APRIL 1992

MICROSCOPY TODAY

This, our third newsletter issue, is being sent at no cost to some 9,000 individuals in the United States - each with an interest in microscopy. We remain delighted to learn of others wishing a no cost subscription - by FAX (608-836-1969), by telephone (608-836-1970) or by mail.

INDUSTRY NEWS

• The 1992 Resident, Cooperative, and Postdoctoral Research Associateship Programs in science and engineering have been announced by the National Research Council.Research is conducted at 115 research laboratories representing 230 federal agencies and research institutions.

Participating scientists have the opportunity to work on problems largely of their own choosing that are compatible with the interests and goals of the sponsoring facility. Approximately 300 associateships will be awarded in the fields of chemistry; earth and atmospheric sciences; engineering and applied sciences; biological, health, and behavioral sciences and biotechnology; mathematics; space and planetary sciences; and physics.

The annual stipends are from \$27,750 to \$42,000 for recent graduates and senior researchers may receive higher amounts. Relocation, support service, etc. expenses may also be supported. Awards are for one or two years and are renewable for up to three years.

Information on the program may be obtained from Associateship Programs (GR430/D3), Office of Scientific and Engineering Personnel, National Research Council, 2101 Constitution Ave. NW, Washington, DC 20418 (202-334-2760; Fax: 202-334-2759). Applications for July and November awards must be received, respectively, by 15 April and 15 August.

• Dr. Judy A. Murphy, until recently the National Training Director and a Research Scientist with the R. J. Lee Group, has joined the San Joaquin Delta College as Director of their Electron Microscopy Program.

NEWS ???

This note is to advise that we are experiencing serious difficulty in obtaining "news" of appropriate interest to our readers.

While hundreds of our readers have allowed encouragement for this newsletter effort, few have as-

sisted us by submitting news items. We trust that the objective of the newsletter is obvious. We do not intend, for example, to attempt a "technical" publication. Rather, we wish to present useful and interesting information relating to the broad topic of microscopy to our readers.

In clear attempt to (slightly) motivate a number of our readers to help us, we would like to present a \$25 U.S. Savings Bond for news items accepted for publication. Excluded will be relocations.

Contributors may remain anonymous - or credit will be allowed. Assistance by each of our

readers would be most sincerely appreciated!!!

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• The Electric Power Institute (EPRI) is seeking ideas for research into possible approaches to mitigate the potential effects of electromagnetic fields using polymer technology.

They are interested in determining whether current polymer technology can be employed for use in coatings such as paints, fabricated materials such as gloves or masks, or woven systems for clothing.

Proposal information is available from Barbara Braithwaite, Electric Power Research Institute, 3412 Hillview Ave., Palo Alto, CA 94303, Tel: (415)855-2882 • Scientists at Lawrence Livermore Laboratory and Stanford University School of Medicine have, for the first time, utilized scanning tunneling microscopy (STM) to distinguish between adenine and thymine.

The work is considered a key step toward the ultimate goal of being able to sequence DNA by direct STM visualization of bases in complete DNA strands, perhaps in conjunction with spectroscopy.

Although STM has been used before to obtain images revealing the major and minor grooves of DNA, sufficient resolution was not available to identify individual bases.

The work was not done with natural DNA, but with bases dissolved in distilled water and laid out on a heated graphite surface. The adenine and thymine molecules would stick to the graphite surface and form a crystal lattice that is easy to work with - since thymine contains a single hexagonal ring and the adenine molecule has a double ring structure.

• Standard Reference Materials (SRMs) Brochures are available from NIST on the subjects of agriculture and food science, clinical laboratories, environmental laboratories, gases, industrial hygiene, marine science, microprobe and scanning electron microscopy, and spectroscopic analysis.

These eight brochures, part of a set of 16 on select SRMs, are available singly or as a set from the Standard Reference Material Program, NIST, Bldg 202, Rm. 204, Gaithersburg, MD 20899, Tel: (301)975-6776.

• R&D magazine, March issue, has an interesting article relating to Windows software in the laboratory.

INDUSTRY NEWS CONTINUED

The following individuals have 0 been invited to participate in the Korean Electron Microscopy Conference, to be held at the Seoul National University, starting the week of 29 June: Dr. Alwyn Eades (University of Illinois at Urbana) who will talk on CBED; Dr. David Smith (Arizona State University at Tempe) who will talk on HREM; Dr. Changmo Sung (GTE, Waltham, MA) who will talk on AEM and Dr. Judy Murphy (San Joaquin Delta College) who will talk on Advanced Biological Techniques, Asbestos Analysis in the U.S. and EM Lab Design and Management.

The National Science Board re-0 ports that as of 1989, France, Japan, the former West Germany, and the U.K. spent 12% more than the U.S. on total non-defense-related R&D activities, while the U.S.'s share of global markets for hightechnology goods continued to erode slowly. NSB advises that financial problems loom for research universities as the recession hits both state budgets and the various sources of income from private institutions, and as pressures mount for lower indirect cost reimbursement rates on federal research grants and contracts. Copies of "Science and Engineering Indicators - 1991" are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, stock number 038-000-00587-1 for \$29.

 In our February issue, we mentioned the development of a new, extensive video journal: Electron Microscopy; A Video Quarterly. Emphasis will be on topics difficult to describe in print - including sample preparation, imaging, and analysis. Applications will include the biological, clinical and material sciences plus selected aspects of advanced light microscopy. Recent advances such as confocal and scanning probe microscopies will also be included. Dr. Daniel Luchtel (Univ of Washington) would like to request contributions from our readers. Tel: (206)543-2036, Fax: (206)685-4696

Park Scientific Instruments announces the no charge availability of a comprehensive bibliography of published articles on scanning probe microscopy (SPM). With 886 references and a 10-page author index, it was produced in collaboration with Professor Paul Bryant and Hyo S. Kim of the Univ. of Missouri. A copy may be obtained by contacting Park Scientific Instruments: (800)SPM-1602.

0 The Second LEHIGH MEETING, cosponsored by PEMS, NYSEM and Metropolitan MAS, will be held on 29 May 1992 at Lehigh University, Bethelem, PA.

Discussion topics will include electron microscopy (TEM, SEM and ESEM), imaging science, X-ray microanalysis, surface analysis and the traveling EMSA activity. Forum exhibits and manufacturers' booths will be present. The keynote speakers will be Drs. David Williams and Charles Lyman.

An open poster and photographic competition, with cash awards, will be held. SEM, TEM, STEM, Auger or related electron probe photographs are eligible. All members of local MAS/EMSA Societies are welcome to enter and exhibit their choice of poster or photographs.

Information relating to attending, or on submitting poster and/or photographic entries, may be obtained from Ms. P.M. Brady, Hoechst Celanese Corporation, Tel: (908)231-5435.

****** A SMALL BIT OF TRIVIA --

★ An angstrom can be visualized as the change in level of a 50 meter X 20 meter swimming pool caused by the landing of ÷ t a fly.

Credit to Dr. Gordon Wilkinson, Editor,

Analytical Instrument Industry Report

Nikon Inc. will again recognize 0 excellent in photography through the microscope with their Small World competition. Entrants may submit up to three 35-mm transparencies which will be judged on their originality, informational content, technical proficiency and visual impact. The use of Nikon equipment is not required. Prizes include a \$4,000 vacation and Nikon products. The entry deadline is 30 June 1992. For more information, contact: Nikon Inc., Instrument Group, 1300 Walt Whitman Road, Melville, NY, 11747,

As a group, the officers of most of the Regional EMSA Sociteties have been extremely helpful ★ and encouraging regarding this * newsletter.

It should be noted, however, that the following EMSA Societies ★ that the following this societies
★ have refused our membership, will ★ not allow their mailing lists and 🖈 will not even answer our letters: 🖈

- Connecticut - Louisiana
- Michigan
- San Diego.

Their membership lists are ★ being obtained from other more ★ friendly sources.

SUPPLIER'S DATABASE:

The creation of an effective I database format covering all of microscopy, with an eye to the fu-I ture, has proved to be other than easy!!!

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The plan is to provide the basic format in the next issue of this newsletter.

https://doi.org/10.1017/S1551929500070541 Published online by Cambridge University Press

In the meantime, any readers with an interest in this broad topic are invited to assist in format development.

 According to a recent NIH study, about 19% of the applicants for research project grants in fiscal 1990 were women and about the same percentage of women received grants. The average award to women, however, was \$176,582 compared to \$206,325 for men. The report continues to advise that women in 1990 made up 42% of NIH trainees selected by institutions and 31% of NIH individual fellowships.

0 The mathematics and science skills of U.S. nine- and 13-year old students was recently compared with those of 19 other countries (including the former Soviet Union, Canada, China and England).

In essentially every category, U.S. children ranked among the lowest of all those taking the tests.

Among the statistics was that the number of U.S. students who watched TV more than five hours a day was over twice that of the highest ranked countries.

The Univ. of Michigan, Material 0 Science & Engineering, is offering a 5-day workshop on Polymer Microscopy starting 8 June 1992. Emphasis will be on the synthesizing, modifying and processing of polymer materials - plus structural characterization and how it relates to physical properties. Lectures topics will include SEM, TEM, Optical and High Resolution Microscopy specifically related to polymers. Ann Arbor, MI. 3.5 CEU Credits. Fee \$935. Dr. David C. Martin: Tel: (313)936-3161. Fax: (313)763-4788.

An updated NIST Calibration 0 Services Users Guide 1991 (SP 250) listing more than 500 calibration services, special test services and measurement assurance programs for industry is available from NIST. Copies may be received from NIST, Calibration Program, Room A104, Building 411, Gaithersburg, MD, Tel: (301)975-2002.
