

## Materials Thermochemistry— 6th Edition

O. Kubaschewski, C.B. Alcock, and  
P.J. Spencer  
(Pergamon Press, 1993, 363 pages).  
ISBN: 0-08-0418899 (hardback),  
0-08-0418880 (paperback)

The issuance of the sixth edition of this classic reference is welcome news for the materials science community. It is indispensable both to current students and to those of us whose formal training in thermodynamics and thermochemistry occurred years ago. The change in title from *Metallurgical Thermochemistry* to *Materials Thermochemistry* reflects the dedication of the authors to extending the tradition of providing a critical reference to reflect the current status of the materials field.

The sixth edition has been extensively revised and updated. Approximately one-

third of the references have been published since the appearance of the 5th edition in 1979. In addition to updated tables of thermochemical data and discussions of new experimental techniques, this edition has added illustrations of their applications to issues of current interest such as environmental pollution in materials processing, production of oxide superconductors, and chemical vapor deposition of ceramics. The examples provide a quick refresher for those of us who do not often use thermochemical principals but who have a sporadic, urgent need to apply them to current problems. The book is suitable for use as a text or reference for undergraduate or graduate students and is an essential reference for scientists and engineers in materials research, development, and practice.

The volume is divided into a discussion of the theoretical concepts, experimental techniques for determining ther-

mochemical data, methods of estimating such data, and examples of the thermochemical treatment of materials problems. Critically evaluated data for thermodynamic properties of inorganic compounds and for metallic solutions are contained in two tables.

During the late stages of the preparation of this edition, O. Kubaschewski died in Aachen. His co-authors, C.B. Alcock and P.J. Spencer, have completed the revision in a manner that is a fitting tribute to Dr. Kubaschewski. It is hoped that they will continue this tradition of providing current and accurate data in an easily usable form.

*Reviewer: Carl J. McHargue is a professor of materials science and engineering and director, Center for Materials Processing at the University of Tennessee-Knoxville. His main research theme is surface modification of ceramics using ion beams.* □

## CALENDAR

Upcoming: June 6–8, Science of Finishing; June 6–9, Powder Metallurgy World Congress and Exhibition; June 6–9, 1994 Intl. Workshop on Superconductivity; July 18–22, Conf. on Emerging Optoelectronic Technologies; July 21–22, MRS-J Summer Meeting

To list an event in the Calendar, contact D.M. Varner, Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237-6006; (412) 367-3003; fax (412) 367-4373.

MRS, A-MRS, C-MRS, E-MRS, MRS-I, MRS-J, MRS-Korea, MRS-T, Mexican-MRS, or IUMRS at the end of an entry indicates sponsorship or co-sponsorship of an event by the International Union of Materials Research Societies or one of its adhering bodies. "Endorsed" identifies events endorsed by MRS.

▼ identifies a new or revised entry this month.

See the March 1994 MRS BULLETIN for May 1994 Calendar entries.

### JUNE 1994

1–3  
Structures Under Shock and Impact  
Madrid, Spain  
S. Owen, Conf. Secretariat,  
Wessex Institute of  
Technology, Ashurst Lodge,  
Ashurst, Southampton, SO4  
2AA, United Kingdom; 44-  
703-293223; fax 44-703-  
292853.

5–10 ▼  
Ordered Molecular and  
Nanoscale Electronics  
Kona, HI  
Engineering Foundation, 345  
E. 47th St., New York, NY  
10017; (212) 705-7835; fax  
(212) 705-7441.

6–7 ▼  
13th Annual Symposium on  
Electronic Materials,  
Processing, and  
Characterization  
Richardson, TX  
L. Magel, Texas Instruments  
Inc., P.O. Box 655936, M/S  
147, Dallas, TX 75265; (214)  
995-5038; fax (214) 995-  
7785. MRS.

6–8  
Science of Finishing  
Rochester, NY  
E. Murphy, Optical Society of  
America, 2010 Massachusetts  
Ave., NW, Washington, DC  
20036; (202) 416-1980; fax  
(202) 416-6100. Endorsed.

6–9  
Powder Metallurgy World  
Congress and Exhibition  
Paris, France  
Conference Secretariat,  
Société Française de  
Métallurgie et de Matériaux,  
1, rue Paul Cézanne, 75008  
Paris; 33-1-49-53-72-37; fax  
33-1-49-53-71-00. Endorsed.

6–9  
1994 Intl. Workshop on  
Superconductivity  
Kyoto, Japan  
T. Kobayashi, Secretariat,  
ISTEC, 81-3-3431-4002; fax  
81-3-3431-4044. Endorsed

6–10  
8th Conf. on Semi-Insulating  
III-V Materials  
Warsaw, Poland  
J. Katcki, Institute of Electron  
Technology, Al. Lotników  
32/46, 02-668 Warsaw,  
Poland; 48-22-47-02-21;  
fax 48-22-47-06-31; e-mail  
katcki@opto.ite.waw.pl.

6–10  
Intl. Plastics Conf.  
Chicago, IL  
Society of the Plastics  
Industry, 1275 K St., NW,  
#400, Washington, DC 20005.  
(202) 371-5200.

7–10  
15th Intl. Cryogenic  
Engineering Conf. and  
Exhibition  
Genoa, Italy  
C. Rizzuto, Chair ICEC 15, c/o  
Consorzio INFIM, Via  
dell'Acciaio 139, I-16152  
Genoa, Italy; 39-10-6514000;  
fax 39-10-6512981.

8–10 ▼  
15th Intl. SAMPE European  
Conf./Exhibition  
Toulouse, France  
SAMPE, P.O. Box 2459,  
Covina, CA 91722; fax (818)  
332-8929.

8–10  
Ceramics in Biomedical  
Applications  
Alfred, NY  
V. Henkes, New York State  
College of Ceramics,  
Bioceramics Institute, Alfred  
Univ., Alfred, NY 14802; (607)  
871-2284; fax (607) 871-2317  
or -3469.

13–15  
54th Annual Conf. on Physical  
Electronics  
Knoxville, TN  
P. Green, Solid State Div.,  
ORNL, P.O. Box 2008, MS-  
6033, Oak Ridge, TN 37831-  
6033; (615) 576-1864; fax  
(615) 574-4143.

13–16 ▼  
13th Biennial Conf. on Natl.  
Materials Policy  
Williamsburg, VA  
B. Houston, Federation of  
Materials Societies, 1899 L  
St. NW, Ste. 500, Washington,  
DC 20036; (202) 296-9282;  
fax (202) 833-3014.

13–17  
European Vacuum Conf.  
Uppsala, Sweden  
L. Westerberg, Svedberg Lab.,  
Box 533, S-751 21 Uppsala,  
Sweden.

13–17  
Xth Intl. Conf. on Ion  
Implantation Technology  
Catania, Italy  
IIT 94 Organizing Committee,  
c/o Dipartimento di Fisica,  
Corso Italia, 57, I-95129  
Catania, Italy; 39-95-591912;  
fax 39-95-7139154.

- 15-17  
Collective Phenomena in Polymer Physics  
London, ON, Canada  
T. Lookman, Dept. of Applied Mathematics, Univ. of Western Ontario, London, ON N6A 5B7 Canada.
- 15-17  
16th Symposium on Applied Surface Analysis (ASSD Topical Conf.)  
Burlington, MA  
J. Geller, Geller Microanalytical, One Intercontinental Way, Peabody, MA 01960; (508) 535-5595.
- 19-24  
American Nuclear Society Annual Meeting  
New Orleans, LA  
ANS, 555 N. Kensington Ave., La Grange Park, IL 60525; (708) 352-6611.
- 19-2  
Materials Science and Implant Orthopedic Surgery II (NATO Adv. Study Inst.)  
Chania, Crete, Greece  
N. Kossovsky, Dept. of Pathology, UCLA Medical Center, 10833 Le Conte Ave., Los Angeles, CA 90024-1732; (310) 206-1763; fax (310) 206-5178.
- 20-24  
Frontiers of Electron Microscopy in Materials Science  
Oakland, CA  
W.E. King, Chemistry and Materials Science Dept. L-356, Lawrence Livermore National Laboratory, Livermore, CA 94550; (415) 423-6547; fax (415) 423-7040.
- 21-23 ▼  
2nd Microgravity Fluid Physics Conf.  
Cleveland, OH  
B.S. Singh, MS 500-327, NASA-Lewis Research Center, 21000 Brookpark Rd., Cleveland, OH 44135; (216) 433-5396.
- 21-23 ▼  
7th Intl. SAMPE Electronic Materials and Processes Conf.  
Parsippany, NJ  
SAMPE, P.O. Box 2459, Covina, CA 91722; fax (818) 332-8929.
- 21-23  
Localized Damage 94: Computer-Aided Assessment and Control  
Udine, Italy  
S. Owen, Conf. Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO4 2AA, United Kingdom; 44-703-293223; fax 44-703-292853.
- 21-24  
Rapid Solidification and Processing Technologies (NATO Adv. Research Workshop)  
West Point, NY  
M.A. Otonari, U.S. Army ARDEC, Picatinny Arsenal, NJ 07806-5000; (201) 724-5746; fax (201) 361-7378.
- 22-24  
Electronic Materials Conf.  
Boulder, CO  
TMS Meeting Services Dept., 420 Commonwealth Dr., Warrendale, PA 15086; (412) 776-9050; fax (412) 776-3770.
- 25-30  
Solar '94: Golden Opportunities for Solar Prosperity  
San Jose, CA  
B.M. Thayer, Solar '94, American Solar Energy Society, 2400 Central Ave. G-1, Boulder, CO 80301; (303) 443-3130; fax (303) 443-3212.
- 26-1  
American Crystallographic Assn. Annual Meeting  
Atlanta, GA  
American Crystallographic Assn., P.O. Box 96, Ellicott Station, Buffalo, NY 14205-0096; fax (716) 852-4846.
- 26-1  
Bonding to Glass (Gordon Research Conf.)  
Tilton, NH  
D.E. Day, Materials Research Center, Univ. of Missouri-Rolla, Rolla, MO 65401; (314) 341-4354; fax (314) 341-2071.
- 27-29  
Intl. Special Emphasis Symposium on Superalloys 718, 625, 706 and Derivatives Issues  
Pittsburgh, PA  
TMS Meeting Services Dept., 420 Commonwealth Dr., Warrendale, PA 15086; (412) 776-9050; fax (412) 776-3770.
- 27-1  
4th Intl. Conf. and Exhibition of the World Congress on Superconductivity  
Orlando, FL  
World Congress on Superconductivity, P.O. Box 27805, Houston, TX 77227; (713) 895-2500; fax (713) 469-5788.
- 29-1  
Computer-Aided Design in Composite Material Technology  
Southampton, United Kingdom  
L. Johnstone, CADCOMP 94 Conf. Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO4 2AA, United Kingdom; 44-703-293223; fax 44-703-292853.
- JULY 1994**
- 1-4  
Superconductivity and Superconducting Materials Technology  
Florence, Italy  
8th CIMTEC, Forum on New Materials, Topical Symposium IV, P.O. Box 174, 48018 Faenza, Italy; 39-546-22461 or -664143; fax 39-546-664138 or -663362.
- 3-9  
Synchrotron Radiation in Materials Science  
Chester, United Kingdom  
G.N. Greaves, Daresbury Lab., Warrington WA4 4AD, United Kingdom.
- 4-7  
7th Intl. Vacuum Microelectronics Conf.  
Grenoble, France  
D. Celler, Société Français du Vide, IVMC'94, 19 rue du Renard, 75004 Paris, France; 33-1-42-78-15-82; fax 33-1-42-78-63-20.
- 5-9  
Materials & Mechanisms of Superconductivity/High-Temperature Superconductors  
Grenoble, France  
M<sup>2</sup>S-HTSC-IV Secretariat, CNRS, 25, av. des Martyrs, B.P. 166, 38042 Grenoble Cédex 9, France; 33-76-88-12-30; fax 33-76-88-12-95; e-mail m2s-hstsc@labs.poly-cnrs-gre.fr.
- 10-23  
Physics and Materials Science of High-Temperature Superconductors III (NATO Adv. Study Inst.)  
Porto Carras, Greece  
N.G. Error, Chairman, Dept. of Materials Science and Engineering, 848 Benedum Hall, Univ. of Pittsburgh, Pittsburgh, PA 15261; (412) 624-9721; fax (412) 624-8069.
- 11-15  
41st Intl. Field Emission Symposium  
Rouen, France  
D. Blavette, Univ. de Rouen CNRS, URA CNRS 808, Faculté des Sciences de Rouen, Place Imile Blondel, BP118-76134, Mont-Saint-Aignan Cédex, France; 33-35-14-66-51; fax 33-35-14-66-52.
- 12-15  
5th Optoelectronics Conf.  
Chiba, Japan  
S. Suzuki, OEC'94 Publicity & Registration Sub-Committee Chair, c/o Business Center for Academic Societies Japan, Conf. Dept., 5-16-9 Honkomagome, Bunkyo-ku, Tokyo 113, Japan; 81-3-5814-5800; fax 81-3-5814-5823.
- 14-15 ▼  
Japan Intl. SAMPE Technical Seminar  
Kyoto, Japan  
Mr. Maruoka, Japan Chapter of SAMPE, Meguroeki Higashiguchi Bldg., 3-1-5 Kamiosaki, Shinagawa-ku, Tokyo 102, Japan; 81-3-3449-0091; fax 81-3-3445-8013.
- 17-22  
Intl. Conf. on Solid→Solid Phase Transformations in Inorganic Materials '94  
Farmington, PA  
TMS Meeting Services Dept., 420 Commonwealth Dr., Warrendale, PA 15086; (412) 776-9050; fax (412) 776-3770.
- 17-22  
4th Intl. Conf. on the New Diamond Science and Technology  
Kobe, Japan  
Secretariat, ICNDST-4, c/o Japan Convention Services, Inc., Osaka Branch, Sumitomo Seimei Midousuji Bldg. 13F, 14-3, Nishitenma 4-chome, Kita-ku, Osaka 530, Japan; 81-6-311-2131; fax 81-6-311-2130.
- 18-22  
Conf. on Emerging Optoelectronic Technologies  
Bangalore, India  
SPIE Technical Program Committee/India 94, P.O. Box 10, Bellingham, WA 98227-0010; (206) 676-3290; fax (206) 647-1445. **Endorsed.**
- 18-22  
XIIIth Intl. Congress on Electron Microscopy  
Paris, France  
B. Jouffrey, SFME, 67 rue Maurice Gunsbourg, 94205 Ivry-sur-Seine Cédex, France; 33-1-46702844; fax 33-1-46708846.
- 18-29 ▼  
Materials and Processes for Surface and Interface Engineering (NATO Adv. Study Inst.)  
Castéra-Verdun, France  
Y. Pauleau, Nuclear Research Center (CENG), CEREM-DEM-SGSA-LTS, 38054 Grenoble Cédex 9, France; 33-76-88-59-62; fax 33-76-88-51-30.
- 21-22  
**MRS-J Summer Meeting**  
Kawasaki, Japan  
MRS-J, Kanagawa Research Center, W304, 3-2-1 Sakato, Takatsu-ku, Kawasaki 213, Japan; 81-44-819-2001; fax 81-44-819-2009. **MRS-J.**
- 24-29  
SPIE Annual Meeting  
San Diego, CA  
SPIE, P.O. Box 10, Bellingham, WA 98227-0010; (206) 676-3290; fax (206) 647-1445.
- 24-29  
Nonlinear Optics: Materials Fundamentals and Applications Topical Meeting  
Waikaloa, HI  
IEEE/LEOS, 445 Hoes Ln., P.O. Box 1331, Piscataway, NJ 08855-1331; (908) 562-3893; fax (908) 562-1571.
- 25-27 ▼  
29th Microwave Power Symposium  
Chicago, IL  
C. Ledbetter, Intl. Microwave Power Institute, 10210 Letherleaf Ct., Manassas, VA 22111; (703) 257-1415; (703) 257-0213.
- 25-28  
Intl. Metallographic Society/ASM Convention  
Montreal, PQ, Canada  
ASM Member Services Center, Materials Park, OH 44073; 1-800-336-5152; fax (216) 338-4634.
- 25-29  
2nd Intl. Conf. on Computer Simulation of Radiation Effects in Solids  
Santa Barbara, CA  
T. D. de la Rubia, COSIRES 94, L-268, Lawrence Livermore Natl. Lab., Livermore, CA 94550; (510) 422-6714; fax (510) 422-7300; e-mail delarubia@lnl.gov.

## AUGUST 1994

- 1-5  
2nd Intl. Conf. on f-Elements  
Helsinki, Finland  
L. Niinistö, ICFE-2 Conf. Chair, Helsinki Univ. of Technology, Dept. of Chemical Engineering, Kemistintie 1, FIN-02150 Espoo, Finland; 358-451-2600; fax 358-462-373.

- 7-12  
Order/Disorder in Solids  
(Gordon Research Conf.)  
New London, NH  
M.A. White, Dept. of  
Chemistry, Dalhousie Univ.,  
Halifax, NS, Canada B3H 4J3;  
(902) 494-3894; fax (902)  
494-1310.
- 7-12  
Plastic Deformation of  
Ceramics  
Snowbird, UT  
Engineering Foundation, 345  
E. 47th St., New York, NY  
10017; (212) 705-7836; fax  
(212) 705-7441.
- 8-12 ▼  
11th Intl. Conf. on Application  
of High Magnetic Fields in  
Semiconductor Physics  
Cambridge, MA  
D. Heiman, SEMIMAG-94  
Chair, MIT Francis Bitter Natl.  
Magnet Lab, NW14-4121,  
Cambridge, MA 02139-4307;  
(617) 253-0806; fax (617)  
253-5405; e-mail heiman@  
slipknot.mit.edu.bitnet.
- 10-11 ▼  
Aerospace Environmental  
Technology Conf.  
Huntsville, AL  
R. Jackson or K. Weaver, UAH  
Conf. and Special Programs,  
Wilson Hall, Rm. 129,  
Huntsville, AL 35899-0700;  
(800) 448-4035 or (205) 895-  
6372; fax (205) 895-6760.
- 14-19  
Architectural Design of  
Ceramic Structures for  
Optimum Performance  
(Gordon Research Conf.)  
New Hampton School, NH  
D.J. Green, Dept. of Materials  
Science and Engineering,  
Pennsylvania State Univ., 201  
Steidle, University Park, PA  
16802; (814) 865-4992; fax  
(814) 865-2917.
- 14-19  
22nd Intl. Conf. in the Physics  
of Semiconductors  
Vancouver, BC, Canada  
C. Schwerdtfeger, Physics  
Dept., Univ. of British  
Columbia, Vancouver, BC,  
Canada V6T 1Z1; (604) 822-  
3853; fax (604) 822-5324.
- 15-November 11 ▼  
Research Workshop on  
High Temperature  
Superconductivity  
Canberra, ACT, Australia  
M.P. Das, Dept. of Theoretical  
Physics, Research School of  
Physical Sciences and  
Engineering, Australian Natl.  
Univ., Canberra, ACT 0200,  
Australia; 61-6-249-3066; fax  
61-6-249-4676; e-mail  
mpd105@phys.anu.edu.au.
- 17-19 ▼  
1st Intl. Particle Technology  
Forum and Exposition  
Denver, CO  
American Institute of Chemical  
Engineers, Programming  
Dept., 345 E. 47th St., New  
York, NY 10017; (212) 705-  
7344; fax (212) 752-3297.
- 20-25  
33rd Conf. of Metallurgists  
Toronto, ON, Canada  
C. Twigge-Molecey, Technical  
Program Chairman, Hatch  
Associates, 2800 Speakman  
Dr., Mississauga, ON, Canada  
L5K 2R7; (905) 855-7600; fax  
(905) 855-8270.
- 22-26  
7th Intl. Conf. on Super-  
lattices, Microstructures, and  
Microdevices  
Banff, AB, Canada  
Symposium Secretariat,  
ICSMM-7, National Research  
Council Canada, Ottawa, ON,  
Canada K1A 0R6; (613) 993-  
9431; fax (613) 957-9828.
- 22-29  
XXVIIth Congress AMPERE  
on Magnetic Resonance  
Kazan, Tatarstan  
N.M. Suleimanov, Zavoisky  
Physical-Technical  
Institute, Sibirsky trakt 10/7,  
Kazan 420029, Tatarstan,  
Russian Federation; 95-8432-  
760503; fax 95-8432-765075.
- 23-26 ▼  
3rd Intl. Meeting on  
Advanced Processing and  
Characterization Technologies  
Yokohama, Japan  
H. Nakashima, APCT '94, ISIR,  
Osaka Univ., 8-1 Mihogaoka,  
Ibaraki, Osaka 567, Japan; 81-  
6-877-5111, ext. 3580; fax 81-  
6-876-1364.
- 23-26  
Intl. Conf. on Solid State  
Devices and Materials  
Yokohama, Kanagawa, Japan  
SSDM '94, c/o Business Center  
for Academic Societies Japan,  
5-16-9 Honkomagome,  
Bunkyo-ku, Tokyo 113, Japan;  
81-3-5814-5800; fax 81-3-  
5814-5823.
- 28-2  
8th Intl. Conf. on Molecular  
Beam Epitaxy  
Osaka, Japan  
S. Gonda, MBE-VIII, Institute  
of Scientific and Industrial  
Research, Osaka Univ., 8-1  
Mihogaoka, Ibaraki, Osaka  
567, Japan; 81-6-877-5111,  
ext. 3575 or 3577; fax 81-6-  
877-6447.
- 28-2  
Conf. on Lasers and Electro-  
Optics, joint with 5th European  
Quantum Electronics Conf.  
Amsterdam, The Netherlands  
K. Kovatch, CLEO/Europe '94/  
EQEC '94, IEEE/LEOS, 445  
Hoes Lane, P.O. Box 1331,  
Piscataway, NJ 08855-1331;  
(908) 562-3898; fax (908)  
562-1571.
- 28-2  
15th European  
Crystallographic Meeting  
Dresden, Germany  
P. Paufler, Institut für  
Kristallographie, Univ. of  
Leipzig, Schamhorstrasse 20,  
O-7030 Leipzig, Germany.
- 29-3  
X-Ray Absorption Fine  
Structure  
Berlin, Germany  
XAFS Secretariat, Dept. of  
Physics, Freie Univ., Arnimalle  
14, D-1000 Berlin 33,  
Germany.
- 30-1  
XIIIth Intl. Conf. on  
Thermoelectrics  
Kansas City, MO  
B. Mathiprakasam, Midwest  
Research Institute, 425 Volker  
Blvd., Kansas City, MO 64110-  
2299; (816) 753-7600, ext.  
528; fax (816) 753-8420.
- SEPTEMBER 1994**
- 1-6 ▼  
Intl. Workshop on the  
Anharmonic Properties of  
High- $T_c$  Cuprates  
Bled, Slovenia  
D. Mihailovic, J. Stefan  
Institute, Univ. of Ljubljana,  
Jamova 39, 61111 Ljubljana,  
Slovenia; 38-6-61-125-9199;  
fax 38-6-61-219-385.
- 4-9  
2nd European Conf. on  
Molecular Electronics  
Kloster Banz, Germany  
J.U. von Schütz, ECME 94, 3.  
Phys. Inst. Univ. Stuttgart,  
Pfaffenwaldring 57, D-70550  
Stuttgart, Germany; 49-711-  
685-5273; fax 49-711-685-  
5281.
- 5-7 ▼  
4th Intl. Conf. on Electronic  
Ceramics  
Aachen, Germany  
R. Waser, Electroceramics IV,  
Institut für Werkstoffe der  
Elektrotechnik II, RWTH  
Aachen Univ. of Technology,  
D-52056 Aachen, Germany;  
49-241-80-7812; fax 49-241-  
876389.
- 7-9  
7th Conf. on Superconductivity  
and Applications  
Buffalo, NY  
E. Routhier, Conf. Secretary,  
New York State Institute on  
Superconductivity, State Univ.  
of New York, 330 Bonner Hall,  
Buffalo, NY 14620; (716) 645-  
3114; fax (716) 645-3349.
- 11-15  
5th Intl. Conf. on Hydrogen  
Effects on Material Behavior  
Moran, WY  
N.R. Moody, Sandia National  
Laboratories-8712, Livermore,  
CA 94551-0969; (510) 294-  
2622; fax (510) 294-3410.
- 11-16  
XIII European Chemistry at  
Interfaces Conf.  
Kiev, Ukraine  
V.A. Pokrovskiy, XIII ECIC,  
Institute for Surface  
Chemistry, Prospect Nauky,  
31, Kyiv 252022, Ukraine; 7-  
44-264-04-70; fax 7-44-264-  
04-46.
- 12-15  
European Adhesion Conf.  
Mulhouse, France  
Institute of Materials, EURADH  
'94, 1 Carlton House Terrace,  
London SW1Y 5DB, United  
Kingdom; fax 44-71-823-1638.
- 12-15  
Intl. Microscopy and Image  
Analysis Conf. and Exhibition  
London, United Kingdom  
A. Winton, Exhibition  
Organiser, Royal  
Microscopical Society, 37/38  
St. Clements, Oxford OX4 1AJ,  
United Kingdom; 44-865-248-  
768; fax 44-865-791237.
- 18-21  
4th Intl. Symposium on  
Aerogels  
Berkeley, CA  
R.W. Pekala, ISA4, P.O. Box  
808, L-322, Chemistry &  
Materials Science Dept.,  
Lawrence Livermore Natl.  
Laboratory, Livermore, CA  
94550; (510) 422-0152; fax  
(510) 423-4897.
- 18-22 ▼  
Aperiodic Crystals  
Lausanne, Switzerland  
Aperiodic '94, Institute of  
Crystallography, Univ. of  
Lausanne, BSP, 1015  
Lausanne, Switzerland.
- 19-21 ▼  
2nd Intl. Symposium on Ultra  
Clean Processing of Silicon  
Surfaces  
Bruges, Belgium  
Timshel Conf. Service, UCPSS  
'94, J.B. Van Monsstraat 8,  
B-3000 Leuven, Belgium; 32-  
16-29-00-10; fax 32-16-29-  
05-10.
- 19-23  
14th IEEE Intl. Semiconductor  
Laser Conf.  
Maui, HI  
K. Kovatch, IEEE/LEOS, 445  
Hoes Lane, P.O. Box 1331,  
Piscataway, NJ 08855-1331;  
(908) 562-3898; fax (908)  
562-1571.
- 20-22  
American Society for  
Composites' 9th Technical  
Conf., joint with the Center for  
Composite Materials' 20th  
Anniversary Research  
Symposium  
Newark, DE  
T-W. Chou, Center for  
Composite Materials, Univ. of  
Delaware, Newark, DE 19716;  
(302) 831-2904; fax (302)  
831-8525.
- 20-25 ▼  
4th Intl. Seminar on Highly  
Conducting Organic Materials  
for Molecular Electronics  
Zajackowo, Poland  
A. Graja, Conf. Chair, Institute  
of Molecular Physics, Polish  
Academy of Sciences,  
Smoluchowskiego 17/19, 60-  
179 Poznan, Poland; 48-61-  
612475; fax 48-61-684-524;  
e-mail graja@marta.ifmpan.  
poz.edu.pl.
- 25-30 ▼  
Diamond Films 94: 5th  
European Conf. on Diamond,  
Diamond-like and Related  
Materials  
Il Ciocco, Tuscany, Italy  
G. Spear, Elsevier Advanced  
Technology, P.O. Box 150,  
Kidlington, Oxford OX5 1AS,  
United Kingdom; 44-865-  
512242; fax 44-865-310981.
- 26-28 ▼  
8th Intl. Conf. on Surface  
Modification Technologies  
Nice, France  
SF2M-SMT8, 1 rue Paul  
Cézanne, 75008 Paris, France;  
33-1-49-53-72-37; fax 33-1-  
49-53-71-00.
- 26-29 ▼  
**Magneto-Optical Recording  
Intl. Symposium**  
Tokyo, Japan  
MORIS '94 Secretariat,  
Business Center for Academic  
Societies Japan, 5-16-9  
Honkomagome, Bunkyo-ku,  
Tokyo 113, Japan; 81-3-5814-  
5800; fax 81-3-5814-5823.  
**Endorsed.**
- OCTOBER 1994**
- 2-6 ▼  
Society of Rheology 66th  
Annual Meeting  
Philadelphia, PA  
N. Wagner, Dept. of Chemical  
Engineering, Univ. of  
Delaware, Newark, DE 19716;  
(302) 831-8079; (302) 831-  
1048.

- 2-7 ▼  
 Federation of Analytical Chemistry and Spectroscopy Societies 21st Annual Conf. St. Louis, MO  
 J.A. Brown, FACSS Natl. Office, 198 Thomas Johnson Dr., Ste. S-2, Frederick, MD 21702-4317; (301) 846-4797; fax (301) 694-6860.
- 2-7  
 ASM/TMS '94 Materials Week Rosemont, IL  
 P. Weir, Conf. Mgr., ASM TDB Programming Committee, ASM International, Materials Park, OH 44073-0002; 1-800-336-5152; fax (216) 338-4634; P. Weiss, TMS Programming Committee, 420 Commonwealth Dr., Warrendale, PA 15086-9987; (412) 776-9050; fax (412) 776-3770.
- 3-5 ▼  
 5th Intl. Symposium on Physical Metallurgy of Cast Iron  
 Nancy, France  
 J. Lacaze, SCI 5, LSG2M, Ecole des Mines, 54042 Nancy Cédex, France; 33-83-58-42-66; fax 33-83-57-97-94.
- 3-7  
 2nd Intl. Conf. on Nanostructured Materials  
 Stuttgart, Germany  
 H-E. Schaefer, Univ. Stuttgart, Institut für Theoretische und Angewandte Physik, Pfaffenwaldring 57, D-70550 Stuttgart, Germany; 49-711-685-5261; fax 49-711-685-5271; e-mail nano94@itap.physik.uni-stuttgart.de.
- 4-6 ▼  
 Advanced Metalization for ULSI Applications in 1994  
 Austin, TX  
 Continuing Education in Engineering, Univ. of California Extension, 2223 Fulton St., Berkeley, CA 94720; (510) 642-4151; fax (510) 643-8683.
- 4-6 ▼  
 Physics and Chemistry of Mercury Cadmium Telluride and Other IR Materials 1994  
 U.S. Workshop  
 San Antonio, TX  
 J. Morreale, Palisades Institute for Research Services, Inc., 201 Varick St., Ste. 1140, New York, NY 10014; (212) 620-3371; fax (212) 620-3379.
- 4-7 ▼  
 5th Conf. on Crystal Growth  
 Atlantic City, NJ  
 E. Porbansky, ACCG/east-94, 163 Carson Dr., Colonia, NJ 07067; (908) 382-1806.
- 9-14  
 Electrochemical Society 186th Meeting  
 Miami, FL  
 B.E. Rounsavill, Meetings and Programs Mgr., The Electrochemical Society, 10 S. Main St., Pennington, NJ 08534-2896; (609) 737-1902; fax (609) 737-2743.
- 9-14  
 Intl. Congress on Metallurgy and Materials Technology  
 São Paulo, Brazil  
 Executive Secretariat, Especifica S/C Ltda., Rua Augusta 2516, 2º andar, Conj. 22, 01412-100, São Paulo SP, Brazil; 55-11-881-7388; fax 55-11-883-2650.
- 10-12  
 3rd Intl. Symposium on Structural and Functional Gradient Materials  
 Lausanne, Switzerland  
 N. Cherradi, Conf. Secretariat, FGM '94, Swiss Federal Institute of Technology of Lausanne, Materials Department, LMM, CH-1015 Lausanne, Switzerland; 41-21-693-29-15/50; fax 41-21-693-46-64.
- 12-15  
 Intl. Conf. on Laser Materials Processing and Exhibition  
 Chongqing, China  
 Z. Zhirong, Dept. of Metallurgy and Materials Engineering, Chongqing Univ., Chongqing, Sichuan 630044, China; 86-964893, ext. 2451 or 2894; fax 86-811-966704.
- 13-16 ▼  
 2nd NSF-Sponsored Materials Chemistry Workshop  
 St. Louis, MO  
 M.J. Hampden-Smith, Dept. of Chemistry, Univ. of New Mexico, Albuquerque, NM 87131; (505) 277-4713; (505) 277-2609.
- 16-21  
 Applied Superconductivity Conf.  
 Boston, MA  
 B.A. Keesler, MIT Plasma Fusion Center, NW@-121, Cambridge, MA 02139; (617) 253-8303; fax (617) 253-0807.
- 17-20 ▼  
 Intl. Conf. on Scandium and Prospects of Its Use  
 Moscow, Russia  
 Conf. Secretariat, Central Institute of Economics and Conversion of Military Industry, 44a Varshavskoe Shosse, Moscow 115230, Russia; 7-95-111-15-66, 135-96-72, or 252-19-56; fax 7-95-111-14-17, 135-86-80, or 252-19-56.
- 19-21  
 2nd Intl. Conf. on Recycling of Metals  
 Amsterdam, Holland  
 ASM Member Services Center, Materials Park, OH 44073; 1-800-336-5152; fax (216) 338-4634.
- 23-27  
**Scientific Basis for Nuclear Waste Management XVIII**  
 Kyoto, Japan  
 K. Naito, Nuclear Safety Commissioner, 2-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan; 81-3-3581-5271; fax 81-3-3581-2487.  
 R.C. Ewing, Dept. of Earth and Planetary Sciences, Univ. of New Mexico, Albuquerque, NM 87131; (505) 277-4163; fax (505) 266-1105. **MRS, IUMRS, MRS-J.**
- 24-26 ▼  
 7th ICMC '94 Topical Meeting: Nonmetallic Materials and Composites at Low Temperatures  
 Honolulu, HI  
 N.A. Munshi, ICMC '94, Composite Technology Development Inc., 2400 Central Ave., Ste. H, Boulder, CO 80301; fax (303) 447-0140.
- 24-27 ▼  
 26th Intl. SAMPE Technical Conf.  
 Atlanta, GA  
 SAMPE Intl. Business Office, P.O. Box 2459, Covina, CA 91722; (818) 331-0616, ext. 610; fax (818) 332-8929.
- 24-28 ▼  
 3rd Intl. Conf. on the Science and Technology of Nanometer Structures  
 Denver, CO  
 C. Marrian, NANO III, Code 6804, Naval Research Lab., Washington, DC 20375; (202) 767-3150; fax (202) 767-4998; e-mail marrian@estd.nrl.navy.mil.
- 24-28 ▼  
 Intl. Workshop on Semiconductor Materials Characterization  
 Gaithersburg, MD  
 D.G. Seiler, Workshop Chair, NIST, Bldg. 225, Rm. A305, Gaithersburg, MD 20899-0001; (301) 975-2081; fax (301) 948-4081; e-mail seiler@sed.eeel.nist.gov.
- 24-28  
 41st Annual AVS Symposium  
 Denver, CO  
 American Vacuum Society, 120 Wall St., 32nd Fl., New York, NY 10005; (212) 248-0200.
- 31-4 ▼  
 Intl. Symposium on Advanced Transportation Applications  
 Aachen, Germany  
 ISATA Secretariat, 42 Lloyd Park Ave., Croydon, CR0 5SB, United Kingdom; 44-681-3069; fax 44-81-686-1490.
- 31-4  
 IEEE/LEOS Annual Meeting  
 Boston, MA  
 IEEE/LEOS, 445 Hoes Ln., P.O. Box 1331, Piscataway, NJ 08855; (908) 562-3893; fax (908) 562-1571.
- NOVEMBER 1994**
- 6-10  
 Intl. Adhesion Symposium  
 Pacifico Yokohama, Japan  
 H. Mizumachi, Chemistry of Polymeric Materials, Univ. of Tokyo, Yayoi 1-1-1, Bunkyo-ko, Tokyo 113, Japan; 81-3-3812-2111, ext. 5266; fax 81-3-5684-0299.
- 6-11 ▼  
 Science of Hydrocarbon Resources (Gordon Conf.)  
 Oahu, HI  
 S.T. Oyama, Dept. of Chemical Engineering, Virginia Polytechnic Institute and State Univ., Blacksburg, VA 24061; (703) 231-5309; (703) 231-5022.
- 7-9 ▼  
 National Educators' Workshop: Update '94  
 Gaithersburg, MD  
 J.A. Jacobs, NEW: Update 94, Norfolk State Univ., 2401 Corpview Ave., Norfolk, VA 23504; (804) 683-8109; (804) 683-8215.
- 7-9  
 10th Annual ASM/ESD Advanced Composites Conf. and Exposition  
 Dearborn, MI  
 ASM Member Services Center, Materials Park, OH 44073; 1-800-336-5152; fax (216) 338-4634.
- 7-10  
 13th Int. Conf. on the Application of Accelerators in Research and Industry  
 Denton, TX  
 J.L. Duggan, Univ. of N. Texas, Dept. of Physics, P.O. Box 5368, Denton, TX 76203; (817) 565-3252 or -3250; fax (817) 565-2227.
- 13-18  
 American Nuclear Society Winter Meeting  
 Washington, DC  
 ANS, 555 N. Kensington Ave., La Grange Park, IL 60525; (708) 352-6611.
- 14-16 ▼  
 Intl. Symposium on Functional and High Performance Polymers  
 Taipei, Taiwan, ROC  
 G-H. Hsiue, IPST Secretariat, Natl. Tsing Hua Univ., Dept. of Chemical Engineering, Hsinchu, Taiwan 300, ROC; fax 886-35-726825; e-mail ipst@nthu.edu.tw.
- 14-16 ▼  
 Synthesis and Processing of Electronic Materials  
 Topical Conf.  
 San Francisco, CA  
 American Institute of Chemical Engineers, Programming Dept., 345 E. 47th St., New York, NY 10017; (212) 705-7344; fax (212) 752-3297.
- 14-19  
 Ionizing Radiation and Polymers  
 Guadeloupe, France  
 A. LeMoël, SRSIM/LPI, CEA CEN Saclay, Bâtiment 466, F-91191 Gif Sur Yvette Cédex, France; 33-1-6908-5485; fax 33-1-6908-9600.
- 28-2  
**MRS Fall Meeting**  
 Boston, MA  
 M. Geil, Materials Research Society, 9800 McKnight Rd., Pittsburgh, PA 15237-6006; (412) 367-3003; fax (412) 367-4373. **MRS.**
- DECEMBER 1994**
- 5-8  
 4th Intl. Tribology Conf.  
 Perth, WA, Australia  
 Conference Manager, AUS-TRIB '94, The Institution of Engineers, Australia, Western Australia Div., 712 Murray St., Perth, WA 6005, Australia; 61-9-332-5609; fax 61-9-332-5609.
- 11-14  
 4th NCB Intl. Seminar on Cement and Building Materials  
 New Delhi, India  
 S.C. Rastogi, Organising Secretary, 4th NCB Intl. Seminar, National Council for Cement and Building Materials, M-10, S. Extension II, Ring Rd., New Delhi 110 049 India; 91-11-6440133; fax 91-11-6468868.
- 14-18  
 2nd IUMRS Intl. Conf. in Asia  
 Hsinchu, Taiwan, ROC  
 C-M. Wang, IUMRS-ICA-94, ITRI, Materials Research Labs., 195 Chung-hsing Rd., Sec. 4, Bldg. 77, Chutung, Hsinchu, 31015, Taiwan, ROC; 886-35-820216; fax 886-35-820217 or 820262. **IUMRS, MRS-T.**

19-22

**Intl. Conf. on Electronic Materials**

Hsinchu, Taiwan, ROC  
J-M. Liu, Conf. Secretary,  
Materials Research Laboratories,  
ITRI, Conf. Dept., ICEM '94,  
195 Chung-hsing Rd., Sec. 4, Bldg. 77, Chutung,  
Hsinchu 31015, Taiwan, ROC;  
886-35-820064; fax 886-35-820247 or 820262. **IUMRS, MRS-T.**

**JANUARY 1995**

25-27 ▼

2nd Pacific Rim Intl. Conf. on Modeling of Casting and Solidification Processes  
Hitachi, Japan  
H. Kodama, MCS2-'95, Hitachi Research Lab., Hitachi, Ltd., 7-1-1 Omika-cho, Hitachi-shi, Ibaraki-ken, 319-12 Japan; 81-294-23-5856; fax 81-294-21-2429.

**FEBRUARY 1995**

1-3 ▼

Golden Gate Materials Technology Conf.  
San Francisco, CA  
Golden Gate Conf., American Welding Society, P.O. Box 351040, Miami, FL 33135-9896; (800) 334-9353 or (305) 443-9353, ext. 278.

5-10

**9th Intl. Conf. on Ion Beam Modification of Materials**  
Canberra, ACT, Australia  
Conf. Secretariat, IBMM '95, ACTS, GPO Box 2200, Canberra, ACT, 2601, Australia; 61-6-257-3299; fax 61-6-257-3256. **A-MRS.**

**MARCH 1995**

20-23

**9th Oxford Conf. on Microscopy of Semiconducting Materials**  
Oxford, United Kingdom  
Administrator, The Royal Microscopical Society, 37/38 St. Clements, Oxford OX4 1AJ, United Kingdom; 44-865-248768; fax 44-865-791237. **Endorsed.**

26-31

**CORROSION/95**  
Orlando, FL  
NACE International, P.O. Box 218340, Houston, TX 77218-8340; (713) 492-0535; fax (713) 492-8254.

**APRIL 1995**

17-21

**MRS Spring Meeting**  
San Francisco, CA  
M. Geil, Materials Research Society, 9800 McKnight Rd., Pittsburgh, PA 15237-6006; (412) 367-3003; fax (412) 367-4373. **MRS.**

**MAY 1995**

21-26

Electrochemical Society  
187th Meeting  
Reno, NV  
B.E. Rounsavill, Meetings and Programs Mgr., The Electrochemical Society, 10 S. Main St., Pennington, NJ 08534-2896; (609) 737-1902; fax (609) 737-2743.

28-2

7th Intl. Conf. on Mechanical Behaviour of Materials  
The Hague, The Netherlands  
Congress Office ASD, P.O. Box 40, 2600 AA Deift, The Netherlands; 31-15-120234; fax 31-15-120250.

**JUNE 1995**

11-16

American Nuclear Society  
Annual Meeting  
Atlantic City, NJ  
ANS, 555 N. Kensington Ave., La Grange Park, IL 60525; (708) 352-6611.

18-21

**Intl. Workshop on Superconductivity**  
Maui Island, HI  
T. Kobayashi, ISTEK, 34-3 Shimbashi 5-chome, Minato-ku, Tokyo 105, Japan; 81-3-3431-4002; fax 81-3-3431-4044. **IUMRS, MRS.**

**AUGUST 1995**

14-18

10th Intl. Conf. on Composite Materials  
Vancouver, BC, Canada  
A. Poursartip, Co-Chair, ICCM-10, Dept. of Metals and Materials Engineering, Univ. of British Columbia, Vancouver, BC, Canada V6T 1Z4; (604) 822-3665; fax (604) 822-3619.

20-25

12th Intl. Symposium on Plasma Chemistry  
Minneapolis, MN  
L. Graven, ISPC12, 315 Pillsbury Dr., S.E., Univ. of Minnesota, Minneapolis, MN 55455-0139; (612) 625-9023; fax (612) 626-1623.

**SEPTEMBER 1995**

4-8





Surface Modification of Metals by Ion Beams  
San Sebastian, Spain  
J.I. Onate, SMMB'95, INASMET, Camino de Portuete 12, 20009 San Sebastian, Spain; 34-43-218022; fax 34-43-217560. □

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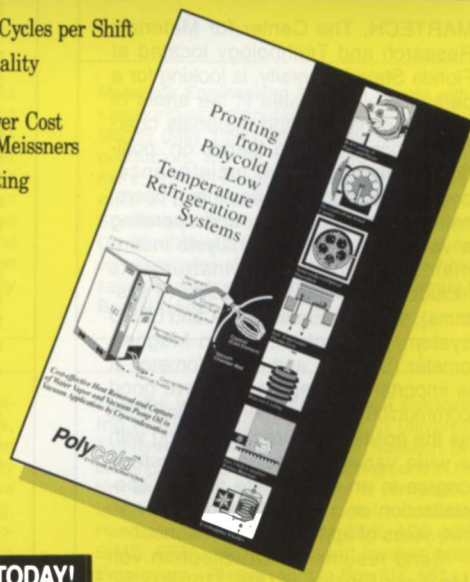
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