conductors was introduced by R. B. Griffiths (Carnegie-Mellon). He reviewed the behavior of critical exponents when the position of the critical point itself depends on external parameters. He suggested that, on the basis of a smoothing postulate, one should expect all the intensive parameters affecting a system to enter into the description of the data on an equivalent basis. J. D. Litster (M.I.T.) discussed the first-order nematic-isotropic transition in liquid crystals. He showed that the Landau theory of critical phenomena gave a satisfactory description of the order parameter. A detailed discussion of the applicability of a scaling equation of state to magnets was presented by M. Vicentini-Missoni (Rome). She showed that the parametric form could give a good fit to data for several real magnets, but that the linear model needs further correction. J. S. Kouvel (University of Illinois at Chicago) reported a study of critical phenomena in Pd-Fe alloys. The data can in all cases be fitted well with the use of the scaling equation of state, and, in the case of the dilute Pd-Fe alloy, give further confirmation of the existence of the "giant moment." A study of fluctuation near the phase transition in one-dimensional superconductors was discussed by R. J. Warburton (Cornell). The lower dimensionality of the single thin whisker crystals makes accessible a critical region in a superconductor which is wider on the temperature scale than that of bulk superconductors. The data are sufficient to differentiate between some of the competing theories of the fluctuations.

The session on transport properties was divided into three parts. Work with the relatively new techniques of light scattering in fluids was discussed by G. Benedek (M.I.T.) and B. Volochine (Saclay). Benedek examined many of the facets of the problem of interpreting data obtained from the scattering of light by critical fluctuations in pure fluids, Xe and SF₆. An old discrepancy concerning the line widths in SF₆ above and below Tₑ (critical temperature) may have been resolved by data showing that a divisor, \( p \rho C_p \) (density time heat capacity at constant pressure), in the line-width expression does not, in fact, vary like a simple exponential along the coexistence curve. Volochine reported that data taken on the binary mixture cyclohexane-aniline were in very good agreement with the mode-mode coupling theory of Kawasaki. In the second part of transport properties, K. Kawasaki (Temple) discussed a theory giving the probability distribution function for the local hydrodynamic variables and the order parameter. The generalized Fokker-Planck equation he derived yields the previous results of dynamical scaling theory for magnets and the lambda transition in liquid helium. In binary liquid mixtures, a second scaling parameter appears to be required for some of the transport coefficients. New experiments with more traditional methods were reported by Peter Heller (Brandeis) and Martin Barmatz (Bell Telephone Laboratories). Heller has studied extensively transport properties in the uniaxial antiferromagnet, FeF₂, using both nuclear magnetic resonance (NMR) and neutron scattering techniques to differentiate between the contributions of the longitudinal and transverse susceptibilities to the NMR line widths. Barmatz has applied the scaling equation of state in the study of the lambda transition in helium in order to anticipate better the effects of gravity over the critical zone in a column of the fluid. The improved analysis of data thereby made possible gives results that again agree well with the theory of Kawasaki. The third part of the session on transport phenomena was concerned with the metal-insulator transition that was reported previously by T. M. Rice to exhibit some of the characteristics of critical points. David Adler (M.I.T.) reviewed the features of such conductivity transitions and discussed several possible mechanisms. T. M. Rice presented a theory on the Mott transition in V₂O₅. No conclusive evidence of critical phenomena in these transitions was presented.

In a final summary session intended to tie together the various aspects of the subject discussed earlier in the week, Widom discussed models displaying asymmetry of contiguous phases near Tₑ, Kac presented remarks concerning the remarkable applicability of molecular-field theory, and Benedek discussed briefly light studies of turbulent flow. Referencing Kelvin's famous 19th-century summary of the comfortable state of physics, Elliott Montroll (Rochester) summarized the current state of knowledge of critical phenomena. He observed that the experimental aspects are well established now, that the data appear to be well described by the phenomenological equations of static and dynamic scaling, but that it would be desirable to improve the theory so as to understand better "small clouds on the horizon," such as the origins of critical exponents and solutions for the nonlinear dynamical equations and the three-dimensional Ising model.

The proceedings of the colloquium will be the topic of a forthcoming McGraw-Hill publication, and will be inscribed in honor of Lars Onsager, "whose exact solution of the two-dimensional Ising model led the way to quantitative treatment of critical phenomena described in these proceedings."

R. E. MILLS, E. ASCHER
R. I. JAFFEE
Battelle Memorial Institute, Columbus Laboratories, Columbus, Ohio, and Advanced Study Center, Geneva, Switzerland

Forthcoming Events

January

11–13. Systems Sciences, 5th intern. conf., Honolulu, Hawaii. (Information Sciences Program, 2565 The Mall, Univ. of Hawaii, Honolulu 96822)
13–14. Molecular Basis of Electron Transport, Biochemistry—Papanicolaou Cancer Research Inst., 4th annual, Miami Beach, Fla. (Biochemistry—PCR1 Winter Symposium, P.O. Box 906, Biscayne Annex, Miami, Fla. 33152)
17–19. American College of Surgeons, sectional mtg., Miami, Fla. (Communications Div., ACS, 55 Erie St., Chicago, Ill. 60611)
HE DEPENDS ON LIGHT

So do plants and other living organisms. That is why the portable, self-contained ISCO Model SR Spectroradiometer is being used for environmental light monitoring under water and in the sky, from the tropics to Antarctica. It is also used for characterization of artificial light sources and other applications.

Using a wedge-interference filter system, the entire spectrum from 380 to 1350 nm can be scanned simply by turning a knob. This system eliminates individual filter changing with preselected wavelength increments which obscure narrow wavelength peaks. Other features include true cosine response, direct reading in spectral intensity units, a chopped beam optical system, and a fiber optic extension head. It is equipped for both battery and line operation. An accessory recorder will plot a continuous spectral distribution curve at preselected intervals.

ISCO Model SR

The new ISCO catalog describes our entire line of research equipment. It is yours for the asking.

INSTRUMENTATION SPECIALTIES COMPANY

4700 SUPERIOR LINCOLN, NEBRASKA 68504
PHONE (402) 434-0231 TELX 48-6453

Circle No. 72 on Readers’ Service Card

24-27. Environmental Design Research Assoc., 3rd annual, Los Angeles, Calif. (W. J. Mitchell, School of Architecture and Urban Planning, Univ. of California, 405 Hilgard Ave., Los Angeles 90024)

27-29. American College of Surgeons, sectional mtg., Sydney, Australia. (Communications Div., ACS, 55 E. Erie St., Chicago, Ill. 60611)


30-7. Role of Surface Properties in Dosage Form Design and Development, 7th annual Arden House Conf. on Industrial Pharmacy, Harriman, N.Y. (S. M. Gross, College of Pharmaceutical Sciences, Columbia Univ., 115 W. 68 St., New York 10023)


February


1-3. Conference on Rapid Penetration of Terrestrial Materials, College Station, Tex. (Penetration Program Committee, Texas Engineering Experiment Sta., Texas A&M Univ., College Station 77843)

3-5. Association for Hospital Medical Education, Chicago, Ill. (T. G. Kummer, AHME, 2001 Jefferson Davis Hwy., Arlington, Va. 22202)

4-5. Problems of the Female Breast as Related to Neoplasms and Reconstruction, New York, N.Y. (R. K. Snyderman, Memorial Sloan-Kettering Cancer Center, 444 E. 68 St., New York 10021)


5-9. American Acad. of Allergy, San Francisco, Calif. (J. O. Kelly, AAA, 225 E. Michigan St., Milwaukee, Wis. 53202)

5-12. Asian and Pacific Congr. of Gastroenterology, Manila, Philippines. (Philippine Soc. of Gastroenterology, P.O. Box 2598, Manila)


6-12. Chemistry of Natural Products, 8th intern. symp., New Delhi, India. (S. Rangaswami, Indian National Science Acad., Bahadur Shah Zafar Marg, New Delhi-1)


8-12. American Group Psychotherapy Assoc., New York, N.Y. (L. Kane, AGPA, 1790 Broadway, New York 10019)


9-19. Ground Water Quality and Treatment, 14th conf., Urbana, Ill. (V. L. Snoeyink, Dept. of Civil Engineering, Univ. of Illinois at Urbana-Champaign, Urbana 61801)

13-17. Recycle Implementation, Pacific Grove, Calif. (Engineering Foundation, 345 E. 47 St., New York 10017)


14-16. American College of Surgeons, sectional mtg., St. Louis, Mo. (Communications Div., ACS, 55 E. Erie St., Chicago, Ill. 60611)


20-23. American Inst. of Chemical Engineers, Dallas, Tex. (P. J. Antwerp, AICE, 345 E. 47 St., New York 10017)


23-25. Society of Professors of Education, Chicago, Ill. (Miss R. Bayles, Atlanta Univ., Atlanta, Ga.)

23-25. Research and Training Reactor Utilization, American Nuclear Soc., Col-
March

1-4. American Acad. of Forensic Sciences, Atlanta, Ga. (J. T. Weston, 44 Medical Dr., Salt Lake City, Utah 84113)

1-5. American College of Cardiology, Chicago, Ill. (W. D. Nelligan, ACC, 9650 Rockville Pike, Bethesda, Md. 20014)

2-3. American Astronomical Soc., Div. on Dynamical Astronomy, College Park, Md. (J. D. Mulholland, Dept. of Astronomy, Univ. of Texas, Austin 78712)

2-4. Diagnosis of the Functions in Endocrinology—Methods and Interpretations, 18th symp., German Soc. of Endocrinology, Hannover. (J. Kracht, Pathological Institute, Klinikstrasse 32 g, 63 Giessen, Germany)

3-5. American College of Apothecaries, Chicago, Ill. (D. C. Huffman, Univ. of Tennessee, College of Pharmacy, Memphis 38103)

4-10. American Concrete Inst., Dallas, Tex. (AIC, Box 4754 Redford Sta., 22400 W. Seven Mile Rd., Detroit, Mich. 48219)


6-11. International Acad. of Pathology, Chicago, Ill. (Miss J. Graves, Intersociety Committee on Pathology Information, Inc., College of American Pathologists, 9650 Rockville Pike, Bethesda, Md. 20014)

9-10. Advanced Analytical Methods for the Clinical Laboratory, Oak Ridge, Tenn. (C. D. Scott, Oak Ridge National Lab., P.O. Box X, Oak Ridge 37830)


10-12. National Wildlife Federation, Mexico City, Mexico. (T. L. Kimball, NWF, 1412 16th St., NW Washington, D.C. 20036)

11-18. American Assoc. of Pathologists and Bacteriologists, American Assoc. of Neuropathologists, and Pediatric Pathology Club (joint), Cincinnati, Ohio. (A. J. French, 1335 E. Catherine St., Ann Arbor, Mich. 48104)


13-17. International Union against Cancer Conf. (melanoma and skin cancer, leukemia), Sydney, Australia. (Intern. Cancer Conf., GPO Box 475, Sydney, NSW)

13-17. California Membrane Conf., Squaw Valley. (C. F. Fox, Dept. of Bacteriology, Univ. of California, Los Angeles 90024)


19-22. American Soc. of Limnology and Oceanography, Tallahassee, Fla. (G. W. Saunders, Jr., Dept. of Zoology, Univ. of Michigan, Ann Arbor 48104)


20-23. American Assoc. of Dental Schools, Las Vegas, Nev. (B. F. Miller, 211 E. Chicago Ave., Chicago, Ill. 60611)

20-23. Institute of Electrical and Electronics Engineers, New York, N.Y. (D. G. Fink. IEEE, 345 E. 47 St., New York 10017)

20-23. American Soc. of Neurochemistry, 3rd natl., Seattle, Wash. (W. L. Stahl, Dept. of Medicine (Neurology), School of Medicine, Univ. of Washington, Seattle 98195)


21-23. Control of Hazardous Material Spills Conf., Houston, Tex. (H. N. Myrick, Univ. of Houston, 3801 Cullen Blvd., Houston 77004)

23-25. Quality of Life, American Medical Assoc., Chicago, Ill. (E. O. Ellis, AMA, 353 N. Dearborn St., Chicago 60610)


23-25. Seismological Soc. of America, Honolulu, Hawaii. (D. Tocher, P.O. Box 826, Berkeley, Calif. 94704)

The highly stabilized deuterium light source provides a uniform energy band thus permitting the selection of any wave length in the UV range. Simplicity of operation, automatic base line compensation, four sensitivity ranges and an output linear in optical density are combined in the most stable and advanced UV monitor now available.

The versatile Fracto-Scan can be used with any fraction collector. Write today for complete information.

automate your high-volume pipetting procedures.

The Automated Pipetting Station from Micromedic Systems is the first instrument that dilutes or dispenses submicro volumes repetitively, automatically, with finer accuracy and technique than manual pipetting. And processes 450 standard test tubes per hour.

Check these features: Continuously variable micrometer volume adjustment. Range of 2 to 1000 µl of sample, 2 to 5000 µl of diluent or reagent. Moving tube racks. Liquid delivery against tube wall, and automatic tip wiping between passes.

Shock-free liquid movement through Teflon lines. Push-button controls. Plus the built-in accuracy and repeatability of our Automatic Pipette.

Send for literature, or call (215) 592-2401 for a demonstration.
You Mean I Can Get $50,000 of TIAA Life Insurance for Less Than $100?

That's what an Assistant Professor asked us when he heard about TIAA's low life insurance costs.

It's true. At his age 30 the annual premium for a 20-Year Home Protection policy providing $50,000 initial amount of insurance is $159.00. The first-year dividend, based on our current dividend scale, is $61.50, making a net payment of $97.50. Dividends, of course, are not guaranteed.

The Home Protection plan is level premium Term insurance providing its largest amount of protection initially, reducing by schedule each year to recognize decreasing insurance needs. This is just one example of the many low-cost TIAA plans available. If you need more protection for your family, ask us to mail you a personal illustration with figures for a policy issued at your age. We'll also send the Life Insurance Guide describing other TIAA policies.

Eligibility

Eligibility to apply for this or other TIAA life insurance is limited to persons employed at the time of application by a college, university, private school, or other nonprofit educational or scientific institution that qualifies for TIAA eligibility.

Teachers Insurance and Annuity Association

730 Third Avenue, New York, N. Y. 10017

Please mail the new Life Insurance Guide and a personal illustration.

Name:

Address:

Dependents' Ages:

Nonprofit Employer:

Circle No. 30 on Readers' Service Card

The Harris LoTemp model WRC is two microtome-cryostats in one. A single unit that can do both routine diagnostic procedures and such sophisticated research procedures as thin section light microscopy, autoradiography, fluorescence microscopy and other histological procedures, at a cost comparable to presently available routine cryostats.

The Harris model WRC is compact...can be moved anywhere...it's needed. The cold chamber has extra room for tissue handling, storage or freeze drying. Full opening top with special access ports combines the features of a totally closed system with the easy accessibility of open top models.

Available equipped with Jung or International Equipment Corp. microtomes, or cryostat only prepared for installation of your present I.E.C. microtome. Installed stereo zoom microscope also available.

For a full description of the Harris WRC and its wide range of additional features write or call...