# Which Hamamatsu Streak Camera System Is **Best For You?**



- 2 PICOSECOND
- 10 PICOSECOND
- SYNCHROSCAN
- 1 NANOSECOND
- X-RAY

All models feature an exclusive Hamamatsu streak tube with builtin microchannel plate (MCP) for weak signal amplification > 104. No external image intensifier needed. All are available with fully integrated electronic readout.

SEND COUPON FOR BROCHURE

# HAMAMATSU

HAMAMATSU CORPORATION 420 SOUTH AVENUE MIDDLESEX, NEW JERSEY 08846 PHONE: (201) 469-6640

International Offices in Major Countries of Europe and Asia

2 PICOSECOND 10 PICOSECOND SYNCHROSCAN	☐ 1 NANOSECOND ☐ X-RAY
My Application is	
Name	
Title	
Company	
Phone	
Address	
City	
State	Zip

#### 10-14 JIII 1985 2nd Int Conf on Conduction and 7-10 14-19 Breakdown in Solid Dielectrics Erlangen, Germany 5/85 7th Int Conf on Ion Beam Analy-7-12 sis Berlin, FRG 1/85 8-11 → 3rd Conf on Coherent Laser Radar: Technology and Applications [OSA] Malvern, UK (J. M. Vaughan, Royal Signals and Radar Establishment, Ministry of Defense, St. Andrews Road, PD316, Great Malvern, Worcestershire, WR14 3PS, UK) ly 1/85

- UK) Gordon Res Conf on Polymer Colloids Tilton, NH 5/85 8-12
- Gordon Res Conf on Point De-8-12 fects, Line Defects and Interfaces in Semiconductors Plymouth, NH 5/85
- Gordon Res Conf on Molec Energy Transfer Wolfeboro, NH 5/85 8-12
- 6th Int Trieste Symp on Fractals 8-12 in Phys Trieste, Italy 3/85
- 17th Int Conf on Phenomena in Ionized Glass Budapest, Hungary 8-12
- S Course on Lasers and Optics 8-19 for Applications Cambridge, MA 5/85
- Gordon Res Conf on Quantum Solids and Fluids Plymouth, NH 5/85

- Gordon Res Conf on Physical Organic Chem Wolfeboro, NH 5/
- Conf on the Dynamics of Molecular Collisions Snowbird, UT 1/84
- Wksp on Tokamak Start-up-Problems and Scenarios Related to the Transient Phases of Longburn Operations Erice (Sicily), Ita-
- 15-18 → Stat Mech Conf Univ. of Maine, Orono (P. Kleban, LASST, Barrows Hall, Univ. of Maine at Orono, Orono, ME 04469 [207-581-2254])
- 17th Europhys Conf on Macromolecular Phys: Morphology of Polymers Prague, Czechoslovakia 5/85
- Gordon Res Conf on Phys and Chem of Laser Diagnostics in 15-19 Combustion New London, NH 5/
- Gordon Res Conf on Fractals An-15-19 trim, NH 5/85
- Gordon Res Conf on C Growth Plymouth, NH 5/85 Crystal 15-19
- 8th Int Symp on Detonation Albuquerque, NM 7/84 15-19
- Corrosion: The Environmental Degradation of Materials MIT, Cambridge, MA 3/85
- S Course on Plasma Processing 15-19 for Microelectronic Fabrication MIT, Cambridge, MA 3/85

Please note: Complete information is given only for new listings (marked → ) or for newly revised listings (marked .). The listings are coded as follows: date title [sponsor] location (contact) [abstract deadline]

All items previously listed give the issue of PHYSICS TODAY that carries a complete listing.

This calendar appears in alternate (odd-numbered) months. Notices should be sent to: Calendar, PHYSICS TODAY, 335 East 45th Street, New York, NY 10017 at least three months in advance.

AAAS	American Association for the Advancement of Science	IEEE	Institute of Electrical and Electronics Engineers
AAPM	American Association of Physicists in Medicine	IOP	Institute of Physics (London) International Union of Pure and Applied
AAPT	American Association of Physics		Chemistry
AAS	Teachers American Astronomical Society	IUPAP	International Union of Pure and Applied Physics
ACA AGU	American Crystallographic Association	LBL	Lawrence Berkeley Laboratory
ANS	American Geophysical Union American Nuclear Society	LLNL	Lawrence Livermore National Laboratory
APS	American Physical Society	NAS	National Academy of Sciences
AVS	Acoustical Society of America American Vacuum Society	NBS NRC	National Bureau of Standards Nuclear Regulatory Commission
BNL	Brookhaven National Laboratory	NRL	Naval Research Laboratory
CNRS	Centre National de la Recherche Scientifique	NSF ORNL	National Science Foundation
DOE	Department of Energy	OSA	Oak Ridge National Laboratory Optical Society of America
DPG IAEA	Deutsche Physikalische Gesellschaft International Atomic Energy Agency	S of R SPS	Society of Rheology Society of Physics Students

- 15-20 Elementary Course in Design and Analysis of Scientific Experiments MIT, Cambridge, MA 3/85
- 15-26 NATO Adv Study Inst: Learning Phys and Math via Computers San Miniato, Italy 1/85
- 18-24 Int Europhysics Conf on High-Energy Phys Bari, Italy 5/85
- 18-28 5th Int Sch for Intermediate Energy Nuclear Phys Venice, Italy 11/84
- 20-22 Joint Symp on Swarm Studies and Inelastic Electron-Molecule Collisions Tahoe City, CA 3/85
- 22-24 22nd Ann Conf on Nuclear- and Space-Radiation Effects Monterey, CA 5/85
- 22-25 1985 Int Symp on Microwave Tech in Industrial Development Campinas, Brazil 7/84
- 22-26 Gordon Res Conf on Spin-Polarized Quantum Systems Antrim, NH 5/85
- 22-26 Gordon Res Conf on Fluids in Permeable Media Tilton, NH 5/85
- 22-26 Gordon Res Conf on Corrosion New London, NH 5/85
- 22-26 APS Top Conf on Shock Waves in Condensed Matter Spokane, WA 5/85
- 22-26 Int Course on Applied Laser Tooling Vigo, Spain 5/85
- 22-26 7th Int Sum Inst in Surface Science University of Wisconsin, Milwaukee 3/85
- 22-26 Summer Computer Simulation Conf and Exhibits Chicago, IL 3/ 85
- 22-26 8th Int Symp on NQR Darmstadt, West Germany 1/85
- 23-25 Phys Interactions and Energy Exchange at the Gas-Solid Interface Hamilton, Ontario, 3/84
- 24-30 14th Int Conf on Phys of Electronic and Atomic Collisions Palo Alto, CA 3/84
- 28-17 NATO Advanced Study Inst on Supersymmetry and Supergravity Edinburgh, Scotland 3/85
- 29-2 Gordon Res Conf on Nonlinear Optics and Lasers Wolfeboro, NH 5/85
- 29-2 Gordon Res Conf on Dynamics of Gas-Surface Interactions New London, NH 5/85
- 29–2 2nd Int Synchrotron Radiation Instrumentation Conf Stanford University, Stanford, CA 1/85
- 29–2 S Course on Detection of Infrared Radiation Santa Barbara, CA 3/85
- 29-16 Nonlinear Dynamical Systems: Integrability and Qualitative Behavior Universite de Montreal, Montreal, Canada 1/85

#### AUGUST 1985

- 4-8 4th Top Mtg on Photoacoustic, Thermal and Related Sciences Quebec, Canada. 9/84
- 4-9 → 11th Intl Conf on Atomic Collisions in Solids [NBS] Georgetown Univ., Washington, DC (K. Stang, A353 Physics Building, NBS, Gaithersburg, MD 20899 [301-921-2255])

- 4-9 10th Int Colloq Dynamics of Explosions and Reactive Systems Berkeley, CA 7/84
- 4-9 Sum Sch on NMR in Medicine: Instrumentation and Clinical Applications, Univ. of Portland, OR 1/85
- 5-9 Gordon Res Conf on Reactive Polymers, Ion Exchanges and Adsorbents Antrim, NH 5/85
- 5-9 Gordon Res Conf on Physical Metallurgy Plymouth, NH 5/85
- 5-9 Gordon Res Conf on Ion-Containing Polymers New London, NH 5/85
- 5-9 Gordon Res Conf on Glass New Hampton, NH 5/85
- 5-9 Gordon Res Conf on Coatings and Films Plymouth, NH 5/85
- 5-9 43rd Ann Mtg of the Electron Microscopy Soc of Amer Louisville, KY 5/85
- 5-9 Symp on Path Integrals from meV to MeV Bielefeld, West Germany 5/85
- 5-9 S Course on Nonionizing Radiations: Biophysical and Biological Bases Cambridge, MA [617-253-2101]) 5/85
- 5–9 S Course on Fiber Optic Communication Systems Santa Barbara, CA 3/85
- 6-8 → EMI Metrology S Course [NBS]
  Boulder, CO (K. Zimmerman, Office
  of Conference Services, Campus
  Box 153, Univ. of Colorado,
  Boulder, CO 80309 [303-4925151])
- 9-10 Bates Users Theory Gr Wksp on Relativistic Effects and Hadronic Structure MIT, Cambridge, MA 5/ 85
- 11-15 27th Ann Mtg of AAPM Seattle, WA 11/83
- 12-15 DPF Ann Mtg Eugene, OR (R. Hwa, Inst. of Theoretical Sci., Univ. of Oregon, Eugene, OR 97403 [503-686-4204]) note changed date and location
- 12-16 Gordon Res Conf on Chem and Phys of Solids Plymouth, NH 5/85
- 12-16 Gordon Res Conf on Molec Electronic Spectroscopy Wolfeboro, NH 5/85
- 12-16 Cryogenic Eng Conf and Int Cryogenic Materials Conf Cambridge, MA 1/85
- 12-16 Gordon Conf on Nuclear StructureTilton, NH 3/85
- 12-17 4th Int Conf on Recent Progress in Many-Body Theories San Francisco, CA 1/85
- 12-23 → Sum Sch in Nonlinear Science Experiment and Theory in Chaotic Systems Univ. of California, San Diego (P. Velasquez, Project in Nonlinear Science, B-003, UC San Diego, La Jolla, CA 92093 [619-452-2899])
- 15-17 Symp on Yukawa's Meson Theory Kyoto, Japan 1/85
- 18-23 29th Ann Int Tech Symp on Optical and Electro-Optical Engineering San Diego, CA 5/85
- 18-23 ACA Ann Mtg Stanford Univ., Palo Alto, CA 1/85



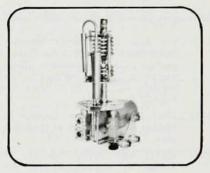
# Your CRYOGENIC CONNECTION

announces

AT LAST

A 4.5 K Closed Cycle Refrigerator System Under \$25,000.00

- Laboratory Size and Industrial Quality
- 1/4 Watt at 4.5 K



Model LTS-21-H, Temp.

#### For:

- Helium Reliquefiers
- Detector Cooler
- Low (or no) Boiloff Dewars

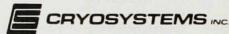
#### **OPTIONAL FEATURES:**

- Variable Temperature Control
- Optical Access
- Vibration Free Mounting

Cryosystems offers a full line of 4.5 K Closed Cycle Refrigerator Systems from 1/4 to 4 Watts with variable temperatures from 2.5 K to 300 K.

Also Available—FTIR, VSM, Mossbauer and Special IR Systems. We Custom Engineer to Your Needs.

To learn more about your CRYOGENIC CONNECTION write or call:



190 Heatherdown Dr. • Westerville, OH 43081 • 614/882-2796 • TELEX: 24-1334

- 18-23 17th Int Symp on Free Radicals Granby, CO 1/85
- 18-23 Symp on Applic of Thin-Film Multilayer Structures to Figured X-ray Optics San Diego, CA 3/85
- 19-23 → Gordon Res Conf on Phys and Chem of Liquids Plymouth, NH (A. M. Cruickshank, Gordon Research Ctr., Univ. of Rhode Island, Kingston, RI 02881-0801 [401-783-4011])
- 19-23 → Gordon Res Conf on Gravitational Effects in Materials, Separation Processes and Living Systems New London, NH (A. M. Cruickshank, Gordon Research Ctr., Univ. of Rhode Island, Kingston, RI 02881-0801 [401-783-4011])
- 19-23 → Int Conf on Neutron Scattering
  [DOE] Santa Fe, NM (R. Silver,
  Physics Div., Neutron Scattering
  Group, Los Alamos, Natl. Lab., Los
  Alamos, NM 87545,
  [505-667-6069]) [4/15/85]
- 19–23 → 13th Ann Sum Conf [N.Y.S. Science Supervisors Assn.] Elmira, NY P. Bradney, Corning Free Acad., 11 W. Third St., Corning, NY 14830)
- 19-23 5th Int Cong on Quantum Chem Montreal, Canada 1/85
- 19-24 → 9th Ann Latin Amer Symp on Solid-State Phys Mar de Plata, Argentina (M. Weissman, Departmento de Fisica, CNEA, Av. del Libertador 8250, 1429 Buenos Aires, Argentina)
- 19-24 1985 Int Symp on Lepton and Photon Interactions at High Energies Kyoto, Japan 3/85
- 22-4 NATO Adv Study Inst on New Vistas in Electro-Nuclear Phys Banff, Alberta, Canada 3/85
- 25-28 → Density Matrix and Density Functional Conf Kingston, Ontario, Canada (R.M. Erdahl, Dept. of Mathematics and Statistics, Queen's Univ., Kingston, Ontario, Canada K7L 3N6)
- 25–30 Int Nuclear Phys Conf Harrogate, UK 3/85
- 25-31 → 3rd Mexican Sch on Statistical Phys [Mexican Phys Soc] Oaxtepec, Morelos, Mexico (R.Rechtman, Depto. de Fisica, Facultad de Ciencias, UNAM, Apdo. Postal 70-646, 04510 Mexico, D.F.)
- 26-30 → Gordon Res Conf on Superconducting Films Holderness Sch, Plymouth NH (V. Z. Kresin, Chairman, Univ. of California, Lawrence Berkeley Lab, Berkeley, CA 94720)
- 26–30 Int Conf on Magnetism San Francisco, CA 5/84
- 26-30 6th Int Symp Polarization Phenomena in Nuclear Physics Osaka, Japan 7/84
- 26–30 → 4th Australian Laser Conf Sydney, Australia (P. G. Browne, Sch. of Math and Physics, Macquarie Univ., North Ryde N.S.W. 2113, Australia)
- 26–31 → 10th Hawaii Conf in High-Energy Phys Univ. of Hawaii, Manoa, Honolulu, HI (High-Energy Physics Group, Univ. of Hawaii, Manoa, 2505 Correa Rd., Honolulu, HI 96822 [808-948-7391])
- 26-3 Course and Wksp on Basic Physical Processes in Fusion Plasmas Varenna, Italy 3/84

- 26-3 Course and Wksp on Basic Phys Processes of Toroidal Fusion Plasmas Villa Monastero, Varenna, Italy 3/85
- 26–31 → 2nd Int Conf of Phonon Phys [Eur. Phys. Soc.] Budapest, Hungary (N. Kroo, Central Research inst. for Physics, Hungarian Acad. of Sciences, POB 49, H-1525 Budapest, Hungary 400)
- 26–7 → NATO Adv Study Inst on Amorphous and Liquid Materials Centro di Cultura della Universita, Passo della Mendola, Italy (E. Lüscher, Physik Dept. Technische Universität München, D-8046 Garching, Germany)
- 27-29 → S Course on MOS Devices for Advanced VLSI [Continuing Education Inst.] Washington, DC (S.Broydo, Continuing Education Inst., 10889 Wilshire Blvd, Los Angeles, CA 90024 [408-730-8800])
- 28-30 3rd Australian Optical Soc Conf-4th Australian Laser Conf Sydney, Australia 3/85

#### SEPTEMBER 1985

- 2–5 **Biennial Conf of IOP Microscopy and Analysis Group** Newcastle upon Tyne, UK 5/84
- 2-6 \*11th Int Colloq on Magnetic Films and Surfaces Monterey, CA (F. B. Humphrey, Electrical and Computer Eng. Dept., Carnegie-Mellon University, Schenley Park, Pittsburgh, PA 15213) [5/15/85]
- 2-6 11th Int Conf on Amorphous and Liquid Semiconductors Rome, Italy 5/84
- 2-6 → 12th Eur Conf on Controlled Fusion and Plasma Phys [Eur. Phys. Soc.] Budapest, Hungary (L. Pocs, Central Research Inst. for Physics, Hungarian Acad. of Sciences, P.O.B. 49, H-1525 Budapest, Hungary)
- 2-13 NATO Advanced Study Inst on Laser Surface Treatment of Metals San Miniato, Italy 3/85
- 2-20 Wksp on Phys of Nonconventional Energy Sources and Material Sci for Energy Trieste, Italy 3/85
- 4-6 **5th Int Symp on Electrets** Heidelberg, W. Germany 3/85
- 5-14 Course and Wksp, on Applications of rf Waves to Tokamak Devices Varenna, Italy 3/84
- 8-13 7th Int Free-Electron Laser Conf Tahoe City, CA (D. Prosnitz, LLL, P.O. Box 808, L-626, Livermore, CA 94550 [415-423-4235]) note changed contact
- 9-13 8th Int Conf on Noise in Physical Systems—3rd Int Conf on 1/f Noise Rome, 3/85
- 9-13 Int Conf on Hypernuclear and Kaon Phys Upton, NY 3/85
- 9-19 → NATO Adv Study Inst on Hydrogen in Disordered and Amorphous Solids Rhodes, Greece (G. Bambakidis, Dept. Physics, Wright State Univ., Dayton, OH 45435 [513-873-2954])
- 10-12 2nd Conf Exhibition on Sensors and Applications Southampton, UK 5/84

- 11-13 → S Course on Air Pollution Modeling [Wessex Inst. of Tech.]
  Ashurst, Southampton, UK (E. Newman, 125 High Street, Southampton SO1 0AA, England)
- 15-19 → 4th Int Conf on Vibrations at Surfaces [IOP] English Lake District (D.A. King, Donnan Laboratories, The University, Liverpool L69 3BX, England) [6/17/85]
- 15-19 14th NATAS Conf San Francisco, CA 3/85
- 15-20 → Cambridge Symp on Optical and Electro-Optical Engineering [SPIE] Cambridge, MA (SPIE, P.O. Box 10, Bellingham, 98227 [206-676-3290]) Washington
- 15-1 30th Scottish Univ Sum Sch in Phys: Synchrotron Radiation Sources and Applications Aberdeen, Scotland and Daresbury Lab, England 3/85
- 16–18 Conf on Strength and Structure in Carbons and Graphites University of Liverpool, United Kingdom 3/85
- 16–20 → 7th Europhysics Study Conf on Nuclear Phys: Synthesis and Structure of Exotic Nuclei and Atoms [Eur. Phys. Soc.] Varna, Bulgaria (Zh. Zhelev, Inst. of Nucl. Res. and Nucl. Energy, Boul. Lenin 72, BG-Sofia 1134)
- 16–20 → Symp on Recent Developments in Nonequilibrium Thermodynamics Sant Feliu de Guixols, Spain (D. Jou, Departament de Termologia, Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain)
- 16-20 → Int Conf on Applications of the Mössbauer Effect Leuven, Belgium (R. Coussement, Instituut voor Kern-en-Stralingsfysika, Celestijnenlann 200 D, B-3030 Leuven, Belgium)
- 16-20 → Quantum Chem: Transition Metals and Coordination Chem [Societe Française de Chimie, NATO] Strasbourg, France (A. Veillard, Universite Louis Pasteur, Institut Le Bel, 4, rue Blaise Pascal, 67000 Strasbourg, France)
- 18-21 → 8th Euro Conf On Visual Perception [OSA] Peniscola, Spain (M. Aguilar, Universidad de Valencia, Departamento de Optica, Facultad de Fiscas, 50 Burjasot, Valencia, Spain)
- 23-25 1st Int Symp on Aeorgel Universität Würzburg, West Germany 3/85
- 23-27 13th Int Conf on Solid-State Nuclear Track Detectors Rome, Italy 3/85
- 23-4 Mediterranean Sch on Plasma
  Astrophys: Plasma Penetration
  into a Star's Magnetosphere
  [Univ. of Crete] Colymbari, Crete,
  Greece (J. Ventura, Dept. of Physics, Univ. of Crete, Heraklion,
  Greece)
- Wksp on the Generation of High Fields for Particle Acceleration to Very High Energies Laboratori Nazionali dell' INFN, Frascati, Italy 3/85
- 25-27 → Excitons, Excimers, and Solitons in Dielectric Solids Ulm, F. R. Germany (P. Reineker, Abteilung für Theor. Physik, Universität Ulm, 7900 Ulm, Germany)
- 26-27 → Top Mtg on Gradient-Index Opti-

cal Imaging Systems VI [OSA] Sicily, Italy (A.E.I., Ufficio Centrale, Viale Monza 259, 20126 Milano Mi, Italy)

- 30-4 → Int Wksp on New Trends in Quantum Optics and Electrodynamics [Eur. Phys. Soc.] Rome, Italy (F. De Martini, Dipartimento di Fisica dell' Universita', Piazza Aldo Moro, 2, 00185 Rome, Italy)
- 30-4 3rd Int Symp on Radiation Physics Ferrara, Italy 3/85
- 30-4 → 3rd Electron Beam Test Course
  [Oregon Graduate Center] Beaverton, Oregon (Oregon Graduate
  Center, 19600 NW Von Neumann
  Drive, Beaverton, OR 97006 [503-690-1130])

#### OCTOBER 1985

- 1–4 → 5th Int Conf on Integrated Optics and Optical Fiber Communication; 11th Eur Conf on Optical Communication [Eur. Phys. Soc.] Venice, Italy (Ist. Int. delle Communicazioni, Via Pertinace Villa Piaggio, 1-16125 Genova, Italy)
- 2-4 → 1st Int Optical Memory Conf, Tokyo, Japan [Rothchild Consultants of San Francisco, USACO Corp. of Tokyo] Tokyo, Japan (Technology Opportunity Conference, P.O. 14817, San Francisco, CA 94117 [415-626-1133])
- 7-12 → 36th Int Astronautical Federation Ann Cong [Swedish Society of Aeronautics and Astronautics] Alvsjö, Stockholm, Sweden (J. P. Layton, 60 Penn-Lyle Rd., Princeton Junction, NJ 08550 [609-426-3259])
- 9-11 → S Course on MOS Devices for Advanced VLSI San Francisco, CA (S. Broydo, Continuing Education Inst., 10899 Wilshire Blvd., Los Angeles, CA 90024 [408-730-8800])
- 10-12 Conf on Heat and Detachment in Crustal Extension on Continents and Planets Sedona, AZ 3/85
- 13-17 → 5th Ann Mtg of the Bioelectrical Repair and Growth Soc Boston, MA (Wendell Williams, BRAGS, P.O. Box 64, Dresher, PA 19025)
- 13-17 1985 AIME Fall Mtg on Irradiation Effects Associated with Ion Implantation Toronto, Ontario 3/85
- 13-18 12th Eur Conf on the Phys and Chem of Complex Nuclear Reactions Neve Ilan, Israel 5/84
- 13-19 Int Energy Conf and Exhib San Juan, Puerto Rico 3/85
- 14–17 → 57th Ann Mtg of the S of R Ann Arbor, MI (S. J. Kurtz, Union Carbide Corp., P.O. Box 670, Bound Brook, NJ 08805 [201-356-8000]) [5/1/85]
- 14-18 → OSA Annual Mtg Washington, DC (OSA, 1816 Jefferson Place, NW, Washington, DC 20036 [202-223-8130]) [6/5/85]
- 15–17 → Top Mtg on Optical Data Storage
  [IEEE, OSA, AVS, Soc. of PhotoOptical Instrumentation Eng.] Washington, DC (OSA, 1816 Jefferson
  PI, N.W., Washington, DC 20036
  [202-223-0920]) [7/1/85]
- 15–17 → Transport and Relaxation Processes in Random Materials

# We have it all!



## Cryogenic Systems

AT TRI Research we believe that the whole is greater than the sum of its parts. Provided of course that each part is complete in itself.

Our systems include open and closed cycle refrigerators, temperature sensors and instrumentation, not to mention total applications support and documented performance.

No other systems provide such complete control. TRI Research can provide it all to you.



## T-2000 Cryo Controller

The most accurate, stable and dependable cryogenic temperature controller of its type. Extremely easy to use with readout and control directly in temperature for all sensor types and continuously adjustable heater power range. Full IEEE-488 compatibility and four sensor inputs facilitate complete automation.



## Cryo Cal™ Sensors

Since 1965 the name most often identified with the highest quality cryogenic temperature sensors for university, government and industry users. Complete range of sensor types, including Cryo Carbon<sup>TM</sup>, diode, germanium, platinum RTD and specials. NBS traceable calibrations, 11th order polynomial fits and GenAB interpolation tables available.



### Application Support

We have dedicated ourselves to helping you achieve important new results in your work. We feel that your measurement must form the basis for a configuration of apparatus specific to your needs. That is why we stand ready to specially design as little or as much of your system as appropriate. We can supply you with turn-key systems complete with applications software. Complete cryogenic engineering consulting services available.



## Supplies

CS-1000B Constant Current Source, wire, hermetic connectors, thermal interface materials ... many hard to find items are available from TRI Research together with the knowledge required to use them properly. Just ask for our catalog.

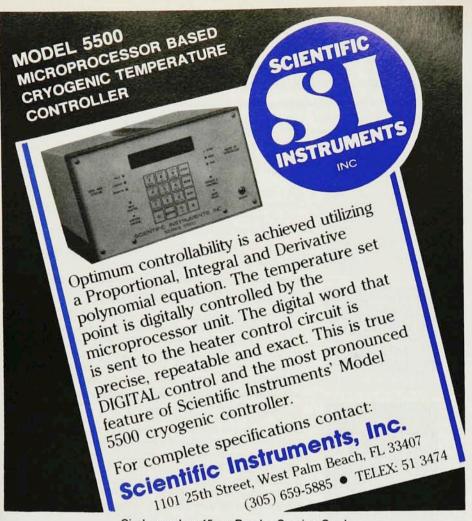


Our products are in use at virtually every major center of cryogenic activity in the world. Contact TRI Research and let us help you turn your next idea into a result.

Write or call collect: 2459 University Ave. Saint Paul, MN 55114 USA TELEX: 955439 INTL DIV; ATTN TRI Phone: 612/645-7193



AUTOMATED CRYOGENIC SYSTEMS



Circle number 45 on Reader Service Card

# Microtex Scientific Imaging Lets Your Computer See The Light

An integrated scientific imaging workstation from Microtex can solve your image acquisition problems, and provide results in minutes instead of days.

Whether your application is high speed, low light, UV or IR, a Microtex system can capture, analyze and display almost any image an experiment can create.

For expert applications engineering and further information, contact:



# MICROTEX DIGITAL IMAGING

80 Trowbridge Street Cambridge, MA 02138 617-491-2874 Telex 948-014

- Gaithersburg, MD (R. J. Rubin, Rm. B210, Bldg. 224, NBS, Gaithersburg, MD 20899)
- 17-18 → 24th Eastern Theoretical Phys Conf [NSF] Drexel Univ. Philadelphia, PA (R. Gilmore, Dept. of Physics and Atmospheric Science, Drexel Univ., Philadelphia, PA 19104 [215-895-2707])
- 20-23 19th Int Thermal Conductivity Conf Cookeville, TN 3/85
- 20-24 4th Symp on Separation Sci and Tech for Energy Applications Knoxville, TN 3/85
- 21-23 → Int Wksp on Nuclear Structure at High Spin, High Excitation, and High Momentum Transfer McCormick's Creek State Park, Spencer, IN (H. Nann, Indiana Univ. Cyclotron Facility, Bloomington, IN 47405 [812-335-9365])
- 21-25 → 18th IEEE Photovoltaic Specialists [IEEE] Riviera Hotel, Las Vegas, Nevada [L.L. Kazmerski,SERI, 1617 Cole Blvd., Golden, CO 80401 [303-231-1115])
- 21–25 11th Ann Int Symp for Testing and Failure Analysis Long Beach, CA 3/85
- 23-25 → Symp on Nuc Sci and Nuc Power Sys [IEEE] San Francisco, CA (R. S. Larsen, SLAC, Stanford Univ., P.O. Box 4349, Stanford, CA 94305 [415-854-3300, X-2726])
- 24–25 → 12th Ann Synchrotron Radiation Lab Users Group Mtg SLAC, Stanford, CA (C. Mitchell, SSRL, P.O. Box 4349, Bin 69, Stanford, CA 94305 [415-854-3300])
- 28-30 → APS Div of Nuc Phys Mtg Asilomar, CA (P. Little, LBL, Bldg. 80-C, Berkeley, CA 94720 [415-486-6386])
- 28-30 17th Ann Symp on Optical Materials for High-Power Lasers NBS, Boulder, CO 3/85
- 7th Int Wksp on Laser Interaction and Related Plasma Phenomena Naval Postgraduate School, Monterey, CA 3/85

#### **NOVEMBER 1985**

- 4-7 2nd Int Conf on Fundamentals of Fracture Gatlinburg, TN 3/85
- 3–8 APS Div of Plasma Phys Mtg San Diego, CA
- 4–8 110th Ann Mtg of ASA Nashville, TN 11/83
- 7-9 Mtg of Texas Sec of AAPT College Station, TX 5/84
- 18-22 → Symp on Fusion Eng [IEEE] Austin, TX (H. W. Harris, Univ. of Texas, Austin, Fusion Research Ctr., Austin, TX 78712 [512-471-4576])
- 18-22 → 17th Eur Conf on Laser Interaction with Matter [ENEA, Laboratorio Fusione Laser, Centro Ricerche Energia Frascati] Rome, Italy (C. B. Soccorsi, Via Valadier, 33, 00193 Rome, Italy)
- 18-22 32nd AVS Natl Vacuum Symp Houston, TX 1/84
- 19-28 → 19th General Assembly: Int Astronomical Union [Eur. Phys. Soc.] New Delhi, India (XIX IAU 85 Sec-

- retariat, Raman Research Inst., Bangalore, 560 080 India)
- 24-27 APS Div of Fluid Dynamics Mtg Tuscon, AZ
- 25-6 → 2nd Int Tech Symp on Optical and Electro-Optical Applied Sci and Eng [ANRT, SPIE] Cannes, France (SPIE, P.O. Box 10, Bellingham, WA 98227-0010)

#### DECEMBER 1985

- 1-4 → 1985 IEEE Intl Electron Devices
  Mtg Washington, DC (M. M. Widerkehr, Courtesy Associates, Inc., 655
  15th Street, N.W., Suite 300, Washington, D.C. 20005) [7/17/85]
- 2-4 → Top Mtg on Optical Bistability [OSA] Tucson, AZ (OSA, 1816 Jefferson Place, N.W., Washington, D.C. 20036 [202-223-8130])
- 2-6 8th Int Conf on Lasers '85 Las Vegas, NV 3/85
- 2-7 → 1985 Fall Mtg of the MRS Boston, MA (J. B. Ballance, MRS,9800 McKnight Road, Suite 327, Pittsburgh, PA 15237)
- 2-7 IAU Symp No 120 on Astrochemistry Goa, India 3/85
- 9-13 10th Int Conf on Infrared and Millimeter Waves Orlando, FL 5/
- 16–20 → Fritz Haber Symp on Methods of Laser Spectroscopy [Israel Acad. of Sciences] Weizmann Inst. of Science, Rehovot, Israel (Y. Prior, Dept. of Chemical Phys., Weizmann Inst. of Science, Rehovot 76100, Israel)
- 18–20 → Solid-State Phys Conf [IOP] Univ. of Reading (IOP, 47 Belgrave Sq., London SW1X 8QX, UK [01-235-6111])

#### **JANUARY 1986**

- 5-8 167th Mtg of AAS Houston, TX 5/
- 13-16→ Int Conf on Viscoelasticity of Polymeric Liquids [CNRS, GFP, GFR] Grenoble, France (J.-M. Piau, Institut de Mecanique de Grenoble, Domaine Universitaire, B.P. 68, 38402 Saint Martin D'Heres, Cedex, France) [6/30/86]
- 19-24 → Conf on Optoelectronics and Laser Applications in Sci and Eng [SPIE] Los Angeles, CA (SPIE, P.O. Box 10, Bellingham, WA 98227 [206-676-3290])
- 27-30 APS/AAPT Mtg Atlanta, GA 1/84

#### FEBRUARY 1986

- 9-12 → 9th Ann Mtg of The Adhesion Soc Hilton Head Island, SC (J.P. Wightman, Virginia Tech., Chem. Dept., Blacksburg, VA 24061 [703-961-5854]) [10/1/85]
- 9-15 → Conf on Adv Tech Optical Telescopes III and Instrumentation in Astronomy VI [SPIE] Tucson, Arizona (SPIE, P.O. Box 10, Bellingham, Washington 98227 [206-676-3290])

- 10–15 4th Int Symp on Quantum Optics University of Waikato, Hamilton, New Zealand 3/85
- 24-26 → Conf on Optical Fiber Communication [OSA] Atlanta, GA (OSA, 1816 Jefferson Pl. NW, Wash., DC 20036 [202-223-8130])[9/6/85]
- 26-28 → Top Mtg on Integrated and Guided-Wave Optics [OSA] Atlanta, GA (OSA, 1816 Jefferson Pl. NW, Wash., DC 20036 [202-223-8130]) [9/6/85]

#### **MARCH 1986**

- 17-21 APS March Mtg Las Vegas, NV 3/
- 22-25 → 6th General Conf of the Condensed Matter Div of the Eur Phys Soc Stockholm, Sweden (G.Grimvall, Dept. Theoretical Phys., Royal Inst. of Tech., S-100 44 Stockholm, Sweden) [1/7/86]
- 24-27 → Top Mtg on Short Wavelength Coherent Radiation [OSA] Monterey, CA (OSA, 1816 Jefferson Pl. NW, Wash. DC 20036 [202-223-8130])
- 31-4 → 1986 Tech Symp Southeast on Optics and Optoelectronics [SPIE] Orlando, FL (SPIE, P.O. Box 10, Bellingham, Washington 98227 [206-676-3290])
- 31-5 → OSA 1986 Spring Mtg Honolulu, Hawaii (OSA, 1816 Jefferson Pl. N.W., Washington, DC 20036 [202-223-8130])

#### **APRIL 1986**

- 3–5 → Joint Mtg of APS and Texas Section AAPT Univ. of Texas, Dallas (J. H. Hoffman, Texas Section of AAPT, Physics Dept. Trinity Univ., San Antonio, TX 78284 [512-736-7424])
- 8-10 → Atomic and Molecular Phys Conf [IOP] Univ. of Aberdeen (IOP, 47 Belgrave Sq., London SW1X 8QX, UK [01-235-6111])
- 13-23 → 3rd Int Tech Symp on Optical and Optoelectronic Applied Sci and Eng [SPIE] Innsburck, Austria (SPIE, P.O. Box 10, Bellingham, Washington 98227 [216-676-3290])

#### MAY 1986

- 12-16 111th ASA Mtg Cleveland, OH 1/ 84
- 12-16 → Int Conf on Heavy Ion Nuclear Collisions in the Fermi Energy Domain [Nat Agencies for Nuclear Research] Caen, France (HICOFED 86, Institut de Physique Nucleaire, B.P. N 1, 91406 Orsay Cedex, France)
- 27-30 → Int Conf on Composite Interfaces
  [Case Western Reserve Univ.]
  Cleveland, OH (H. Ishida, Dept. of
  Macromolecular Sci., Case Western
  Reserve Univ., Cleveland, OH
  44106 [216-368-4285]) [12/1/85]

The New York Academy
of Sciences Conference
on

# OF STRUCTURAL CHANGE IN LIQUIDS AND GLASSES

Sunday-Tuesday, December 1-3, 1985

# Barbizon-Plaza Hotel, New York City

The 3-day symposium will deal with the kinetics of the formation and disintegration of those structures that characterize the glassy state and related liquid and crystalline states, and how these processes are related to the thermodynamic behavior as vitrification takes place. The emphasis will be on the relation between glass, liquid, and crystalline states in general, rather than on particular chemical types of glass-formers; both theoretical and innovative experimental approaches are represented on the program.

There will be a contributed poster session. The deadline for submission of abstracts is September 30, 1985. The abstracts should include the name of the author(s), institution, and a 200-word summary of the work to be presented. Send abstracts to: Dr. Martin Goldstein, Division of Natural Science and Mathematics, Yeshiva University, 2495 Amsterdam Avenue, New York, NY 10033.

Chairs: C. Austen Angell, Ph.D., Purdue University, West Lafayette, Indiana 47907 and Martin Goldstein, Ph.D., Yeshiva University, New York, New York 10033.

Inquiries should be addressed to: Conference Department, The New York Academy of Sciences, 2 East 63rd Street, New York, NY 10021.

# QUALITY

STEP

BY

STEP

BY

STEP



CUSTOM MANUFACTURE, DESIGN. AND THEORETICAL ANALYSIS -PERFORMANCE BY DESIGN.

FLOW CRYOSTATS AND CRYO WORKSTATIONS

STORAGE DEWAR MOUNT WORKSTATIONS

RESEARCH DEWARS AND CRYOSTATS

LIQUID HELIUM TRANSFER LINES HIGH VACUUM CHAMBERS TEMPERATURE SENSORS ELECTRONIC DIP STICK CRYO CONTROLLER **DETECTOR DEWARS** PLUS MORE !!!!!

# CRYO **INDUSTRIES**

of America, Inc.

24 Keewaydin Drive Salem, NH 03079 (603) 893-2060

QUALITY CONSTRUCTION WITH LOWER PRICES THROUGH EFFICIENT MANUFACTURING

### Circle number 47 on Reader Service Card

#### **JUNE 1986**

- → 1986 Quebec Symp on Optical and Optoelectronic Applied Sci 2-6 and Eng [SPIE] Quebec, Canada (SPIE, P.O. Box 10, Bellingham, WA 98227 [216-676-3290])
- →5th Int Conf on Phonon Scatter-2-6 ing in Condensed Matter Urbana. IL (A.C. Anderson, Dept. Phys., Univ. of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801)
- 9-13 \*Int Quantum Electronics Conf [OSA] San Francisco, CA (OSA, 1816 Jefferson Pl. NW, Wash., DC 20036 [202-223-8130])
- 9-13 + Conf on Lasers and Electro-Optics [OSA] San Francisco, CA (OSA, 1816 Jefferson Pl. NW, Wash., DC 20036 [202-223-8130])
- 9-13 → 8th Int. Conf. on Spectral Line Shapes [APS] Williamsburg, VA (R.J. Exton, MS 235A, NASA Langley Research Center, Hampton, VA
- 1986 Ann Mtg of ACA McMaster 22-27 University, Hamilton, Ontario, Canada 3/85
- 30-4 → 4th Int Mtg of Phys Chem: Dynamics of Molecular Crystals [Soc. Francaise de Chimie, Associazione Italiana di Chimica Fisica, Deutsche Bunsengesellschaft Physikalische Chemie, Faraday Division, Royal Society of Chemistry]
  Grenoble, France (SFC,Division de Chimie Physique, Molecular Crystals Conf., 10 rue Vauquelin, F. 75005 Paris, France ) [2/15/86]

#### **JULY 1986**

- 7-11 → Int Optical Computing Conf [OSA] Jerusalem, Israel (ICO, P. O. Box 4413, 61044 Tel-Aviv, Israel)
- 7-11 > 5th Int Conf on Surface Modification of Metals by Ion Beams [Queen's Univ.] Kingston, Ontario, Canada (J.L. Whitton, Dept. of Physics, Queen's Univ., Kingston, Ontario, Canada K7L 3N6 [613-547-2646])
- 14-17 → 4th Int Conf on Megagauss Magnetic-Field Generation and Related Topics Santa Fe, NM (A. Roach, MS P915, Los Alamos National Lab, Los Alamos, NM 87545 [505-667-5653]) [2/1/86]
- 16-18 → Int Top Mtg on Image Detection and Quality [French Optical Soc.] Paris, France (Secretariat executif, A.N.R.T., 75116 Paris, France)
- 23rd Int Conf on High-Energy Phys Berkeley, CA 3/85
- 16-25 → 8th Int Cong on Math Phys [Eur. Soc.] Marseilles, France 86, CPT-CNRS Luminy, Phys. France (IAMP 86, CPT-CNRS Luminy, P.O.B. 907, F-13288 Marseilles Cedex 9, France)
- 24-1 → 12th Int Cong on Acoustics [Eur. Phys. Soc.] Toronto, Canada (Secretariat, Box 123, Station Q, Toronto, Canada M4T 2L7)

#### **AUGUST 1986**

8th Int Conf on Vacuum Ultraviolet Radiation Phys Lund, Sweden 3/85

- 10–13 → Int Conf on Low-Energy Disloca-tion Structures Univ. of Virginia, Charlottesville, VA (D. Murdaugh, Dept. of Conferences and Insti-tutes, Div. of Continuing Education, P.O. Box 3697, 104 Midmont Ln., Charlottesville, VA 22903 [804-924-7141])
- 11-15→IUPAP Int Conf on Stat Phys: Stat Phys 16 Boston, MA (L. Sewell, Physics Dept., Boston Univ., 590 Commonwealth Ave., Boston, MA 02215 [617-353-8000]) Boston
- 17-22 > 30th Ann Int Tech Symp on Optical and Optoelectronic Applied Sci and Eng [SPIE] San Diego, CA (SPIE, P.O. Box 10, Bellingham, Washington 98227 [206-676-3290])
- 18-21 → 11th Int Conf on Electromagnetic Isotope Separators and Techniques Related to Their Applica-NM (W. L. Talbert Jr., MS J514, Los Alamos Natl. Lab., P.O. Box 1663, Los Alamos, NM 87545)
- IUPAP Int Nuc Phys Conf Harro-25-30 gate, UK 3/85

#### SEPTEMBER 1986

- Course and Wksp on Basic and Advanced Fusion Plasma Diag-nostic Techniques Verenna, Villa 3 - 13Monastero, Italy 3/85
- 7-10 \*\* 4th Int Conf on Molecular Beam Epitaxy York, UK (G.J. Davies, British Telecom Research Labs, Martlesham Heath, Ipswich IP5 7RE, UK)
- 8-11 16th Eur Solid-State Device Res Conf Cambridge, UK 7/84
- 8-12 → 6th Int Symp on Gas Flow and Chemical Lasers [OSA] Jerusalem, Israel (S. Rosenwaks, Dept. of Phys., Ben-Gurion Univ., PO Box 653, 84105 Beer Sheva, Israel)
- 15–17 → Carbon Fibers Conf [IOP] Univ. of Salford, UK (IOP, 47 Belgrave Sq., London SW1X 8QX, UK [01-235-61111)
- 28 113th Int Symp on Gallium Arsenide and Related Compounds Hilton Head, SC 3/85

#### OCTOBER 1986

26-31 33rd AVS Nat Vacuum Symp Baltimore, MD 1/84

#### DECEMBER 1986

- 8-12 112th ASA Mtg Anaheim, CA 3/
- 17-19 Ann Solid State Phys Conf 1986 Imperial College, London, UK 3/85

#### **JANUARY 1987**

11-17 → Conf on Optoelectronics and Laser Applications in Sci and Eng [SPIE] Los Angeles, CA (SPIE, P.O. Box 10, Bellingham, WA 98227 [206-676-3290])