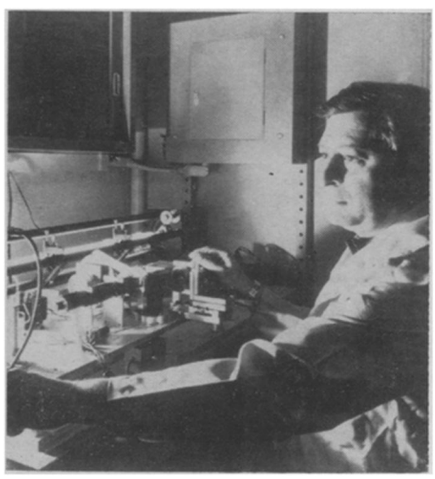
new products

Scanning laser microscope



In microscopy, a thin beam of light is better able to pick out and resolve pinpoint features than is a broad beam of light. To get a meaningful picture of the specimen, that is, to join these points together, the beam must scan, or be moved, from point to point. Such scanning investigations of opaque materials have been confined to the surface.

A laser microscope that can scan below surfaces impervious to ordinary light has been developed. It is valuable as a materials analysis tool. The scanning permits an examination of a sample in seconds. The high energy of the laser's infrared beam enables it to pass through the material without being totally absorbed. The emerging beam is picked up by a receiver, which converts it into electrical energy, and the image is viewed on an oscilloscope. The principle is the same as that for an X-ray machine.

Of importance in the electronics testing laboratories, where quality-control engineers can test transistors and integrated circuits, it has applications in biological and medical laboratories as well.

Electro-Optics Organization
Circle No. 109 on Reader Service Card

Mini-mass spectrometer

One of the latest spin-offs from the Apollo space program is a tiny mass spectrometer expected to end up in hospital operating rooms and other areas of medical investigation.

The operation of a mass spectrometer, which analyzes the composition of substances, normally requires equipment that takes up at least several cubic feet of room. Now all that has been condensed into a device that can be worn under the chin. Its first use will be to monitor the breath of astronauts. The instrument has not been built yet, but its components have and they have been tested. The most difficult work has already been done, with some engineering remaining to assemble the components.

It is capable of monitoring four gases (carbon dioxide, nitrogen, water vapor and oxygen), telltale gases that indicate changes in a person's physical condition. The apparatus can fit into a space the size of a five-inch length of hose pipe, excluding the electronics, to be worn in a book-size back pack.

Analog Technology Corporation
Circle No. 110 on Reader Service Card

Tissue freezer-slicer in one

To section slices of tissue for microscopic study requires the use of a microtome, a mechanical device with a thin blade, and a freezer to harden the tissue for cutting. The two have been combined in a large microtome-cryostat device suitable for research centers, especially those that section mouse tissue after irradiation.

The microtome-cryostat can reach temperatures of minus 25 degrees C., thus permitting faster and easier tissue sectioning. Tissue slices as small as 20 microns or whole body sections can be obtained. The apparatus is 47 inches high, 50 inches wide and 28 inches deep.

Harris Manufacturing Co., Inc.
Circle No. 111 on Reader Service Card

Bag for lymphocyte transport

The medical study of white blood cells, or lymphocytes, often requires that blood samples be mailed. However, present transport bags can only keep lymphocytes viable for two days.

The Terasaki Lymphocyte Transport Bag, named for its inventor,, Dr. Paul I. Terasaki of the University of California at Los Angeles, extends this life to seven days. Heart of the bag is a powdered material that contains nutrients and antibiotics to keep the lymphocytes viable. The patient's blood is injected into the bag, which is made of flexible vinyl plastic and has two chambers. The lymphocytes concentrate in one of the chambers, where they can be maintained.

Although originally envisioned for use by kidney transplant surgeons, the bag is applicable for a range of research and tissue culture work.

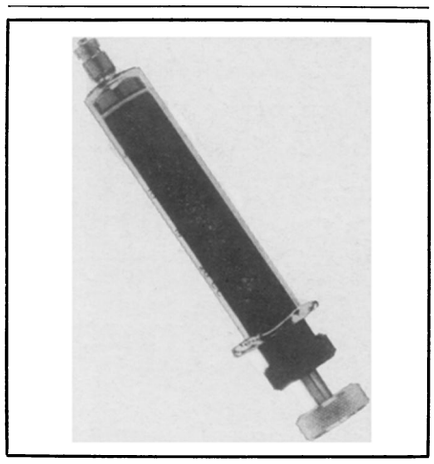
Life Instrumentation
Circle No. 112 on Reader Service Card

Microbial fermentor

Many types of microorganisms, including both aerobic and anaerobic bacteria, molds and yeasts and mammalian and plant tissue cultures may be kept at precisely controlled environmental conditions in this fermentor for use in the classroom and laboratory. Agitation is regulated over a wide span at temperatures in a range up to 70 degrees C. The one-liter vessel can be sterilized in an autoclave.

Fermentation Design, Inc.
Circle No. 113 on Reader Service Card

Leakproof gas syringe



Gas syringes extract or inject gas samples from or into gas chromatographs, instruments that analyze the composition of gases. Like the familiar hypodermic, they have a plunger, which moves up and down in a glass tube. The interface between the surface of the plunger and the contents is a potential trouble spot because gas can leak out.

The problem has been solved by a plunger with a Teflon seal in the shape of an "O" at the bottom of the plunger. By turning a knob, the O-shaped seal can expand outwards to contact the sides of the tube, thereby preventing the gas in the barrel from leaking out or becoming contaminated.

Glenco Scientific, Inc.
Circle No. 114 on Reader Service Card

Products are selected and listed as an editorial service geared to reader interest. The claims are the manufacturers', and further information on Products of the Week, should be secured from them.