

## NOTES ON APPARATUS AND EQUIPMENT

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The following notes on laboratory apparatus, instructional and research equipment, audio-visual materials, and technical services are presented as information to the readers of the *Arabian Journal for Science And Engineering*. The manufacturers and suppliers of the items mentioned have not solicited space in the *Journal*.

Enquiries about items described should be addressed directly to the manufacturer, however, and not the *Journal*.

### SCANNING ELECTRON MICROSCOPE

International Scientific Instruments, Inc. has announced a new version of a scanning electron microscope featuring guaranteed resolution of 200 Angstroms; 150 Angstrom resolution is easily obtainable, the manufacturer states. The new instrument has been given a code number of MSM-5. It is a desk-top instrument, requiring only about 60 cm by 120 cm of desk or bench space. Accessories include TV scan, a wide variety of stages, and an energy dispersive x-ray system. The instrument provides magnification ranges from 30x to 80,000x; it has an accelerating potential of 15 kv (fixed) and a lens system that has three lenses which are electromagnetic-prealigned. A built-in photometer is part of the standard equipment.

### TRANSPARENCY MAKER/COPIER

The 3 M Company has announced a new transparency maker/copier, their model 411. This model is equipped to handle half-tones, photos, letters, sections of large charts or maps, and all colors. It is about the size of a typewriter, weighs about 23 kilos, and plugs into the nearest electrical outlet; it uses no chemicals or toners. The device is especially recommended for making transparencies for use with an overhead projector. Its capabilities allows the classroom teacher considerable flexibility in the selection and use of the kinds of materials for overhead projection.

### PROBABILITY GENERATOR

Pasco Scientific Company has announced the development of a new Model 9400 Probability Generator, developed in order to help students gain a better understanding of probability distributions.

The generator uses the randomness of electronic junction noise to produce sequences of random numbers. The student sets the desired parameters, pushes a button, and a random number appears on the two digit readout. With this device, its manufacturer claims, students can investigate the normal, binomial, and Poisson distributions, and may experiment as well with the law of large numbers and random walks.

### MICROPROCESSOR-EQUIPPED OSCILLOSCOPE

The Hewlett-Packard Company has adapted the microprocessor from the familiar HP-35 calculator to a new dual channel 275 MHz oscilloscope, the Hewlett-Packard model 1722A. The new instrument provides digital readout of time interval, frequency, dc voltage, peak or instantaneous voltage, and percent difference between amplitudes. All these data, plus the scope display, are taken from a single probe to the circuit under test. The manufacturer makes claims for the instrument that include improved accuracy, increased measuring speed, reduction in the sources of human error, and greater convenience.

### LASER VIDEO PACKAGE

Metrologic Instruments Inc. is now offering a laser video package in kit form. The PE 500 kit from that company contains complete materials and instructions for making a modulated helium-neon laser and a photodetector. When used with a TV camera and any television set, the system allows sending and receiving video images via a laser beam. The low-powered helium-neon laser can also be used for making holograms, demonstrating optics principles, and measuring the speed of light.

The company recommends its product for demonstration in school settings.

### **SOUND FILMSTRIP VIEWERS**

Standard Projector and Equipment Company has introduced a new series of automatic cassette filmstrip sound viewers. The two models in the company's LP-10 series are said to offer highly versatile performance for a broad variety of educational and training needs. Both models offer fully automatic operation. The filmstrip and cassette tape are synchronized from start to finish, and the film can be advanced or reversed either manually or by electric pushbutton. One of the models can convert silent filmstrips into automatic films with automatic advance, simultaneously adding narration, sound effects, or music to the existing films.

### **HIGH TEMPERATURE METALLOGRAPHY SYSTEM**

Hacker Instruments has announced a new system that is useful in making studies of materials in a high

temperature environment. Hacker has applied the name *Vacuthermat* to its system. *Vacuthermat* permits direct study of phase transitions, grain growth, and other temperature-dependent properties of materials. The system permits automatic control of sample temperature, and it records experimental data without ever losing visual contact with the sample. The working temperature can be extended to 1800°C or higher. *Vacuthermat* incorporates an inverted microscope, a micro-heating stage, a high vacuum pump system, a programmer, and a recorder.

### **REFERENCE BOOKS ON GASES**

Two useful reference books on gases, the *Matheson Gas Data Book* and *Effects of Exposure to Toxic Gases: First Aid and Medical Treatment*, are available from Matheson Gas Products. Both volumes are valuable to users of gases. Individuals in the Middle East may inquire of Scientific Instruments, P.O. Box 8310, Beirut, Lebanon.