Fractionation Problems?

Here's help for you...

This tireless servant in your laboratory will automatically collect any number (up to 200) of rigidly controlled samples of predetermined fluid volumes. Each collected sample may comprise any number of drops from one to four hundred. As each separate sampling is completed, the carriage automatically advances to repeat identical collections consecutively until the whole fractionation has been made.

All you have to do is to set it up for the conditions of the chosen experiment, short or long, and then leave it alone. The machine will plod along without attention hour after hour, all day (and night) long. When the job's done, it will shut itself off.

The Technicon Fraction Collector has been thoroughly tested in actual laboratory installations, where it has proven invaluable to busy research staffs. We shall be happy to send you details.


Saves time and labor

Relieves laboratory staff of the fretful and time-consuming chore of fraction-cutting: releases workers for other duties.

Triples work output

You can run it twenty-four hours a day, continuously, to triple fractionation output as compared with an 8 hour laboratory day.

gives greater resolution

By collecting a large number of small fractions, rather than a few gross ones, you'll get more data from a given fractionation, e.g. a chromatogram, or a fractional distillation.

Assure accuracy

Because the possibility of human error is automatically ruled out. Now fraction-collection becomes a straightforward mechanical procedure.

Technicon Automatic Fraction Collector

Technicon Chromatography Corp.,
215 East 149th Street,
New York 51, N. Y.

Send me detailed information on the Technicon Automatic Fraction Collector.

Name: ____________________________________________
Address: __________________________________________
City: ____________________________________________ State: ________
In the famous Quiet Room at Bell Laboratories, this young volunteer records speech for analysis. Scientists seek to isolate the frequencies and intensities which give meaning to words... stripping away non-essential parts of word sounds to get the basic "skeleton" of speech.

A child or an adult... a man or a woman... an American or an Englishman— all speak a certain word. Their voices differ greatly. Yet listeners understand the word at once. What are the common factors in speech which convey this information to the hearer's brain?

Bell scientists are searching for the key. Once discovered, it could lead to new electrical systems obedient in new ways to the spoken word, saving time and money in telephony.

Chief tool in the research is the sound spectrograph which Bell Telephone Laboratories developed to make speech visible. Many kinds of persons record their voices, each trying to duplicate an electrically produced "model" sound. While their voice patterns are studied, a parallel investigation is made of the way human vocal cords, mouth, nose and throat produce speech.

Thus, scientists at Bell Laboratories dig deeply into the fundamentals of the way people talk, so that tomorrow's telephone system may carry your voice still more efficiently—offering more value, keeping the cost low.

Spectrograms of young girl's voice (right) and man's voice making "uh" sound as in "up." Horizontal bars reveal frequencies in the vocal cavities at which energy is concentrated. The top of the picture is 6000 cycles per second. Pictures show how child's resonance bars are pitched higher than man's.

Bell Telephone Laboratories
Improving telephone service for America provides careers for creative men in scientific and technical fields.
Analyzing air brakes for faster stops

How long does it take pressure to build up to required levels at the brake chambers after the driver applies the brake pedal? To answer this all-important question of "air-transmission" time, Bendix-Westinghouse Automotive Air Brake Company assembles on a test stand a complete counterpart of the brake system which is to be installed in a truck, truck-tractor, or bus. All components and air lines are the same as those to be used on the vehicle.

Pressure pickups are used at various critical points in the system, and a mechanical foot is used to depress the brake pedal. A Consolidated Recording Oscillograph records the time that the pedal starts downward and the rate at which pressure builds up at the brake chambers. At maximum pressure, the brake pedal is released and the rate of pressure drop recorded. A full report on the air-transmission time of the system based on this accurate analysis is furnished the vehicle manufacturer.

Consolidated Engineering

Dynamic Recording Systems

...like the one shown here are designed and manufactured by Consolidated. Variations in the arrangement of the equipment are infinite. Applications are widely varied throughout industry and the sciences. A typical recording system includes pickups, amplifiers or bridge balances, and a recording oscillograph. Write for Bulletin CEC 1500B.
Simple, Rapid
Na and K Analyses by Flame Photometry

Na and K analyses in a few minutes and accurate to within 1 or 2 per cent, are standard procedure with the new, improved Perkin-Elmer Model 52-C Flame Photometer. Not an attachment, but a separate, complete instrument, the Perkin-Elmer Flame Photometer operates by means of either direct intensity or internal standard methods. Analyses are readily made on blood, food, water, or any substance placed in solution. Operation is simple and dependable; results, reproducible.

The Perkin-Elmer Flame Photometer operates wherever electricity, compressed air, and propane or acetylene fuel are available. Its precision electronic circuits are more rugged and dependable than delicate galvanometers. Five cc of fluid, including dilution, is needed per determination; one cc of serum is sufficient for three determinations of both Na and K after dilution.

Write for complete details

THE PERKIN-ELMER CORPORATION
NORWALK, CONN.

Leading manufacturers of Infrared Spectrometers, Continuous Infrared Analyzer, Universal Monochromator, Flame Photometer, Tiselius Electrophoresis Apparatus, D. C. Amplifiers, and other electro-optical instruments for analysis and research.
How to stretch your laboratory budget

Whether you are teaching chemistry or running a business, costs are mounting. They must be watched more carefully than ever. You definitely can make economy part of your teaching program by standardizing on PYREX brand laboratory ware.

Experience over a long period of time points to the fact that PYREX brand laboratory apparatus stands up longer under student abuse than any other brand. Its low coefficient of expansion minimizes loss from thermal shock. Its chemical formula is such that it remains stable under heat and acids. Its over-all design provides exceptional physical strength. You can stretch your laboratory ware budget farthest by always asking your laboratory dealer for PYREX brand.

PYREX brand West-Type Condensers—Designed for rough service. Bulbs at outlets protect condenser tube and permit stronger seal to outlet. Smaller jacket speeds water flow and increases condensing efficiency. Hand-tooled outlets on same side for convenience.

PYREX brand Reagent Bottles—Permanent red glass labels for quick easy reading. Interchangeable easy grip stoppers. High chemical stability for protection of standard solution. Special labels available without mold charge.

PYREX brand Test Tubes—Proved by careful school records to be the most serviceable you can buy. Made from precision tubing, carefully annealed for strength. Available with and without rims and side arms.
Why you can depend on proportional counters by nuclear measurements corp.

NMC MODEL PC-3

Total instrumental error is less than 0.5%; the character of the "Candid Decade" scaling circuit guarantees that scaling errors will not participate. No geometry or window error exists. Resolution loss 1% per 100,000 c/m.

The yield runs typically 5 to 50 times higher than an end-window GM counter.

Beta background runs less than 2 c/m per cm² of counting area; Alpha background is less than 0.1 c/m.

Built-in automatic features reduce the operating cycle to 4 rapid operations.

Less than 10 minutes is required to decontaminate, clean and reassemble the counting chamber.

Designed specifically for Proportional Counting with the least possible compromise.

The instrument counts Alphas, Betas and Gammas. Alphas are counted with complete discrimination from high intensity Beta activity. Betas are counted in the presence of Alpha activity.

You can depend on Instruments by Nuclear Measurements when you need Instruments for Radiochemistry, Mineral Assay, Radiobiology, Radiotheraphy, Radioisotopes, Nuclear Physics, Health Physics, and Mineral Search.

Contact NMC First... For the Finest.

RESEARCH BIOCHEMICALS

For INVESTIGATIONAL USE

AMINO ACIDS

A complete selection of more than 90 amino acids of maximum purity including:

- DL ALPHA ALANINE
- BETA ALANINE
- L ALANINE
- DL ALPHA AMINO-n-BUTYRIC ACID
- L ARGinine (HCl, Free Base)
- ASPARAGINE (L, DL, D)
- ASPARTIC ACID (L, DL, D)
- BETAINE
- DL CITRULLINE
- CREATINE
- CREATININE
- CYSTEINE (HCl, Free Base)
- CYSTINE (L, DL)
- DL DOPA
- DJENKOLIC ACID
- DL ETHIONINE
- GLUTAMIC ACID (L, DL, HCl)
- GLUTAMINE
- GLYCINE
- HISTIDINE (L, DL, D)
- DL HOMOCYSTEINE
- DL HOMOCYSTINE
- HYDROXY-L-PROLINE
- ISOLEUCINE (L, DL, D)
- LEUCINE (L, DL, D)
- LYSINE HCl (L, DL)
- METHIONINE (L, DL, D)
- METHIONINE SULFOXIDE
- DL NORLEUCINE
- DL NORVALINE
- ORNITHINE HCl (DL, L)
- PHENYLALANINE (L, DL, D)
- PROLINE (L, DL)
- SARCOSINE
- DL SERINE
- B PHENYL SERINE
- TAURINE
- THREONINE (L, DL, D)
- DL ALLO THREONINE
- Tryptophane (L, DL, D)
- TYROSINE (L, DL)
- VALINE (L, DL, D)

ALSO—A SELECTION OF 20 PEPTIDES

WRITE FOR

NEW CATALOGUE

#S 975

Listing over 600 Research Biochemicals
ANNOUNCING
The New Line of
PAPER PARTITION
CHROMATOGRAPHY
EQUIPMENT

For the rapidly growing field of paper partition chromatography research we offer a more complete line of chromatographic cabinets, drying ovens, and accessory equipment, especially designed for the particular requirements of this new chromatographic method.

THE NEWLY DESIGNED CHROMATOCAB
Both Models A300 and B275 are now offered with hinged top and convenient bottom drawer. Model A300 is fully insulated to insure constant temperature conditions during the period of operation. Both models with interior lining of stainless steel and screw type legs for leveling.

DRYING OVEN FOR CHROMATOGRAMS
A mechanical convection oven designed specifically for heating paper chromatograms, offering the following features:
1. Controlled temperature over a wide range.
2. Continuous circulation of heated air. Both heat and air circulation controlled according to requirements.
3. Heater and air blower operate independently, permitting air circulation without heat if desired.
4. Sliding rack permits easy handling of chromatograms without transference from original anti-siphon rods. Each chromatogram can be added or removed from the oven without moving or handling other chromatograms on the rack.

RACKS AND
SOLVENT ASSEMBLIES
Either Pyrex glass or stainless steel racks and solvent assemblies for one dimensional separations. Pyrex chromatography jars and the necessary solvent assemblies are included with the racks, or sold separately.

ALSO AVAILABLE:
- Pyrex Solvent Troughs
- Stainless Steel Trough Cradles
- Densitometers...for quantitative determinations on paper
- Ultraviolet Lamps

- Pyrex Disc Chambers
- Micro Pipettes
- Stainless Steel Chromatography Clips
- Pyrex Aspirators for Spraying Indicators

Write For Brochure and Prices

RESEARCH EQUIPMENT CORPORATION
MANUFACTURERS
1135 THIRD STREET, OAKLAND 20, CALIF.
Dept. 5

July 18, 1952
You asked for SPEED... for ACCURACY... Choice of TOTAL SOLIDS, INDEX SCALES and BUTYRO...

You Get All Three in the WORLD'S FASTEST REFRACTOMETER!

Featuring

"STOP-WATCH" SPEED!
"LABORATORY" ACCURACY on the PRODUCTION LINE!

- Super Speed Readings... from ALL NEW DESIGN! Want analyses in 10 seconds? 15 seconds? You can have the speed your process requires. No more losses of time, materials and money due to slow readings! This new Bausch & Lomb Industrial Refractometer is strictly a production instrument... designed and built for use right beside your vats. You'll want several... at least one for each testing area.

- Super Speed Loading... new prism design.
- Super Speed Cleaning... prisms easily, quickly cleaned. Prevents contamination of new samples. Internal parts protected from dirt, fumes, stray liquids.

- Super Temperature Stability... easier to maintain stable temperatures.

Plus dependable, uniform accuracy of ±.0001. Simplified to basic essentials... operated by any average worker. Scales "tailor-made" to seven specific ranges industry requires.

New Bausch & Lomb Industrial REFRACTOMETER

SEND TODAY FOR COMPLETE DETAILS

BAUSCH & LOMB OPTICAL COMPANY
624-27 ST. PAUL STREET, ROCHESTER 2, NEW YORK

Please send me complete information on the New Bausch & Lomb Industrial Refractometer.

NAME______________________
TITLE______________________
COMPANY___________________
STREET_____________________
CITY_______________________ ZONE________ STATE________

Science, Vol. 116