

author goes back and forth between theory and experiments mainly involving transport and nuclear magnetic resonance respectively. The mysteries of the normal state are explained away in terms of electron-electron scattering due to antiferromagnetic spin fluctuations within the Fermi liquid. However, it is not clear whether the author believes that the theory, at the present level, can explain the experiments completely or whether some puzzles remain.

The author observes that "because of the strong on-site repulsion, the symmetry of the pairing state is not the s -wave symmetry but an anisotropic symmetry, such as the p - and d -wave symmetry." But he fails to mention the definitive experiments—of Chang Tsuei and John Kirtley and, independently, Dale van Harlingen and coworkers—that led to such a conclusion. Yamada also claims that, "from the theoretical point of view the superconductivity in strongly correlated electron systems can be discussed on the basis of the Dyson-Gorkov equation which corresponds to the Eliashberg equation based on the vertex function arising from the electron-electron interactions in place of the usual electron-phonon interactions." Does the Migdal theorem apply and thus justify such a conclusion? Yamada hardly discusses this point, which is the cornerstone for the applicability of the Eliashberg theory.

Admittedly, it is difficult, though not impossible, to write a book on topics such as heavy fermions and high- T_c superconductivity, topics that are still in a state of development. *Electron Correlation in Metals* contains detailed calculations but not enough discussion on the meaning of those calculations. In what regimes are the given approaches valid? What valuable explanation about the data can such methods give? What are the limitations? What are some of the other promising approaches? A thorough examination along those lines would have been desirable and valuable.

I was initially happy to see that some of the fascinating new developments of high-temperature superconductors, organic superconductors, heavy fermions, and unconventional superconductivity in the ruthenates were making their way into a textbook. The book does fill a gap by introducing readers to a variety of more recent topics in correlated-electron systems. Alexander Hewson's *The Kondo Problem to Heavy Fermions* (Cambridge U. Press, 1993) essentially covers the same material found in Yamada's first four chapters, but

with greater emphasis on experiments and with in-depth discussion of scaling and renormalization-group techniques, exact solutions, and $1/N$ methods. Yamada sacrifices those topics to discuss some newer ones instead. Yet overall I was disappointed by the depth, or lack thereof, of the author's treatment.

Electron Correlation in Metals could serve as a supplementary reference in a graduate-level, special-topics course in condensed matter theory. When confronting a new problem, it is often instructive to take a first stab at it using perturbative techniques—and for that, Yamada is indeed an expert. But thereafter, one must take a dispassionate look at the experimental data to ascertain whether the theory actually works. On that score, the reader would have to complement Yamada's book with review articles and texts that examine more modern non-perturbative techniques, phenomenology, experiments—and, especially, open questions.

Nandini Trivedi
Ohio State University
Columbus

New Books

Acoustics

Noise and Fluctuations. T. González, J. Mateos, D. Pardo, eds. *AIP Conference Proceedings 780*. Proc. conf., Salamanca, Spain, Sept. 2005. AIP, Melville, NY, 2005. \$265.00 (836 pp.). ISBN 0-7354-0267-1, CD-ROM

The Physics of Birdsong. G. B. Mindlin, R. Laje. *Biological and Medical Physics, Biomedical Engineering*. Springer-Verlag, New York, 2005. \$79.95 (157 pp.). ISBN 3-540-25399-8

Suspension Acoustics: An Introduction to the Physics of Suspensions. S. Temkin. Cambridge U. Press, New York, 2005. \$110.00 (398 pp.). ISBN 0-521-84757-5

Voice and Speech Quality Perception: Assessment and Evaluation. U. Jekosch. *Signals and Communication Technology*. Springer-Verlag, New York, 2005. \$99.00 (208 pp.). ISBN 3-540-24095-0

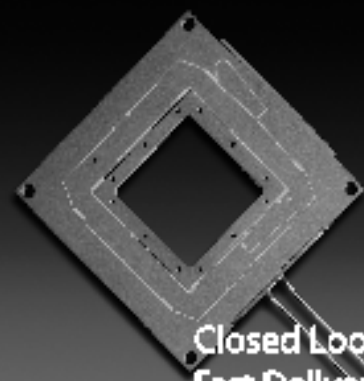
Astronomy and Astrophysics

Astroparticle Physics. C. Grupen. Springer-Verlag, New York, 2005. \$59.95 (441 pp.). ISBN 3-540-25312-2

The Astrophysics of Cataclysmic Variables and Related Objects. J.-M. Hameury, J.-P. Lasota, eds. *Astronomical Society of the Pacific Conference Series 330*. Proc. mtg., Strasbourg, France, July 2004. Astronomical Society of the Pacific, San Francisco, 2005. \$77.00 (517 pp.). ISBN 1-58381-193-1

Comets: Nature, Dynamics, Origin, and Their Cosmogonical Relevance.

Nanopositioning Systems



**Closed Loop
Fast Delivery
Sub-nm Precision
Custom Solutions
Competitive Pricing**

MAD CITY LABS, INC.

www.madcitylabs.com

+1 608 298-0855

sales@madcitylabs.com

See www.pt.ims.ca/6089-31

The magazine that helps scientists to apply high-end software in their research!



**Peer-Reviewed
Theme & Feature Articles**

2005

Jan/Feb	New Directions
Mar/Apr	Cluster Computing
May/Jun	Multiphysics Modeling
Jul/Aug	Earth System Research
Sep/Oct	Grid Computing
Nov/Dec	Monte Carlo Methods



Subscribe to CISE online at
<http://cise.aip.org> and
www.computer.org/cise

J. A. Fernández. *Astrophysics and Space Science Library* 328. Springer-Verlag, Dordrecht, the Netherlands, 2005. \$159.00 (383 pp.). ISBN 1-4020-3490-3

Cosmic Abundances: As Records of Stellar Evolution and Nucleosynthesis in Honor of David L. Lambert. T. G. Barnes III, F. N. Bash, eds. *Astronomical Society of the Pacific Conference Series* 336. Proc. symp., Austin, TX, June 2004. Astronomical Society of the Pacific, San Francisco, 2005. \$77.00 (378 pp.). ISBN 1-58381-201-6

The Evolution of Starbursts. S. Hüttemeister, E. Manthey, D. Bomans, K. Weis, eds. *AIP Conference Proceedings* 783. Proc. sem., Bad Honnef, Germany, Aug. 2004. AIP, Melville, NY, 2005. \$155.00 (429 pp.). ISBN 0-7354-0270-1

Galaxy Formation and Evolution. H. Spinrad. *Springer-Praxis Books in Astrophysics and Astronomy*. Praxis/Springer-Verlag, New York, 2005. \$129.00 (196 pp.). ISBN 3-540-25498-6

High Energy Density Laboratory Astrophysics. G. A. Kyrala, ed. *Astrophysics and Space Science Series* 298. Proc. conf., Tucson, AZ, Mar. 2004. Springer-Verlag, New York, 2005. \$189.00 (401 pp.). ISBN 1-4020-3483-0

The Initial Mass Function 50 Years Later. E. Corbelli, F. Palla, H. Zinnecker, eds. *Astrophysics and Space Science Library* 327. Springer-Verlag, New York, 2005. \$199.00 (543 pp.). ISBN 1-4020-3406-7

Magnetic Fields in the Universe: From Laboratory and Stars to Primordial Structures. E. M. de Gouveia Dal Pino, G. Lugones, A. Lazarian, eds. *AIP Conference Proceedings* 784. Proc. conf., Angra dos Reis, Brazil, Nov.–Dec. 2004. AIP, Melville, NY, 2005. \$185.00 (455 pp.). ISBN 0-7354-0273-6, *CD-ROM*

New Light on Dark Stars: Red Dwarfs, Low-Mass Stars, Brown Dwarfs. 2nd ed. I. N. Reid, S. L. Hawley. *Springer-Praxis Books in Astrophysics and Astronomy*. Praxis/Springer-Verlag, New York, 2005 [2000]. \$99.00 (560 pp.) ISBN 3-540-25124-3

Observing Dark Energy. S. C. Wolff, T. R. Lauer, eds. *Astronomical Society of the Pacific Conference Series* 339. Proc. mtg., Tucson, AZ, March 2004. Astronomical Society of the Pacific, San Francisco, 2005. \$77.00 (241 pp.). ISBN 1-58381-206-7

The Physics of Collisionless Shocks. G. Li, G. P. Zank, C. T. Russell, eds. *AIP Conference Proceedings* 781. Proc. conf., Palm Springs, CA, Feb.–Mar. 2005. AIP, Melville, NY, 2005. \$145.00 (349 pp.). ISBN 0-7354-0268-X

Solar-Type Activity in Main-Sequence Stars. R. E. Gershberg (translated from Russian by S. Knyazeva). Springer-Verlag, New York, 2005. \$129.00 (494 pp.). ISBN 3-540-21244-2

Starbursts: From 30 Doradus to Lyman Break Galaxies. R. De Grijs, R. M. González Delgado, eds. *Astrophysics and Space Science Library* 329. Springer-Verlag, New York, 2005. \$179.00 (354 pp.). ISBN 1-4020-3538-1, *CD-ROM*

White Dwarfs: Cosmological and Galactic Probes. E. M. Sion, S. Vennes, H. L. Shipman, eds. *Astrophysics and Space Science Library* 332. Springer-Verlag, Dordrecht, the Netherlands, 2005. \$159.00 (266 pp.). ISBN 1-4020-3693-0

Atomic and Molecular Physics

Quantum Transport: Atom to Transistor. S. Datta. Cambridge U. Press, New York, 2005. \$70.00 (404 pp.). ISBN 0-521-63145-9

Biological and Medical Physics

Methods in Modern Biophysics. 2nd ed. B. Nölting. Springer-Verlag, New York, 2006 [2003]. \$49.95 *paper* (257 pp.). ISBN 3-540-27703-X

Chemical Physics

Handbook of Chlor-Alkali Technology. Vols. 1–5. T. F. O'Brien, T. V. Bommaraju, F. Hine. Springer-Verlag, New York, 2005. \$1,600.00 *set* (1582 pp. *set*). ISBN 0-306-48623-7

Macrocyclic Chemistry: Current Trends and Future Perspectives. K. Gloe, ed. Springer-Verlag, New York, 2005. \$179.00 (450 pp.). ISBN 1-4020-3364-8

Molecular Wires: From Design to Properties. L. De Cola, ed. *Topics in Current Chemistry* 257. Springer-Verlag, New York, 2005. \$159.00 (170 pp.). ISBN 3-540-25793-4

Theoretical Aspects of Transition Metal Catalysis. G. Frenking, ed. *Topics in Organometallic Chemistry* 12. Springer-Verlag, New York, 2005. \$239.00 (266 pp.). ISBN 3-540-23510-8

X-Ray Diffraction by Macromolecules. N. Kasai, M. Kakudo. *Springer Series in Chemical Physics* 80. \$179.00 (504 pp.). ISBN 3-540-25317-3

Computers and Computational Physics

Accuracy and Reliability in Scientific Computing. B. Einarsson, ed. *Software, Environments, Tools*. SIAM, Philadelphia, 2005. \$64.00 *paper* (338 pp.). ISBN 0-89871-584-9

Contemporary Cryptology. D. Catalano et al. *Advanced Courses in Mathematics, CRM Barcelona*. Birkhäuser Verlag, Boston, 2005. \$44.95 *paper* (237 pp.). ISBN 3-7643-7294-X

Java Precisely. 2nd ed. P. Sestoft. MIT Press, Cambridge, MA, 2005 [2002]. \$18.95 *paper* (157 pp.). ISBN 0-262-69325-9

Mathematica® for Theoretical Physics: Classical Mechanics and Nonlinear Dynamics. 2nd ed. G. Baumann. Springer-Verlag, New York, 2005 [1993]. \$59.95 (544 pp.). ISBN 0-387-01674-0, *CD-ROM*

Mathematica® for Theoretical Physics: Electrodynamics, Quantum Mechanics, General Relativity, and Fractals. 2nd ed. G. Baumann. Springer-Verlag, New York, 2005 [1993]. \$59.95 (398 pp.). ISBN 0-387-21933-1, *CD-ROM*

Physics-Based Animation. K. Erleben, J. Sporring, K. Henriksen, H. Dohlmann. Charles River Media, Hingham, MA, 2005. \$69.95 (817 pp.). ISBN 1-58450-380-7

Soft Computing: Methodologies and Applications. F. Hoffmann, M. Köppen, F. Klawonn, R. Roy, eds. *Advances in Soft Computing*. Springer-Verlag, New York, 2005. \$169.00 *paper* (338 pp.). ISBN 3-540-25726-8

Theoretical and Experimental DNA Computation. M. Amos. *Natural Computing Series*. Springer-Verlag, New York, 2005. \$59.95 (172 pp.). ISBN 3-540-65773-8

Condensed Matter Physics

The Mathematics of the Bose Gas and Its Condensation. E. H. Lieb, R. Seiringer, J. P. Solovej, J. Yngvason. *Oberwolfach Seminars* 34. Birkhäuser-Verlag, Boston, 2005. \$39.95 *paper* (203 pp.). ISBN 3-7643-7336-9

Theory of Copper Oxide Superconductors. H. Kamimura, H. Ushio, S. Matsuno, T. Hamada. Springer-Verlag, New York, 2005. \$99.00 (214 pp.). ISBN 3-540-25189-8

Theory of Fluctuations in Superconductors. A. Larkin, A. Varlamov. *International Series of Monographs on Physics* 127. Oxford U. Press, New York, 2005. \$144.50 (412 pp.). ISBN 0-19-852815-9

Tunable External Cavity Diode Lasers. C. Ye. World Scientific, Hackensack, NJ, 2004. \$68.00 (262 pp.). ISBN 981-256-088-2

Cosmology and Relativity

Cosmology and Gravitation. M. Novello, S. E. P. Bergliaffa, eds. *AIP Conference Proceedings* 782. Proc. sch., Rio de Janeiro, Brazil, July–Aug. 2004. AIP, Melville, NY, 2005. \$152.00 (323 pp.). ISBN 0-7354-0269-8

Elements of Numerical Relativity: From Einstein's Equations to Black Hole Simulations. C. Bona, C. Palenzuela-Luque. *Lecture Notes in Physics* 673. Springer-Verlag, New York, 2005. \$59.95 (151 pp.). ISBN 3-540-25779-9

Frontiers of Cosmology. A. Blanchard, M. Signore, eds. *NATO Science Series 2: Mathematics, Physics and Chemistry* 187. Proc. inst., Cargèse, France, Sept. 2003. Springer-Verlag, Dordrecht, the Netherlands, 2005. \$179.00 (333 pp.). ISBN 1-4020-3055-X

Planck Scale Effects in Astrophysics and Cosmology. G. Amelino-Camelia, J. Kowalski-Glikman, eds. *Lecture Notes in Physics* 669. Proc. sch., Karpacz, Poland, Feb. 2004. Springer-Verlag, New York, 2005. \$79.95 (413 pp.). ISBN 3-540-25263-0

Relativity and the Nature of Space-time. V. Petkov. *The Frontiers Collection*. Springer-Verlag, New York, 2005. \$49.95 (293 pp.). ISBN 3-540-23889-1

Relativity Today. I. Rácz, ed. Proc. wksp., Sárospatak, Hungary, Aug. 2003. Akadémiai Kiadó, Budapest, Hungary, 2004. \$40.00 (290 pp.). ISBN 963-05-8187-6

A Short Course in General Relativity. 3rd ed. J. Foster, J. D. Nightingale. Springer-Verlag, New York, 2005 [1995]. \$59.95 *paper* (292 pp.). ISBN 0-387-26078-1

The Universe of Fluctuations: The Architecture of Spacetime and the Universe. B. G. Sidharth. *Fundamental Theories of Physics 147*. Springer-Verlag, Dordrecht, the Netherlands, 2005. \$119.00 (184 pp.). ISBN 1-4020-3785-6

Device Physics

Microcontrollers in Practice. M. Mitescu, I. Susnea. *Springer Series in Advanced Microelectronics 18*. Springer-Verlag, New York, 2005. \$99.00 (250 pp.). ISBN 3-540-25301-7, *CD-ROM*

Noise in Linear and Nonlinear Circuits. S. A. Maas. *Artech House Microwave Library*. Artech House, Norwood, MA, 2005. \$89.00 (275 pp.). ISBN 1-58053-849-5

Organic Electroluminescence. Z. Kafafi, ed. *Optical Engineering 94*. CRC Press/Taylor & Francis, Boca Raton, FL, 2005. \$139.00 (514 pp.). ISBN 0-8247-5906-0

PEM Fuel Cells: Theory and Practice. F. Barbir. *Academic Press Sustainable World Series*. Elsevier Academic Press, Burlington, MA, 2005. \$84.95 (433 pp.). ISBN 0-12-078142-5

Energy and Environment

Deep Water: The Epic Struggle over Dams, Displaced People, and the Environment. J. Leslie. Farrar, Straus and Giroux, New York, 2005. \$25.00 (352 pp.). ISBN 0-374-28172-6

Venomous Earth: How Arsenic Caused the World's Worst Mass Poisoning. A. A. Meharg. Macmillan, New York, 2005. \$29.95 (192 pp.). ISBN 1-4039-4499-7

Fluids

Fundamentals of Multiphase Flow. C. E. Brennen. Cambridge U. Press, New York, 2005. \$90.00 (345 pp.). ISBN 0-521-84804-0

Hydrodynamics of Explosion: Experiments and Models. V. K. Kedrinskii. *High-Pressure Shock Compression of Condensed Matter*. Springer-Verlag, New York, 2005. \$169.00 (362 pp.). ISBN 3-540-22481-5

Incompressible Flow. 3rd ed. R. L. Panton. Wiley, Hoboken, NJ, 2005 [1995]. \$140.00 (821 pp.). ISBN 0-471-26122-X

Liquid Sloshing Dynamics: Theory and Applications. R. A. Ibrahim. Cambridge U. Press, New York, 2005. \$275.00 (948 pp.). ISBN 0-521-83885-1

Nonlinear Waves in Fluids: Recent Advances and Modern Applications. R. Grimshaw, ed. *CISM Courses and Lectures 483*. Springer-Wien, New York, 2005. \$69.95 *paper* (196 pp.). ISBN 3-211-25259-2

Shock Waves. Vols. 1 and 2. Z. Jiang, ed. Proc. symp., Beijing, China, July 2004. Springer-Verlag, New York, 2005. \$349.00

set (1332 pp. *set*). ISBN 3-540-22497-1

Geophysics

The Inner Magnetosphere: Physics and Modeling. T. I. Pulkkinen, N. A. Tsyganenko, R. H. W. Friedel, eds. *Geophysical Monograph 155*. American Geophysical Union, Washington, DC, 2005. \$84.00 (318 pp.). ISBN 0-87590-420-3

History and Philosophy

109 East Palace: Robert Oppenheimer and the Secret City of Los Alamos. J. Conant. Simon & Schuster, New York, 2005. \$26.95 (424 pp.). ISBN 0-7432-5007-9

Albert Einstein—Chief Engineer of the Universe: One Hundred Authors for Einstein. J. Renn, ed. Wiley-VCH, Weinheim, Germany, 2005. \$35.00 (472 pp.). ISBN 3-527-40574-7

Bioethics and the New Embryology: Springboards for Debate. S. F. Gilbert, A. L. Tyler, E. J. Zackin. Sinauer/W. H. Freeman, Sunderland, MA, 2005. \$14.95 *paper* (299 pp.). ISBN 0-7167-7345-7

Celestial Images: Antiquarian Astronomical Charts and Maps from the Mendillo Collection. M. Mendillo et al. U. of Washington Press, Seattle, 2005. \$25.00 *paper* (87 pp.). ISBN 1-881450-22-8

No Noise Is Good Noise

SR570 Current Preamp	SR560 Voltage Preamp
▪ 5 fA/√Hz input noise	▪ 4 nV/√Hz input noise
▪ 1 MHz bandwidth	▪ 1 MHz bandwidth
▪ 1 pA/V max. sensitivity	▪ Gain from 1 to 50,000
▪ Adjustable bias voltage and input offset current	▪ True differential or single-ended input

Low Noise Preamplifiers.....\$2195 (U.S. list)

Designed for low noise signal recovery experiments, the SR560 Voltage Preamplifier and SR570 Current Preamplifier are the industry's standards. These general purpose instruments are ideal for amplifying and conditioning very small signals and offer solutions for a variety of photonic and low temperature applications. Both preamplifiers feature a 1 MHz bandwidth, configurable filters, line or battery operation and an RS-232 computer interface.

SRS Stanford Research Systems
Tel: (408) 744-9040 • Fax: (408) 744-9049
Email: info@thinkSRS.com • www.thinkSRS.com

To access 4,000 products
and suppliers specific to
physical scientists and
engineers,

CLICK
HERE



illators scanners signal
hes tachometers tem
ion wafers waveguide

www.physicstoday.com/guide

THE #1 BUYERS' GUIDE
FOR THE PHYSICAL SCIENCES

Physics Today Buyers' Guide

A Crack in the Edge of the World: America and the Great California Earthquake of 1906. S. Winchester. HarperCollins, New York, 2005. \$27.95 (462 pp.). ISBN 0-06-057199-3

Curse of the Narrows. L. M. Mac Donald. Walker, New York, 2005. \$26.00 (355 pp.). ISBN 0-8027-1458-7

Descartes' Error: Emotion, Reason, and the Human Brain. A. Damasio. Penguin Books, New York, 2005 [1994, reissued]. \$15.00 *paper* (312 pp.). ISBN 0-14-303622-X

Dr. Space: The Life of Wernher von Braun. B. Ward. Naval Institute Press, Annapolis, MD, 2005. \$23.96 (282 pp.). ISBN 1-59114-926-6

Einstein on Race and Racism. F. Jerome, R. Taylor. Rutgers U. Press, New Brunswick, NJ, 2005. \$23.95 (206 pp.). ISBN 0-8135-3617-0

Einstein—Peace Now!: Visions and Ideas. R. Braun, D. Krieger, eds. Wiley-VCH, Weinheim, Germany, 2005. \$27.95 (305 pp.). ISBN 3-527-40604-2

Engineering Communism: How Two Americans Spied for Stalin and Founded the Soviet Silicon Valley. S. T. Usdin. Yale U. Press, New Haven, CT, 2005. \$40.00 (329 pp.). ISBN 0-300-10874-5

Facts and Mysteries in Elementary Particle Physics. M. J. G. Veltman. World Scientific, River Edge, NJ, 2003. \$48.00, \$19.00 *paper* (340 pp.). ISBN 981-238-148-1, ISBN 981-238-149-X *paper*

Hitlers Bombe: Die geheime Geschichte der deutschen Kernwaffenversuche. R. Karlsch (in the German language). Deutsche Verlags-Anstalt, Munich, Germany, 2005. €24.90 (415 pp.). ISBN 3-421-05809-1

How We Got Here: A Slightly Irreverent History of Technology and Markets. A. Kessler. Collins/HarperCollins, New York, 2005. \$14.95 *paper* (262 pp.). ISBN 0-06-084097-8

Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time. D. Sobel. Walker, New York, 2005 [1995, reissued]. \$19.00 (184 pp.). ISBN 0-8027-1462-5

Master Mind: The Rise and Fall of Fritz Haber, the Nobel Laureate Who Launched the Age of Chemical Warfare. D. Charles. Ecco/HarperCollins, New York, 2005. \$24.95 (313 pp.). ISBN 0-06-056272-2

Mechanistic Images in Geometric Form: Heinrich Hertz's *Principles of Mechanics*. J. Lützen. Oxford U. Press, New York, 2005. \$184.50 (318 pp.). ISBN 0-19-856737-5

Michael Frayn's *Copenhagen* in Debate: Historical Essays and Documents on the 1941 Meeting Between Niels Bohr and Werner Heisenberg. M. Dörries, ed. *Berkeley Papers in History of Science* 20. U. of Calif. Press, Berkeley, 2005. \$12.00 *paper* (195 pp.). ISBN 0-9672617-2-4

The Multinational History of Strasbourg Astronomical Observatory. A. Heck, ed. *Astrophysics and Space Science Library* 330. Springer-Verlag, New York, 2005. \$159.00 (310 pp.). ISBN 1-4020-3643-4

Oppenheimer: Portrait of an Engima. J. Bernstein. Ivan R. Dee, Chicago, 2005 [2004, reissued]. \$14.95 *paper* (223 pp.). ISBN 1-56663-666-3

Pedagogy and the Practice of Science: Historical and Contemporary Perspectives. D. Kaiser, ed. MIT Press, Cambridge, MA, 2005. \$45.00 (426 pp.). ISBN 0-262-11288-4

Physics Before and After Einstein. M. M. Capria, ed. IOS Press, Fairfax, VA, 2005. \$147.00 (324 pp.). ISBN 1-58603-462-6

The Ruin of J. Robert Oppenheimer: And the Birth of the Modern Arms Race. P. J. McMillan. Viking, New York, 2005. \$25.95 (373 pp.). ISBN 0-670-03422-3

Stealing God's Thunder: Benjamin Franklin's Lightning Rod and the Invention of America. P. Dray. Random House, New York, 2005. \$25.95 (279 pp.). ISBN 1-4000-6032-X

Tears of the Tree: The Story of Rubber—A Modern Marvel. J. Loadman. Oxford U. Press, New York, 2005. \$37.50 (336 pp.). ISBN 0-19-856840-1

The Universe in a Single Atom: The Convergence of Science and Spirituality. T. Gyatso, Dalai Lama XIV. Morgan Road Books, New York, 2005. \$24.95 (216 pp.). ISBN 0-7679-2066-X

A World on Fire: A Heretic, an Aristocrat, and the Race to Discover Oxygen. J. Jackson. Viking, New York, 2005. \$27.95 (414 pp.). ISBN 0-670-03434-7

Instrumentation and Techniques

Characterization and Metrology for ULSI Technology 2005. D. G. Seiler et al., eds. *AIP Conference Proceedings* 788. Proc. conf., Richardson, TX, Mar. 2005. AIP, Melville, NY, 2005. \$245.00 (667 pp.). ISBN 0-7354-0277-9, *CD-ROM*

Cryogenic Particle Detection. C. Enss, ed. *Topics in Applied Physics* 99. Springer-Verlag, New York, 2005. \$229.00 (507 pp.). ISBN 3-540-20113-0

Electron Microscopy of Molecular and Atom-Scale Mechanical Behavior, Chemistry and Structure. D. C. Martin, D. A. Muller, P. A. Midgley, E. A. Stach, eds. *Materials Research Symposium Proceedings* 839. Proc. symp., Boston, Nov.–Dec. 2004. MRS, Warrendale, PA, 2005. \$93.00 (204 pp.). ISBN 1-55899-787-3

Engineering Thin Films and Nanostructures with Ion Beams. É. Knys-tautas, ed. *Optical Engineering* 94. CRC Press/Taylor & Francis, Boca Raton, FL, 2005. \$139.95 (574 pp.). ISBN 0-8247-2447-X, *CD-ROM*

Image Processing and Analysis: Variational, PDE, Wavelet, and Stochastic

Methods. T. F. Chan, J. Shen. SIAM, Philadelphia, 2005. \$75.00 *paper* (400 pp.). ISBN 0-89871-589-X

Lifetime Spectroscopy: A Method of Defect Characterization in Silicon for Photovoltaic Applications. S. Rein. *Springer Series in Material Science 85*. Springer-Verlag, New York, 2005. \$179.00 (489 pp.). ISBN 3-540-25303-3

Materials Science

Annual Review of Materials Research. Vol. 35. J. M. Thomas et al., eds. Annual Reviews, Palo Alto, CA, 2005. \$92.00 (662 pp.). ISBN 0-8243-1735-1

Applied Micromechanics of Porous Materials. L. Dormieux, F.-J. Ulm, eds. *CISM Courses and Lectures 480*. Springer-Wien, New York, 2005. \$109.00 *paper* (331 pp.). ISBN 3-211-26362-4

Applied Physics of Carbon Nanotubes: Fundamentals of Theory, Optics and Transport Devices. S. V. Rotkin, S. Subramoney, eds. *Nanoscience and Technology*. Springer-Verlag, New York, 2005. \$139.00 (349 pp.). ISBN 3-540-23110-2

Biomedical Nanotechnology. N. H. Malsch, ed. CRC Press/Taylor & Francis, Boca Raton, FL, 2005. \$119.95 (209 pp.). ISBN 0-8247-2579-4

Fundamentals of Nanoindentation and Nanotribology III. K. J. Wahl et al., eds. *Materials Research Society Sympo-*

sium Proceedings 841. Proc. symp., Boston, Nov.-Dec. 2004. MRS, Warrendale, PA, 2005. \$99.00 (410 pp.). ISBN 1-55899-789-X

GaN, AlN, InN and Their Alloys. C. Wetzel, B. Gil, M. Kuzuhara, M. Manfra, eds. *Materials Research Society Symposium Proceedings 831*. Proc. symp., Boston, Nov.-Dec. 2004. MRS, Warrendale, PA, 2005. \$112.00 (784 pp.). ISBN 1-55899-779-2

Group-IV Semiconductor Nanostructures. L. Tsybeskov, D. J. Lockwood, C. Delerue, M. Ichikawa, eds. *Materials Research Society Symposium Proceedings 832*. Proc. symp., Boston, Nov.-Dec. 2004. MRS, Warrendale, PA, 2005. \$102.00 (408 pp.). ISBN 1-55899-780-6

Handbook of Materials Modeling. Parts A and B. S. Yip, ed. Springer-Verlag, New York, 2005. \$800.00 *set* (2965 pp.). ISBN 1-4020-3287-0 *set*

Innovative Superhard Materials and Sustainable Coatings for Advanced Manufacturing. J. Lee, N. Novikov, V. Turkevich, eds. *NATO Science Series 2: Mathematics, Physics and Chemistry 200*. Proc. wksp., Kiev, Ukraine, May 2004. Springer-Verlag, New York, 2005. \$189.00 (475 pp.). ISBN 1-4020-3469-5

Integrative and Interdisciplinary Aspects of Intermetallics. M. J. Mills, H. Inui, H. Clemens, C.-L. Fu, eds. *Materials Research Society Symposium Proceedings 842*. Proc. symp., Boston, Nov.-Dec. 2004.

MRS, Warrendale, PA, 2005. \$102.00 (553 pp.). ISBN 1-55899-790-3

Introduction to Computational Plasticity. F. Dunne, N. Petrinic. Oxford U. Press, New York, 2005. \$89.50 (241 pp.). ISBN 0-19-856826-6

Low Thermal Expansion Glass Ceramics. 2nd ed. H. Bach, D. Krause, eds. *Schott Series on Glass and Glass Ceramics*. Springer-Verlag, New York, 2005 [1995]. \$179.00 (247 pp.). ISBN 3-540-24111-6

Materials Fundamentals of Gate Dielectrics. A. A. Demkov, A. Navrotsky, eds. Springer-Verlag, New York, 2005. \$129.00 (475 pp.). ISBN 1-4020-3077-0

Mechanical Properties of Bioinspired and Biological Materials. C. Viney, K. Katti, F.-J. Ulm, C. Hellmich, eds. *Materials Research Society Symposium Proceedings 844*. Proc. symp., Boston, Nov.-Dec. 2004. MRS, Warrendale, PA, 2005. \$93.00 (342 pp.). ISBN 1-55899-792-X

The Metal-Hydrogen System: Basic Bulk Properties. 2nd ed. Y. Fukai. *Springer Series in Materials Science 21*. Springer-Verlag, New York, 2005 [1993]. \$119.00 (497 pp.). ISBN 3-540-00494-7

The Physics of Lyotropic Liquid Crystals: Phase Transitions and Structural Properties. A. M. F. Neto, S. R. A. Salinas. *Monographs on the Physics and Chemistry of Materials 62*. Oxford U. Press, New York, 2005. \$124.50 (304 pp.). ISBN 0-19-852550-8

DIFFRACTION GRATINGS

Pulse Compression Gratings, to 600 mm
High-Damage-Threshold MLD Gratings
Concave Aberration-Corrected Gratings
Holographic and Ruled, Masters and Replicas





HORIBA JOBIN YVON

Explore the Future

1-732-549-7405
oemsales@JobinYvon.com
www.JobinYvon.com

HORIBA Jobin Yvon
OEM Division
Innovation Since 1819

HORIBA GROUP

Progress in Compound Semiconductor Materials IV—Electronic and Optoelectronic Applications. G. J. Brown et al., eds. *Materials Research Society Symposium Proceedings 829*. Proc. symp., Boston, Nov.–Dec. 2004. MRS, Warrendale, PA, 2005. \$102.00 (537 pp.). ISBN 1-55899-777-6

Smart Electronic Materials: Fundamentals and Applications. J. Singh. Cambridge U. Press, New York, 2005. \$80.00 (408 pp.). ISBN 0-521-85027-4

Zinc Oxide—A Material for Micro- and Optoelectronic Applications. N. H. Nickel, E. Terukov, eds. *NATO Science Series 2: Mathematics, Physics and Chemistry 194*. Proc. wksp., St. Petersburg, Russia, June 2004. Springer-Verlag, New York, 2005. \$139.00 (240 pp.). ISBN 1-4020-3473-3

Miscellaneous

2004 Physics Education Research Conference. J. Marx, P. Heron, S. Franklin, eds. *AIP Conference Proceedings 790*. Proc. conf., Sacramento, CA, Aug. 2004. AIP, Melville, NY, 2005. \$137.00 *paper* (214 pp.). ISBN 0-7354-0281-7

International Tables for Crystallography. Vol. G: Definition and Exchange of Crystallographic Data. S. Hall, B. McMahon, eds. International Union of Crystallography/Springer-Verlag, Norwell, MA, 2005. \$285.00 (594 pp.). ISBN 1-4020-3138-6, *CD-ROM*

Ultrastructure: An Interactive Virtual Electron Microscope. J. Schechter, R. Wood. Sinauer, Sunderland, MA, 2005. \$39.95 ISBN 0-87893-891-5, *CD-ROM*

Optics and Photonics

Advanced Concepts in Fluorescence Sensing. Part A: Small Molecule Sensing. C. D. Geddes, J. R. Lakowicz, eds. *Topics in Fluorescence Spectroscopy 9*. Springer-Verlag, New York, 2005. \$149.00 (327 pp.). ISBN 0-387-23334-2

Advanced Concepts in Fluorescence Sensing. Part B: Macromolecular Sensing. C. D. Geddes, J. R. Lakowicz, eds. *Topics in Fluorescence Spectroscopy 10*. Springer-Verlag, New York, 2005. \$149.00 (294 pp.). ISBN 0-387-23644-9

Beamed Energy Propulsion. A. V. Pakhomov, L. N. Myrabo, eds. *AIP Conference Proceedings 766*. Proc. symp., Troy, NY, Oct. 2004. AIP, Melville, NY, 2005. \$178.00 (615 pp.). ISBN 0-7354-0251-5

Excimer Laser Technology. D. Basting, G. Marowsky, eds. Springer-Verlag, New York, 2005. \$109.00 (433 pp.). ISBN 3-540-20056-8

ICAME 2003. M. E. Elzain, A. A. Yousif, A. D. Al Rawas, A. M. Gismelseed, eds. Proc. conf., Muscat, Oman, Sept. 2003. Kluwer Academic, Norwell, MA, 2004. \$219.00 (656 pp.). ISBN 1-4020-2821-0

Introduction to Optics. G. Chartier. *Advanced Texts in Physics*. Springer-Verlag,

New York, 2005. \$89.95 (595 pp.). ISBN 0-387-40346-9

Kramers–Kronig Relations in Optical Materials Research. V. Lucarini, J. J. Saarinen, K.-E. Peiponen, E. M. Vartiainen. *Springer Series in Optical Sciences 110*. Springer-Verlag, New York, 2005. \$99.00 (160 pp.). ISBN 3-540-23673-2

Laser Resonators and Beam Propagation: Fundamentals, Advanced Concepts and Applications. 2nd ed. N. Hodgson, H. Weber. *Springer Series in Optical Sciences 108*. Springer-Verlag, New York, 2005 [1996]. \$149.00 (793 pp.). ISBN 0-387-40078-8

Neutron and X-Ray Scattering as Probes of Multiscale Phenomena. S. R. Bhatia, P. G. Khalifah, D. J. Pochan, P. G. Radaelli, eds. *Materials Research Society Symposium Proceedings 840*. Proc. symp., Boston, Nov.–Dec. 2004. MRS, Warrendale, PA, 2005. \$93.00 (244 pp.). ISBN 1-55899-788-1

Optical and Digital Techniques for Information Security. B. Javidi, ed. *Advanced Sciences and Technologies for Security Applications*. Springer-Verlag, New York, 2005. \$119.00 (354 pp.). ISBN 0-387-20616-7

Optical Microcavities. K. Vahala, ed. *Advanced Series in Applied Physics 5*. World Scientific, Hackensack, NJ, 2004. \$108.00 (502 pp.). ISBN 981-238-775-7

Phase-Modulated Optical Communication Systems. K.-P. Ho. Springer-Verlag, New York, 2005. \$129.00 (430 pp.). ISBN 0-387-24392-5

Photonic Crystals: Towards Nanoscale Photonic Devices. J.-M. Lourtioz et al. (translated from French by P.-N. Favennec). Springer-Verlag, New York, 2005. \$99.00 (426 pp.). ISBN 3-540-24431-X

Science with Adaptive Optics. W. Brandner, M. Kasper, eds. *ESO Astrophysics Symposia*. Proc. wksp., Garching, Germany, Sept. 2003. Springer-Verlag, New York, 2005. \$49.95 (387 pp.). ISBN 3-540-25034-4

Particle Physics

Accelerator Physics. 2nd ed. S. Y. Lee. World Scientific, Hackensack, NJ, 2004 [1999]. \$84.00, \$44.00 *paper* (575 pp.). ISBN 981-256-182-X, ISBN 981-256-200-1 *paper*

Electrostatic Accelerators: Fundamentals and Applications. R. Hellborg, ed. *Particle Acceleration and Detection*. Springer-Verlag, New York, 2005. \$199.00 (620 pp.). ISBN 3-540-23983-9

The Elementary Process of Bremsstrahlung. E. Haug, W. Nakel. *World Scientific Lecture Notes in Physics 73*. World Scientific, River Edge, NJ, 2004. \$58.00 (259 pp.). ISBN 981-238-578-9

Few-Body Problems in Physics. N. Kalantar-Nayestanaki, R. G. E. Timmermans, B. L. G. Bakker, eds. *AIP Conference Proceedings 768*. Proc. conf., Gronin-

gen, the Netherlands, Aug. 2004. AIP, Melville, NY, 2005. \$167.00 (482 pp.). ISBN 0-7354-0253-1

Hadronic Physics. J.-P. Lansberg, J.-R. Cudell, J. Cugnon, eds. *AIP Conference Proceedings 775*. Proc. conf., Spa, Belgium, Dec. 2004. AIP, Melville, NY, 2005. \$136.00 (274 pp.). ISBN 0-7354-0260-4

Hadronic Physics from Lattice QCD. A. M. Green, ed. *International Review of Nuclear Physics 9*. World Scientific, Hackensack, NJ, 2004. \$88.00 (367 pp.). ISBN 981-256-022-X

High Intensity and High Brightness Hadron Beams. I. Hofmann, R. W. Hasse, J.-M. Lagniel, eds. *AIP Conference Proceedings 773*. Proc. wksp., Bensheim, Germany, Oct. 2004. AIP, Melville, NY, 2005. \$189.00 (487 pp.). ISBN 0-7354-0258-2, *CD-ROM*

Quantum Dynamics with Trajectories: Introduction to Quantum Hydrodynamics. R. E. Wyatt. *Interdisciplinary Applied Mathematics 28*. Springer-Verlag, New York, 2005. \$79.95 (405 pp.). ISBN 0-387-22964-7

A Story of Light: A Short Introduction to Quantum Field Theory of Quarks and Leptons. M. Y. Han. World Scientific, Hackensack, NJ, 2004. \$38.00 (107 pp.). ISBN 981-256-034-3

What Is the Electron? V. Simulik, ed. Apeiron, Montreal, 2005. \$25.00 *paper* (281 pp.). ISBN 0-9732911-2-5

Plasmas and Fusion

Aspects of Anomalous Transport in Plasmas. R. Balescu. *Series in Plasma Physics*. IOP, Philadelphia, 2005. \$145.00 (475 pp.). ISBN 0-7503-1030-8

Popularizations

After the Beginning: A Cosmic Journey Through Space and Time. N. K. Glendenning. Imperial College Press, London, and World Scientific, Hackensack, NJ, 2004. \$58.00, \$28.00 *paper* (208 pp.). ISBN 1-86094-447-7, ISBN 1-86094-448-5 *paper*

Astronomical Enigmas: Life on Mars, the Star of Bethlehem and Other Milky Way Mysteries. M. Kidger. The Johns Hopkins University Press, Baltimore, MD, 2005. \$29.95 (297 pp.). ISBN 0-8018-8026-2

The Dancing Universe: From Creation Myths to the Big Bang. M. Gleiser. *Understanding Science and Technology Series*. Dartmouth College Press, Lebanon, NH, 2005 [1997, reissued]. \$19.95 *paper* (338 pp.). ISBN 1-58465-466-X

The Equations: Icons of Knowledge. S. Bais. Harvard U. Press, Cambridge, MA, 2005. \$18.95 (96 pp.). ISBN 0-674-01967-9

The Geeks of War: The Secretive Labs and Brilliant Minds Behind Tomorrow's Warfare Technologies. J. Edwards. American Management Association, New York, 2005. \$24.00 (220 pp.). ISBN 0-8144-0852-4

The Genius Factory: The Curious History of the Nobel Prize Sperm Bank. D. Plotz. Random House, New York, 2005. \$24.95 (262 pp.). ISBN 1-4000-6124-5

Grippers in Motion: The Fascination of Automated Handling Tasks. A. Wolf, R. Steinmann, H. Schunk. Springer-Verlag, New York, 2005. \$69.95 (248 pp.). ISBN 3-540-25657-1

Hidden Worlds: Hunting for Quarks in Ordinary Matter. T. P. Smith. Princeton U. Press, Princeton, NJ, 2005 [2003, reissued]. \$18.95 *paper* (178 pp.). ISBN 0-691-12241-5

The Infinite Book: A Short Guide to the Boundless, Timeless and Endless. J. D. Barrow. Pantheon Books, New York, 2005. \$26.00 (328 pp.). ISBN 0-375-42227-7

Into the Cool: Energy Flow, Thermodynamics, and Life. E. D. Schneider, D. Sagan. U. of Chicago Press, Chicago, 2005. \$30.00 (362 pp.). ISBN 0-226-73936-8

Microbe: Are We Ready for the Next Plague? A. P. Zelicoff, M. Bellomo. American Management Association, New York, 2005. \$23.00 (273 pp.). ISBN 0-8144-0865-6

The Myth of Solid Ground: Earthquakes, Prediction, and the Fault Line Between Reason and Faith. D. L. Ulin. Penguin Books, New York, 2005 [2004, reissued]. \$24.95, \$15.00 *paper* (290 pp.). ISBN 0-670-03323-5, ISBN 0-14-303525-8 *paper*

Physics and the Art of Dance: Understanding Movement. K. Laws. Oxford U. Press, New York, 2005 [2002, reissued]. \$24.95 *paper* (236 pp.). ISBN 0-19-514916-5

The Pleasure of Finding Things Out: The Best Short Works of Richard P. Feynman. R. P. Feynman, J. Robbins, ed. Basic Books, New York, 2005 [1999, reissued]. \$14.95 *paper* (270 pp.). ISBN 0-465-02395-9

The Republican War on Science. C. Mooney. Basic Books, New York, 2005. \$24.95 (342 pp.). ISBN 0-465-04675-4

The Right Stuff Illustrated. T. Wolfe. Black Dog & Leventhal, New York, 2005 [1979, reissued]. \$35.00 (265 pp.). ISBN 1-57912-458-5

Six Easy Pieces: Essentials of Physics Explained by Its Most Brilliant Teacher. R. P. Feynman. Basic Books, New York, 2005 [1995, reissued]. \$13.95 *paper* (144 pp.). ISBN 0-465-02392-4

Six Not-So-Easy Pieces: Einstein's Relativity, Symmetry, and Space-Time. R. P. Feynman. Basic Books, New York, 2005 [1997, reissued]. \$13.95 *paper* (152 pp.). ISBN 0-465-02393-2

Teleportation: The Impossible Leap. D. Darling. Wiley, Hoboken, NJ, 2005. \$24.95 (278 pp.). ISBN 0-471-47095-3

Thinking like Einstein: Returning to Our Visual Roots with the Emerging Revolution in Computer Information Visualization. T. G. West. Prometheus Books, Amherst, NY, 2004.

\$28.00 (222 pp.). ISBN 1-59102-251-7

Travels in Four Dimensions: The Enigmas of Space and Time. R. Le Poidevin. Oxford U. Press, New York, 2005 [2003, reissued]. \$28.00, \$15.95 *paper* (275 pp.). ISBN 0-19-875254-7, ISBN 0-19-875255-5 *paper*

Uncertain Science . . . Uncertain World. H. N. Pollack. Cambridge U. Press, New York, 2005 [2003, reissued]. \$19.99 *paper* (243 pp.). ISBN 0-521-61910-6

Visual Astronomy Under Dark Skies: A New Approach to Observing Deep Space. A. Cooke. *Patrick Moore's Practical Astronomy Series*. Springer-Verlag,

New York, 2005. \$39.95 *paper* (180 pp.). ISBN 1-85233-901-2

Voyage to the Planets and Beyond. T. Haines, C. Riley. DK, New York, 2005. \$30.00 (192 pp.). ISBN 0-7566-1265-9

The War of the Soups and the Sparks: The Discovery of Neurotransmitters and the Dispute over How Nerves Communicate. E. S. Valenstein. Columbia U. Press, New York, 2005. \$31.00 (237 pp.). ISBN 0-231-13588-2

Society and Government

The Global Genome: Biotechnology, Politics, and Culture. E. Thacker.

Lots of Smarts. So Little Space.



Now you can put more monitoring and control into your plasma process with Qinto, the most flexible RF power supply on the market. A wide variety of monitoring and control functions are built in, including ramping of power output, energy control, target energy monitoring, error logging and output monitoring.

Want to control the Qinto over RS232, RS484, DeviceNet or CANopen? No problem. You

can even connect a serial modem up to the supply and communicate with it, using any terminal program to perform remote control and diagnostics. And, our remote configuration feature lets you easily change the Qinto's functions for compatibility with other equipment.

Checking out the compact Qinto, OFM or rack mounted, could be one of the smartest things you can do. Call, write, or e-mail for details.



HÜTTINGER
Luettinger Electronic Inc.
Farmington, CT 06032
Tel: 860-255-6555
Fax: 860-255-6123
email: info@huettinger.com
www.huettinger.com

TRUMPF
THE TRUMPF Group



CONGRESSIONAL SCIENCE FELLOWSHIPS 2006 - 2007

THE AMERICAN INSTITUTE OF PHYSICS AND THE AMERICAN PHYSICAL SOCIETY are currently accepting applications for their Congressional Science Fellowship Programs. Fellows serve one year on the staff of a Member of Congress or congressional committee, learning the legislative process while contributing scientific and technical expertise to public policy issues.

QUALIFICATIONS include a PhD or equivalent in physics or a closely related field, a strong interest in S&T policy and, ideally, some experience in applying scientific knowledge toward the solution of societal problems. Fellows are required to be U.S. citizens, APS members for the AIP Fellowship, and members of one or more of the AIP Member Societies for the APS Fellowship.

TERM OF APPOINTMENT for both fellowships is one year. It begins in September 2006 with participation in a two-week orientation sponsored by AAAS, after which Fellows are free to interview with interested congressional offices to select their assignment.

STIPEND AND BENEFIT information is available on our website.

APPLICATIONS should consist of a Letter of Intent, a 2-page Resume including a short list of publications, and three Letters of Reference. Please see either the AIP web site <http://www.aip.org/govsci.html> or the APS web site http://www.aps.org/public_affairs/fellow/ for further information and detailed instructions on applying. Unless otherwise specified in the letter, qualified applicants will be considered for both AIP and APS fellowships.

ALL APPLICATION MATERIALS MUST BE POSTMARKED BY JANUARY 15, 2006 AND SHOULD BE SENT TO:

APS/AIP Congressional Science
Fellowship Programs
c/o Jackie Beamon-Klene
APS Executive Office
One Physics Ellipse
College Park, MD 20740-3843

Physics related Congressional
Science Fellowships are also
sponsored by the American
Geophysical Union at
202-462-6900 and
the Optical Society of
America at
202-416-1443
Please contact
these societies
directly for more
information.



Leonardo Book Series. MIT Press, Cambridge, MA, 2005. \$35.00 (416 pp.). ISBN 0-262-20155-0

Space and Planetary Science

Multi-Wavelength Investigations of Solar Activity. A. V. Stepanov, E. E. Benevolenskaya, A. G. Kosovichev, eds. *IAU Symposium 223.* Proc. symp., St. Petersburg, Russia, June 2004. Cambridge U. Press, New York, 2004. \$90.00 (731 pp.). ISBN 0-521-85195-5

The Solar-B Mission and the Forefront of Solar Physics. T. Sakurai, T. Sekii, eds. *Astronomical Society of the Pacific Conference Series 325.* Proc. mtg., Tokyo, Nov. 2003. Astronomical Society of the Pacific, San Francisco, 2004. \$77.00 (448 pp.). ISBN 1-58381-187-7

Space Systems Failures: Disasters and Rescues of Satellites, Rockets and Space Probes. D. M. Harland, R. D. Lorenz. *Springer-Praxis Books in Space Exploration.* Praxis/Springer-Verlag, New York, 2005. \$29.95 *paper* (368 pp.). ISBN 0-387-21519-0

Statistical Physics and Thermodynamics

Low-Temperature Physics. C. Enss, S. Hunklinger. Springer-Verlag, New York, 2005. \$79.95 (573 pp.). ISBN 3-540-23164-1

Rarefied Gas Dynamics. M. Capitelli, ed. *AIP Conference Proceedings 762.* Proc. symp., Monopoli (Bari), Italy, July 2004. AIP, Melville, NY, 2005. \$325.00 (1357 pp.). ISBN 0-7354-0247-7, *CD-ROM*

Sensitivity and Uncertainty Analysis. Vol. 2: Applications to Large-Scale Systems. D. G. Cacuci, M. Ionescu-Bujor, I. M. Navon. Chapman & Hall/CRC, Boca Raton, FL, 2005. \$59.95 (352 pp.). ISBN 1-58488-116-X

Thermodynamics: A Dynamical Systems Approach. W. M. Haddad, V. Chellaboina, S. G. Nersisov. *Princeton Series in Applied Mathematics.* Princeton U. Press, Princeton, NJ, 2005. \$49.50 (187 pp.). ISBN 0-691-12327-6

Texts and Education

Elementary Climate Physics. F. W. Taylor. Oxford U. Press, New York, 2005. \$94.50, \$44.50 *paper* (212 pp.). ISBN 0-19-856733-2, ISBN 0-19-856734-0 *paper*

Foundations of Modern Cosmology. 2nd ed. J. F. Hawley, K. A. Holcomb. Oxford U. Press, New York, 2005 [1998]. \$79.95 (554 pp.). ISBN 0-19-853096-X

Mathematical Methods for Physicists. 6th ed. G. B. Arfken, H. J. Weber. Elsevier, Boston, 2005 [2001]. \$99.95 (1182 pp.). ISBN 0-12-059876-0

The Pendulum: A Case Study in Physics. G. L. Baker, J. A. Blackburn. Oxford U. Press, New York, 2005. \$89.50 (288 pp.). ISBN 0-19-856754-5

The Physics of Vibrations and Waves.

6th ed. H. J. Pain. Wiley, Hoboken, NJ, 2005 [1999]. \$180.00, \$65.00 *paper* (556 pp.). ISBN 0-470-01295-1, ISBN 0-470-01296-X *paper*

Theory and Mathematical Methods

Applied Mathematical Methods in Theoretical Physics. M. Masujima. Wiley-VCH, Weinheim, Germany, 2005. \$180.00 (377 pp.). ISBN 3-527-40534-8

Approximation of Large-Scale Dynamical Systems. A. C. Antoulas. *Advances in Design and Control.* SIAM, Philadelphia, 2005. \$125.00 (479 pp.). ISBN 0-89871-529-6

Computational Methods of Linear Algebra. 2nd ed. G. Sewell. *Pure and Applied Mathematics.* Wiley, Hoboken, NJ, 2005 [1990]. \$89.95 (268 pp.). ISBN 0-471-73579-5

Darboux Transformations in Integrable Systems: Theory and Their Applications to Geometry. C. Gu, H. Hu, Z. Zhou. *Mathematical Physics Studies 26.* Springer-Verlag, New York, 2005. \$129.00 (308 pp.). ISBN 1-4020-3087-8

Functions of a Complex Variable: Theory and Technique. G. F. Carrier, M. Krook, C. E. Pearson. *Classics in Applied Mathematics 49.* SIAM, Philadelphia, 2005. \$57.00 *paper* (438 pp.). ISBN 0-89871-595-4

Fundamental Interactions and Twistor-Like Methods. J. Lukierski, D. Sorokin, eds. *AIP Conference Proceedings 767.* Proc. symp., Wroclaw, Poland, Sept.-Oct. 2004. AIP, Melville, NY, 2005. \$146.00 (339 pp.). ISBN 0-7354-0252-3

Mathematical Handbook for Electrical Engineers. S. A. Leonov, A. I. Leonov. Artech House, Norwood, MA, 2005. \$118.00 (495 pp.). ISBN 1-58053-779-0

The Mathematics Companion: Essential and Advanced Mathematics for Scientists and Engineers. A. C. Fischer-Cripps. IOP, Philadelphia, 2005. \$17.99 *paper* (203 pp.). ISBN 0-7503-1020-0

The Numerical Solution of Ordinary and Partial Differential Equations. 2nd ed. G. Sewell. *Pure and Applied Mathematics.* Wiley, Hoboken, NJ, 2005 [1988]. \$89.95 (333 pp.). ISBN 0-471-73580-9

The Role of Mathematics in Physical Sciences: Interdisciplinary and Philosophical Aspects. G. Boniolo, P. Budinich, M. Trobok, eds. Springer-Verlag, New York, 2005. \$110.00 (244 pp.). ISBN 1-4020-3106-8

Singular Perturbations and Hysteresis. M. P. Mortell, R. E. O'Malley, A. Pokrovskii, V. Sobolev, eds. SIAM, Philadelphia, 2005. \$66.00 *paper* (344 pp.). ISBN 0-89871-597-0

Surveys in Modern Mathematics. V. Prasolov, Y. Ilyashenko, eds. *London Mathematical Society Lecture Note Series 321.* Cambridge U. Press, New York, 2005. \$70.00 *paper* (348 pp.). ISBN 0-521-54793-8 ■