozniakowski. Academic, San Diego, Calif., 1988. 523 pp. \$64.50 hc ISBN 0-12-697545-0. *Monograph*

Kac-Moody and Virasoro Algebras: A Reprint Volume for Physicists. *Advanced Series in Mathematical Physics* 3. P. Goddard, D. Olive, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 586 pp. \$78.00 hc ISBN 9971-50-419-7; \$37.00 pb ISBN 9971-50-420-0

Lectures on the Theory of Integration. *Series in Real Analysis* 1. R. Henstock. World Scientific, Singapore (Teaneck, N. J.), 1988. 206 pp. \$53.00 hc ISBN 9971-50-450-2; \$28.00 pb ISBN 9971-50-451-0

Manifolds, Tensor Analysis and Applications. Second edition. *Applied Mathematical Sciences* 75. R. Abraham, J. E. Marsden, T. Ratiu. Springer-Verlag, New York, 1988. 654 pp. \$59.80 hc ISBN 0-387-96790-7. *Text*

Matched Asymptotic Expansions: Ideas and Techniques. *Applied Mathematical Sciences* 76. P. A. Lagerstrom. Springer-Verlag, New York, 1988. 250 pp. \$39.95 hc ISBN 0-387-96811-3. *Monograph text*

Mathematical Modeling in Combustion Science. *Lecture Notes in Physics* 299. Proc. Conf., Juneau, Alaska, August

1987. J. D. Buckmaster, T. Takeno, eds. Springer-Verlag, New York, 1988. 168 pp. \$24.20 hc ISBN 0-387-19181-X

Mathematical Physics. *Mathematics Studies 152.* R. Carroll. North Holland, New York, 1988. 399 pp. Dfl 180.00 (\$94.75) hc ISBN 0-444-70443-4. *Graduate text; mathematical formalism*

Methods and Applications of Nonlinear Dynamics. *ACIF Series 7.* Proc. Sch., Medellín, Colombia, September 1986. A. W. Sáenz, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 283 pp. \$48.00 hc ISBN 9971-50-333-6

Multiphase Averaging for Classical Systems: With Applications to Adiabatic Theorems. *Applied Mathematical Sciences 72.* P. Lochak, C. Meunier. Springer-Verlag, New York, 1988. 360 pp. \$39.80 pb ISBN 0-387-96778-8. *Monograph text*

Nonlinear Regression Analysis and Its Applications. *Wiley Series in Probability and Mathematical Statistics.* D. M. Bates, D. G. Watts. Wiley, New York, 1988. 365 pp. \$39.95 hc ISBN 0-471-81643-4. *Text*

Principles of Statistical Radiophysics, Vol. 2: Correlation Theory of Random Processes. S. M. Rytov, Yu. A. Kravtsov, V. I. Tatarskii (translated from Russian by A. P. Repeyev). Springer-Verlag, New York, 1988 [Nauka, Moscow, 1976]. 232 pp. \$79.00 hc ISBN 0-387-16186-4. *Text on wave motion*

Renormalization of Quantum Field Theories with Non-linear Field Transformations. *Lecture Notes in Physics 303.* Proc. Wksp., Tegernsee, FRG, February 1987. P. Breitenlohner, D. Maison, K. Sibold, eds. Springer-Verlag, New York, 1988. 239 pp. \$24.20 hc ISBN 0-387-19263-8

Solution of Variational Inequalities in Mechanics. *Applied Mathematical Sciences 66.* I. Hlaváček, J. Haslinger, J. Nečas, J. Lovíšek (translated from Slovak by J. Jarník). Springer-Verlag, New York, 1988. 275 pp. \$42.80 pb ISBN 0-387-96597-1. *Text*

The Spinorial Chessboard. *Trieste Notes in Physics.* P. Budinich, A. Trautman. Springer-Verlag, New York, 1988. 128 pp. \$27.50 pb ISBN 0-387-19078-3

The Theory of Pseudo-Rigid Bodies. *Springer Tracts in Natural Philosophy 33.* H. Cohen, R. G. Muncaster. Springer-Verlag, New York, 1988. 183 pp. \$69.80 hc ISBN 0-387-96635-8. *Monograph*

Wave Propagation in Solids and Fluids. J. L. Davis. Springer-Verlag, New York, 1988. 386 pp. \$75.00 hc ISBN 0-387-96739-7. *Text*

Nuclear Physics

Dynamics of Collective Phenomena in Nuclear and Subnuclear Long Range Interactions in Nuclei. Proc. Symp., Bad Honnef, FRG, May 1987. P. David, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 553 pp. \$78.00 hc ISBN 9971-50-598-3

Neutron Cross Sections, Vol. 2: Neutron Cross Section Curves. V. McLane, C. L. Dunford, P. F. Rose. Academic, San Diego, Calif., 1988. 806 pp. \$59.50 hc ISBN 0-12-484220-8. *Reference; 4th edition of BNL-325*

Nuclear and Particle Physics Source Book. *Science Reference Series.* S. Parker, ed. McGraw-Hill, New York, 1988. 529 pp. \$45.00 hc ISBN 0-07-045509-0

Nuclear Phase Transitions and Heavy Ion Reactions. Proc. Sch., Changchun, China, June 1986. T. T. S. Kuo, D. Strottman, S. S. Wu, eds. World Scientific, Sin-

gapore (Teaneck, N. J.), 1987. 467 pp. \$75.00 hc ISBN 9971-50-223-2

Nucleon Momentum and Density Distributions in Nuclei. *Oxford Studies in Nuclear Physics 9.* A. N. Antonov, P. E. Hodgson, I. Zh. Petkov. Clarendon (Oxford U.P.), New York, 1988. 165 pp. \$64.00 hc ISBN 0-19-851726-2. *Monograph*

Perspectives in Nuclear Physics at Intermediate Energies. Proc. Wksp., Trieste, Italy, May 1987. S. Boffi, C. Ciofi degli Atti, M. M. Giannini, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 696 pp. \$75.00 hc ISBN 9971-50-487-1

High Voltage 20¢/Volt

The PS300 programmable power supply series provides up to 5kV at 25 Watts for laboratory and ATE applications. These supplies offer a wide range of features including programmable current and voltage limits, selectable overload response, and short circuit protection.

Dual LED displays monitor both output current and voltage, while a third display allows error-free front panel entry. A full GPIB interface is available for ATE systems.

The combination of features, price, and performance make the PS300 series the perfect choice for laboratory or systems use.

\$995

PS350	0 to 5kV
PS325	0 to 2.5kV
PS310	0 to 1.25 kV

25 Watts output power
0.001% regulation
0.1% accuracy
Low output ripple
Dual polarity
Voltage and current readouts

GPIB Interface \$495



Stanford Research Systems

1290 D Reamwood Avenue, Sunnyvale, CA 94089
TEL (408) 744-9040 FAX 4087449049 TLX 706891 SRS UD

3 AXIS FLUXGATE MAGNETOMETER SYSTEMS



APS520A

APS520

- SIMULTANEOUS MEASUREMENT AND DISPLAY OF MAGNETIC FIELDS ALONG THREE ORTHOGONAL AXES
- LOW NOISE LEVEL OF 2×10^{-11} T
- LOW DRIFT—LESS THAN 10^{-9} T/°C
- SMALL PROBE SIZE—1"x1"x3 1/2"
- OFFSET CAPABILITY UP TO 2×10^{-4} T WITH APS520A MODEL
- SENSORS FOR OPERATION DOWN TO 4°K AVAILABLE

Call us to discuss your specific application!

A P P L I E D
P H Y S I C S
S Y S T E M S

415-965-0500

897 Independence Ave.
Mountain View, CA 94043

Circle number 55 on Reader Service Card

Laboratory Friendly Vacuum Fittings



Building-Block Versatility For Rough and Medium Vacuum

- ☐ International Standard KF® and ISO Port Sizes
- ☐ Aluminum and Stainless Steel Bodies
- ☐ Pressure Range To 1×10^{-8} mbar ltr/sec
- ☐ DIN, ASA, Metal Seal Configurations Available

**Get the Facts
NOW! Ask for our
New Catalog.**



LEYBOLD
VACUUM PRODUCTS, INC.
5700 Mellon Road
Export, PA 15632
412 327-5700 Ext. 528

Circle number 56 on
Reader Service Card

Physics of Intermediate and High Energy Heavy Ion Reactions. Wksp., Kraków, Poland, September 1987. M. Kutschera, M. Ploszajczak, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 253 pp. \$48.00 hc ISBN 9971-50-498-7

Symposium of North Eastern Accelerator Personnel. Proc. Conf., Tallahassee, Fla., September 1987. K. R. Chapman, ed. World Scientific, Singapore (Teaneck, N. J.), 1988. 469 pp. \$58.00 hc ISBN 9971-50-525-8

The Variety of Nuclear Shapes. Proc. Conf., Aghia Pelaghia, Greece, June 1987. J. D. Garrett, C. A. Kalfas, G. Anagnostatos, E. Kossionides, R. Vlastou, eds. World Scientific, Singapore (Teaneck, N. J.), 1988. 558 pp. \$75.00 hc ISBN 9971-50-416-2

Workshop on Relations Between Structure and Reactions in Nuclear Physics. Proc. Wksp., Philadelphia, September 1986. D. H. Feng, M. Vallieres, B. H. Wienthal, eds. World Scientific, Singapore (Teaneck, N. J.), 1987. 416 pp. \$64.00 hc ISBN 9971-50-264-X

Optics

Progress in Optics, Vol. 25. E. Wolf, ed. North Holland, New York, 1988. 444 pp. Dfl 185.00 (\$97.25) hc ISBN 0-444-87076-8. *Monograph compilation*

Progress in Optics, Vol. 26. E. Wolf, ed. North Holland, New York, 1988. 414 pp. Dfl 205.00 (\$108.00) hc ISBN 0-444-87096-2. *Monograph compilation*

Society and Government

At Work in the Fields of the Bomb. R. Del Tredici. Harper & Row, New York, 1988. 192 pp. \$15.95 pb ISBN 0-06-096164-3. *Lay readers; photo album and interviews*

ATBMs and Western Security: Missile Defenses for Europe. D. L. Hafner, J. Roper, eds. Ballinger, Cambridge, Mass., 1988. 325 pp. \$34.95 hc ISBN 0-88730-232-7. *Monograph compilation*

The Business of Science: Winning and Losing in the High-Tech Age. S. Ramo. Hill and Wang (Farrar, Straus and Giroux), New York, 1988. 289 pp. \$19.95 hc ISBN 0-8090-3255-4. *Monograph*

China Builds the Bomb. *ISIS Studies in International Policy.* J. W. Lewis, X. Litai. Stanford U. P., Stanford, Calif., 1988. 329 pp. \$29.50 hc ISBN 0-8047-1452-5. *Historical monograph; foreword by S. Drell*

From Protest to Policy: Beyond the Freeze to Common Security. P. Solo. Ballinger, Cambridge, Mass., 1988. 214 pp. \$19.95 hc ISBN 0-88730-112-6. *Monograph; lay readers*

Information Mechanics: Transformation of Information in Management, Command, Control and Communication. *Ellis Horwood Series in Mathematics and Its Applications.* B. Conolly, J. G. Pierce. Wiley, New York, 1988. 174 pp.

\$44.95 hc ISBN 0-470-21136-9. *Monograph on (military) operations research*

SDI: Technology, Survivability and Software. Office of Technology Assessment. Princeton U. P., Princeton, N. J., 1988. 281 pp. \$45.00 hc ISBN 0-691-07747-9; \$10.95 pb ISBN 0-691-02270-4. *Report; originally published by Government Printing Office in limited quantity*

Toward a Comprehensive Test Ban. S. Fetter. Ballinger, Cambridge, Mass., 1988. 206 pp. \$29.95 hc ISBN 0-88730-281-5. *Monograph*

The US in Space: Issues and Policy Choices for a New Era. E. S. Muskie, ed. Center for Natl. Policy P., Washington, D. C., 1988. 82 pp. \$16.75 hc ISBN 0-944237-23-1; \$7.75 pb ISBN 0-944237-24-X. *Compilation*

Statistical Physics

From Chemical to Biological Organization. *Springer Series in Synergetics* 39. Proc. Mtg., Dortmund, FRG, March 1987. M. Markus, S. C. Müller, G. Nicolis, eds. Springer-Verlag, New York, 1988. 358 pp. \$62.20 hc ISBN 0-387-19264-6

Neural Information Processing Systems. Proc. Conf., Denver, Colo., November 1987. D. Z. Anderson, ed. AIP, New York, 1988. 871 pp. \$77.50 (\$62.00, AIP members) hc ISBN 0-88318-569-5

Recent Advances in Statistical Physics. Proc. Symp., Calcutta, December 1981. B. Datta, M. Dutta, eds. World Scientific, Singapore (Teaneck, N. J.), 1987. 164 pp. \$44.00 hc ISBN 9971-50-369-7

Statistical Mechanics. B. K. Agarwal, M. Eisner. Wiley, New York, 1988. 270 pp. \$29.95 hc ISBN 0-470-20866-X. *Text*

Statistical Physics. Second edition. *Manchester Physics Series.* F. Mandl. Wiley, New York, 1988. 385 pp. \$27.95 pb ISBN 0-471-91533-5. *Text*

Stochastic Analysis and Related Topics. *Lecture Notes in Mathematics* 1316. Proc. Wksp., Silivri, Turkey, July 1986. H. Kozzioglu, A. S. Ustunel, eds. Springer-Verlag, New York, 1988. 371 pp. \$34.80 pb ISBN 0-387-19315-4

Transport Properties of Ions in Gases. E. A. Mason, E. W. McDaniel. Wiley, New York, 1988. 560 pp. \$54.95 hc ISBN 0-471-88385-9. *Monograph*

Texts and Popularizations

Archimedes' Revenge: The Joys and Perils of Mathematics. P. Hoffman. Norton, New York, 1988. 285 pp. \$17.95 hc ISBN 0-393-02522-5. *Lay readers*

Creation: The Story of the Origin and Evolution of the Universe. B. Parker. Plenum, New York, 1988. 297 pp. \$22.95 hc ISBN 0-306-42952-7. *Lay readers*

The Dark Matter: Contemporary Science's Quest for the Mass Hidden in Our Universe. W. Tucker, K. Tucker. Morrow, New York, 1988. 254 pp. \$16.95 hc ISBN 0-688-06112-5. *Lay readers*

The Dark Side of the Universe: A Scientist Explores the Mysteries of the Cosmos. J. Trefl. Scribner's, New York, 1988. 197 pp. \$17.95 hc ISBN 0-684-18795-7. *Lay readers*

The Emergence of Life: Darwinian Evolution from the Inside. S. Fox. Basic Books, New York, 1988. 208 pp. \$17.95 hc ISBN 0-465-01925-0. *Lay readers*

Extinction. *Scientific American Library* 20. S. M. Stanley. Scientific American Books (Freeman), New York, 1987. 242 pp. \$32.95 hc ISBN 0-7167-5014-7. *Lay readers*

Fields and Electrodynamics: A Computer-Compatible Introduction. P. B. Visscher. Wiley, New York, 1988. 544 pp. \$50.40 hc ISBN 0-471-82884-X. *Student text; price correction*

First Light: The Search for the Edge of the Universe. R. Preston. Atlantic Monthly P., New York, 1987. 263 pp. \$18.95 hc ISBN 0-87113-200-1. *Lay readers*

Flanagan's Version: A Spectator's Guide to Science on the Eve of the 21st Century. D. Flanagan. Knopf, New York, 1988. 272 pp. \$18.95 hc ISBN 0-394-55547-3. *Lay readers*

Gravity's Lens: Views of the New Cosmology. N. Cohen. Wiley, New York, 1988. 237 pp. \$19.95 hc ISBN 0-471-63282-1. *Lay readers*

Infinite in All Directions. F. Dyson. Harper and Row, New York, 1988. 321 pp. \$19.95 hc ISBN 0-06-039081-6. *Lay readers; based on 1985 Gifford Lectures (Aberdeen, UK)*

Introduction to the Structure of Matter: A Course in Modern Physics. J. J. Brehm, W. J. Mullin. Wiley, New York, 1989. 912 pp. \$52.65 hc ISBN 0-471-60531-X. *Student text; price correction*

Inventing Reality: Physics As Language. B. Gregory. Wiley, New York, 1988. 230 pp. \$18.95 hc ISBN 0-471-61388-6. *Lay readers*

La Réaction Créatrice: Dynamique des Systèmes Chimiques. C. Vidal, H. Lemarchand; préface de P. G. de Gennes. Hermann, Paris, 1988. 301 pp. 180 FF pb ISBN 2-7056-6077-1. *French; chemical chaos*

Mathematics and the Unexpected. I. Ekeland. U. of Chicago P., Chicago, 1988. 146 pp. \$19.95 hc ISBN 0-226-19989-4. *Lay readers*

The Media Lab: Inventing the Future at MIT. S. Brand. Penguin, New York, 1988 [1987]. 285 pp. \$10.00 pb ISBN 0-14-009701-5. *Lay readers*

Mirror Matter: Pioneering Antimatter Physics. *Wiley Science Editions.* R. L. Forward, J. Davis. Wiley, New York, 1988. 262 pp. \$18.95 hc ISBN 0-471-62812-3. *Lay readers*

No Way: The Nature of the Impossible. P. J. Davis, D. Park, eds. Freeman, New York, 1987. 325 pp. \$10.95 pb ISBN 0-7167-1966-5. *Essays; lay readers*

A Passion for Science. L. Wolpert, A. Richards. Oxford U.P., New York, 1988. 206 pp. \$21.95 hc ISBN 0-19-854213-5. *BBC radio interviews; lay readers*

QED: The Strange Theory of Light and Matter. R. P. Feynman. Princeton U.P., Princeton, N.J., 1988 [1985]. 158 pp. \$8.95 pb ISBN 0-691-02417-0. *Lay readers*

Relatively Speaking: Relativity, Black Holes and the Fate of the Universe. E. Chaisson. Norton, New York, 1988. 254 pp. \$18.95 hc ISBN 0-393-02536-5. *Lay readers*

The Supernova Story. L. A. Marschall. Plenum, New York, 1988. 296 pp. \$22.95 hc ISBN 0-306-42955-1. *Lay readers*

Superstrings: A Theory of Everything? P. C. W. Davies, J. Brown, eds. Cambridge U.P., New York, 1988. 234 pp. \$39.50 hc ISBN 0-521-35462-5; \$10.95 pb ISBN 0-521-35741-1. *Lay readers*

"What Do You Care What Other People Think?": Further Adventures of a Curious Character. R. P. Feynman. Norton, New York, 1988. 255 pp. \$17.95 hc ISBN 0-393-02659-0. *Lay readers*

The World Within the World. J. D. Barrow. Oxford U.P., New York, 1988. 398 pp. \$24.95 hc ISBN 0-19-851979-6. *Lay readers*

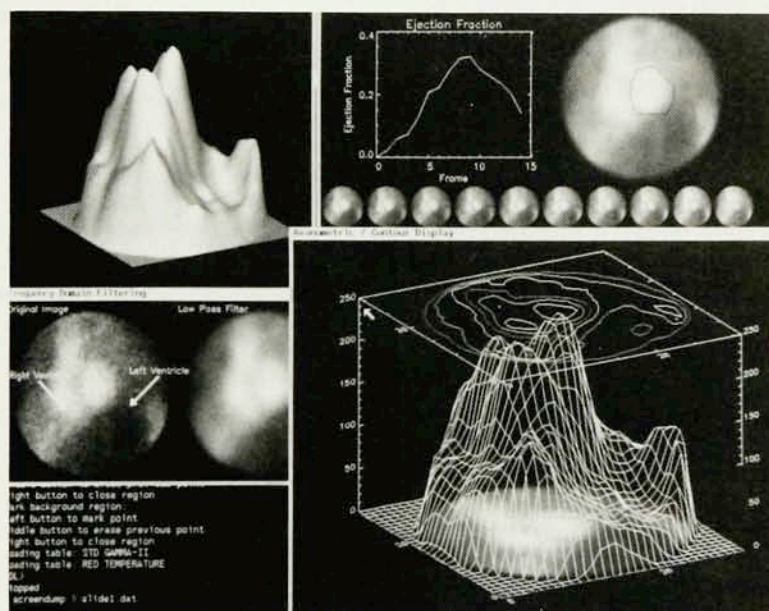
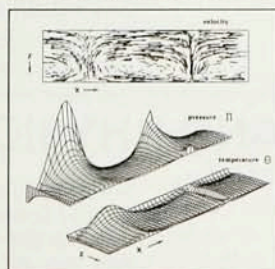


Image produced using Sun version of IDL

IDLTM INTERACTIVE SOFTWARE FOR SCIENTIFIC RESEARCH

IDL takes you there. It is the ideal tool for your advanced research—a completely interactive analysis and visualization package for the physical sciences. IDL combines data analysis, reduction, scientific graphics, and image processing in a fast, powerful, easy-to-use system. Solve problems rapidly with IDL's efficient, array-oriented language and comprehensive library of procedures—optimized for handling large data sets on today's computers and workstations. IDL is used by innovative researchers at the most prestigious institutions around the world. IDL is compatible with VAX®/VMS® and is now available in a new enhanced version for Sun® Workstations. **Take IDL on your next exploration. Call or write:**



RSI RESEARCH SYSTEMS, INC.

2021 Albion St. Denver, CO 80207 (303) 399-1326

VAX/VMS are registered trademarks of Digital Equipment Corporation. Sun Workstation is a registered trademark of Sun Microsystems, Inc.

Circle number 57 on Reader Service Card