

more, Md. (American Soc. of Mechanical Engineers, 29 W. 39 St., New York 18)

24-26. World Veterinary Poultry Assoc., conf., Cambridge, England. (W. M. McKay, Cyanamid of Great Britain, Ltd., Bush House, Aldwych, London, W.C.2, England)

24-28. International Astronautical Federation, congr., Sofia, Bulgaria. (J. A. Stemmer, IAF, P.O. Box 37, Baden, Switzerland)

24-28. Organometallic Derivatives, intern. colloquium, Paris, France. (H. Normant, Faculté des Sciences, Université de Paris à la Sorbonne, 47 rue des Ecoles, Paris 5^e)

24-29. International Committee on Electrochemical Thermodynamics and Kinetics, Rome, Italy. (N. Ibl, c/o Laboratory of Physical Chemistry, Federal Polytechnicum, 6 Universitätsstrasse, Zurich, Switzerland)

24-29. Pharmaceutical Sciences, intern. congr., Vienna, Austria. (W. Thor, Organizing Committee, Spitalgasse 31, Vienna 9)

24-29. Technical Assoc. of the Pulp and Paper Industry, annual conf., Stockholm, Sweden. (I. F. Hendry, Research and Development, Wiggings Teape & Co., Ltd., Beaconsfield, Bucks, England)

24-30. European Seismological Commission, general assembly, Jena, Germany. (E. Peterschmitt, ESC, 38 Boulevard d'Anvers, Strasbourg, France)

24-30. Vital Substances, Nutrition, and Civilization Diseases, intern. convention, Garmisch-Partenkirchen, Germany; and Innsbruck, Austria. (Intern. Soc. for Re-

search on Nutrition and Vital Substances, Bremeroderstr. 61, Hanover-Kirchrode, Germany)

25-28. Association of Iron and Steel Engineers, Cleveland, Ohio. (Managing Director, AISE, 1010 Empire Bldg., Pittsburgh 22, Pa.)

25-28. Electric Power Systems for Space, conf., Santa Monica, Calif. (American Rocket Soc., 500 Fifth Ave., New York 36)

26-28. Practice of Gas Chromatography, meeting, East Lansing, Mich. (C. G. Harritz, Houdry Process & Chemical Co., Box 427, Marcus Hook, Pa.)

26-29. Austrian Soc. of Biochemistry, Society for Physiological Chemistry, German Pharmacology Soc., Vienna, Austria. (Secretariat, Vienna Medical Acad., 4 Alserstr, Vienna IX)

26-29. Neurobiologists, intern. meeting, Kiel, Germany. (W. Bargmann, Neue Universität, Olshausenstrasse 40/60, Kiel)

27-29. Protection of Plants and Extermination of Pests, symp., Magdeburg, Germany. (Chemische Gesellschaft in der D.D.R., Unter den Linden 68-70, Berlin W.8, Germany)

27-29. Society for General Microbiology, Reading, England. (SGM, c/o Inst. of Biology, 41 Queen's Gate, London, S.W.7, England)

28-29. Broadcast Symp., annual, Washington, D.C. (G. C. Wetmore, Collins Radio Co., 1825 Connecticut Ave., NW, Washington 9)

28-30. Medical Psychology, intern. colloquium, Brussels and Louvain, Belgium. (P. H. Davost, Société de Psychologie

Médicale de Langue Française, 2 rue de Rohan, Rennes, France)

30-5. American Soc. for Testing Materials, Pacific area, Los Angeles, Calif. (Executive Secretary, ASTM, 1916 Race St., Philadelphia 3, Pa.)

30-6. Medical Hydrology and Climatology, intern. congr., Baden-Baden, Germany. (M. Fontan, c/o Faculté de Médecine, Lille, France)

October

1-3. Communications, natl. symp., Utica, N.Y. (J. K. Webb, 489 Van Ellis Rd., Utica)

1-3. Plastics, intern. congr., Turin, Italy. (Segreteria, Congresso delle Materie Plastiche, Corso Galileo Ferraris 60, Turin)

1-4. American Oil Chemists Soc., Toronto, Ont., Canada (K. F. Mattil, Swift & Co., Packers and Exchange Aves., Chicago 9, Ill.)

1-4. Electroencephalographic Information, Marseilles, France. (R. Naquet, 23 rue de la Loge, Marseilles 2^e)

1-4. Iron and Steel, intern., Luxembourg. (Secrétariat, c/o Centre National de Recherches Metallurgiques, Abbaye du Val-Benoit, Liège, Belgium)

1-4. Shell Structures, intern. conf., San Francisco, Calif. (A. C. Scordelis, Dept. of Civil Engineering, Univ. of California, Berkeley 4)

1-5. American Soc. of Tool and Manufacturing Engineers, Los Angeles, Calif. (R. M. Johnson, 3336 Stinson Blvd., Minneapolis 18, Minn.)

(See issue of 13 July for comprehensive list)

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Mathematical Statistician, M.A. Columbia, wishes position in research, non-defense area; 5 years of college mathematics teaching experience, currently in private industry. Presently in New York; would consider other location. Write Box 161, **SCIENCE**. X

Microbiologist-Biochemist, Ph.D., publications, good background physiology, wants teaching-research appointment in small school. Central to Southeast Florida preferred. Salary secondary to location and situation. Box 164, **SCIENCE**. X

N.M.R. Spectroscopist, Ph.D., 6 years in the field, research, teaching and supervisory experience, publications, seeks responsible position in research or teaching-research. Box 165, **SCIENCE**. 8/3, 10

Physiologist. Extensive research and administrative experience in animal and human physiology and biochemistry. Desires academic and/or research position. Box 162, **SCIENCE**. X

Protein Chemist, Ph.D. Intensive and varied experience; seeks research opportunity allowing independent work and possibility of aiming at neoplastic problems. Northeast preferred. Box 163, **SCIENCE**. 8/3, 10

Virologist—Sc.D. desires academic appointment, or direct research program in institution. Broadly experienced, many publications. Box 166, **SCIENCE**. X

Virologist-Microbiologist, M.A., Ph.D. Desires supervisory, administrative or teaching and research position. Experience in virology, tissue culture, virologic diagnostic work and teaching medical microbiology. Prefer West Coast. Box 157, **SCIENCE**. 7/27

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Plant Physiologist

Ph.D. or equivalent with a major in plant physiology and strong training in plant pathology, agronomy, entomology, or horticulture. The person selected would live on the East Coast. Duties would consist of contacting State and Federal scientists engaged in the evaluation of agricultural pesticides. He would be expected to conduct his own research on compounds in the development stage through cooperation with private industry.

Analytical Chemist

Ph.D. or equivalent for work in the field of pesticide residue analysis and pesticide metabolism in plants. A strong background in organic chemistry is necessary. Knowledge of biochemistry, statistics, and chromatography, as well as experience in this field, is desirable but not necessary.

An equal opportunity employer. Please send complete résumé to

Technical Employment Coordinator
THE UPJOHN COMPANY
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DIRECTOR OF CLINICAL RESEARCH

This is a very important position and the man we are looking for should have a serious interest in the development, screening and use of new and old compounds.

The Director of Clinical Research will have wide contact with clinicians, laboratory research scientists, as well as a scientifically oriented management. Please send résumé including salary requirements to **Box 158, SCIENCE**.

POSITIONS OPEN

BIOSTATISTICIAN

Our company currently has a need for a Ph.D. or equivalent background in biostatistics for our Statistical Quality Control Department. This position entails problem solving in the area of biologicals. We would like this person to have a knowledge of parallel line assays, slope-ratio assays, probit analysis, serial dilution, plate counts, as well as having a sound, basic background in probability and statistics. Experience is not necessary, but could be helpful. The location of the position is Detroit, Michigan. Salary open. Please send résumé and salary requirements to: **Personnel Department, Parke, Davis & Company, Joseph Campau at the River, Detroit 32, Michigan**.

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Challenging position for chemist in our Pharmaceutical Research Division. Need man to carry out new drug synthesis. M.S. degree with experience or Ph.D. minimum requirement. Our firm has modern facilities and is rapidly expanding. We offer an excellent future, security and fringe benefits, including a profit sharing program. Please send résumé in confidence to: **MCH, Research Dept., Diamond Laboratories, Inc., 2538 S.E. 43rd St., Des Moines, Iowa**.

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As a result of expanding activities, three new senior posts have been created in our Research and Development Division. Each offers an opportunity for individual development as well as full participation in multi-disciplined research projects.

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Should possess Ph.D. degree in physiology with interest in CNS research and the clinical application of neuro and psychotherapeutic drugs. Must have analytical ability, facility in communications and desire to work with both scientists and management people.

SENIOR PHARMACOLOGIST

Desire Ph.D. in general physiology or pharmacology preferably with some training in calculus to conduct basic and applied research studies which encompass broad functional areas, e.g., analgesics, cardiovascular agents, antitussives, etc.

SENIOR NEUROPHARMACOLOGIST

Require Ph.D. in pharmacology capable of organizing and implementing research studies which involve both the pharmacology and biochemistry of the CNS. A major objective of our program will be to determine biochemical correlates of drugs and procedures influencing CNS function which ultimately will lead to the development of new drugs altering brain biochemical activity.

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POSITIONS OPEN

ANALYTICAL RESEARCH CHEMIST

Leading midwestern manufacturer of animal health and feed medication products seeks chemist or biochemist to develop new analytical procedures for organic compounds in biological materials which will be used with the submission of New Drug Applications and their necessary accompanying data to the Food and Drug Administration. Applicants should have Ph.D. in Chemistry or Biochemistry or have equivalent laboratory experience. This position will require ingenuity and interest in the development of analytical methods. Experience in colorimetry, spectrophotometry, and fluorometry is desired. Please reply with complete résumé to:

Box 154, SCIENCE

Biochemist to participate in training program for research pathologists and to assist experienced Ph.D. Biochemist in supervising clinical chemistry laboratory of 450-bed Philadelphia hospital affiliated with university medical school. Ample opportunity for independent research and/or cooperative research with scientists in other fields. Adequate laboratory space, equipment, and personnel. Academic appointment dependent upon qualifications. Compensation commensurate with background and experience. Box 167, SCIENCE.

BIOCHEMIST. Research laboratories of a bulk pharmaceutical manufacturer require the addition of a senior investigator skilled in the isolation, purification, and identification of natural products from animal, vegetable, and microbial sources, with emphasis on enzymes and hormones. Qualified applicants should have a Ph.D. in the appropriate discipline, and up to 5 years' experience. Dr. C. W. de Fiebre, Research Director, The Wilson Laboratories, Pharmaceutical Division of Wilson & Co., 4221 So. Western Blvd., Chicago 9, Illinois. 6/29; 7/13, 27

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The man we are seeking must have a good background in organic chemistry, be creative and able to motivate people through respect and good sense. He will have the opportunity of working directly with a research-minded management.

Please send résumé including salary requirements to Box 159, SCIENCE.

INFORMATION SCIENTIST—For leading nutrition research and health education organization. Ph.D. or master's degree with training and/or experience in nutrition or biochemistry. To join coordination program of Department of Nutrition Research. Challenging position requiring broad interest in nutrition; writing ability essential. Duties include abstracting and interpreting nutrition research findings for professional persons, literature searches, and processing requests for technical information. Will provide scientific assistance for library. Liberal salary and fringe benefits. Send résumé to Director of Personnel, National Dairy Council, 111 North Canal Street, Chicago 6, Illinois. 8/10

Natural Science Instructor—Ph.D. preferred; for co-operative course, methods of inquiry oriented; present emphasis is biological, based on discussion of readings from original sources. Principal requirements: broad background and flexibility. **Loyola University**, Department of Natural Science—820 North Michigan Avenue, Chicago Illinois.

PHARMACOLOGIST

Ph.D. with or without postdoctorate experience to take charge of small group interested in general Pharmacological work. Send confidential résumé including salary requirements to Personnel Manager:

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RESEARCH BIOCHEMIST

Leading midwestern manufacturer of animal health and feed medication products has an immediate opening for a biochemist to design and conduct experiments with the purpose of investigating the metabolism of certain chemical substances and of separating and enumerating their metabolic end products. Position entails development and application of methods for separating and purifying residues, determining the nature of substances, developing analytical methods and other similar functions. Applicants should have a Ph.D. in Biochemistry or equivalent through experience. Age 25–40. Experience in separation and purification of chemical substances required. Please reply with complete résumé to

Box 155, SCIENCE

7/27

Research Technicians experienced in tissue culture and/or microbiology for semi-independent positions in basic scientific research. Bachelor's or master's degree in an appropriate science necessary. Excellent salary based upon education and experience plus liberal employee benefits. Submit résumé to Business Officer, **University of California, Naval Biological Laboratory**, Naval Supply Center, Oakland 14, California. X

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University of North Dakota
Medical School
Grand Forks, N.D.

JUNIOR RESEARCH FELLOWSHIP

The University of Melbourne calls for applications for three junior research fellowships, two to date from 1 March 1963 and the third from 1 June 1963. Salary will be in the range £A1650 to £A2450 and up to £A200 will be paid toward the passage of an overseas fellow. Applications should be lodged with the Dean of Graduate Studies, University of Melbourne, Parkville, N.Z., Victoria, Australia, by 30 November 1962.

Conditions for the fellowships may be obtained from the Australian News and Information Bureau, 636 Fifth Avenue, New York, or from J. S. Rodgers, Dean of Graduate Studies.

8/3, 10, 17

Predoctoral and Postdoctoral Fellowships in Medical Physics. Opportunities are available to do graduate work in the basic medical sciences. Emphasis is on the fields of radiation biology, radiation physics, and the clinical use of radioisotopes. Fellowship support is offered for study programs leading to the M.S. and Ph.D. degrees in medical physics and also for postdoctoral research. Stipends vary with training and dependents. Write to Chairman, Department of Radiology, Medical Center, University of California, Los Angeles 24, California. 8/10, 24; 9/7

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NEWS FROM BELL LABORATORIES

A simple, highly sensitive microwave amplifier

Bell Laboratories engineers have developed an extremely sensitive parametric amplifier which approaches the maser in sensitivity. Both will be used in experiments with Telstar, the Bell System's experimental communications satellite.

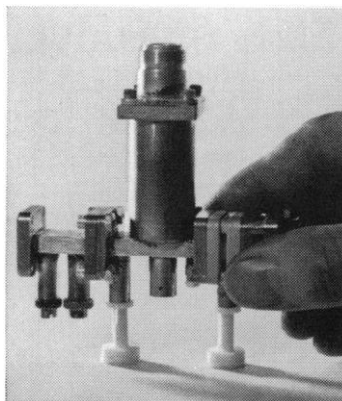
Heart of the parametric amplifier is a newly developed semiconductor diode with very low intrinsic noise. Previously, the sensitivity of such amplifiers at microwave frequencies was severely limited by the unwanted noise generated in their diodes. The new diode, no bigger than the eye-end of a needle, solved this problem.

Our engineers also devised new circuitry to stabilize precisely the output of the klystron (microwave generator) supplying power for the amplifier. To reduce further the intrinsic noise of the amplifier, they immersed the diode and its circuits in liquid nitrogen, utilizing a new cooling arrangement which economically maintains a low temperature for many days without attention.

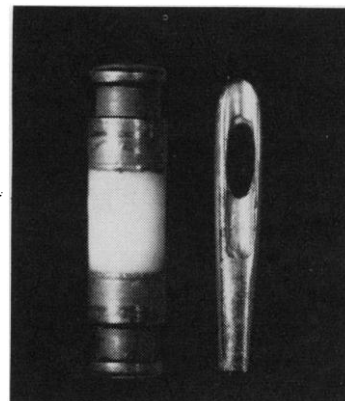
The new amplifier fills a need in the communications field for a simple microwave amplifier of high sensitivity in applications for which the higher sensitivity of the maser does not justify its additional complication.



Bell Laboratories' Michael Chrunev adjusts waveguide assembly (in circle) housing the diode. After adjustment the entire parametric amplifier will be immersed in liquid nitrogen in dewar at left. The new amplifier operates at 4170 megacycles (center of band) and provides an almost flat gain of 38 db over a 50-megacycle band with a noise figure of approximately 0.6 db.



Close-up of the waveguide assembly, in which Bell Telephone Laboratories' newly developed diode is located.



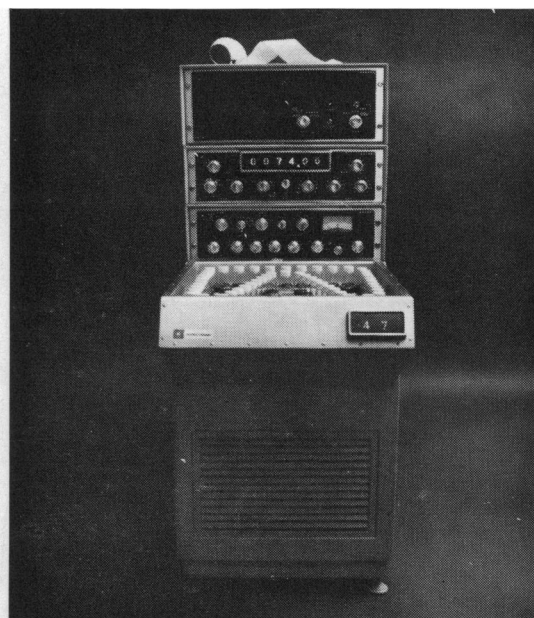
Heart of amplifier—a hermetically sealed gallium arsenide diode—is compared with eye of average-sized sewing needle.



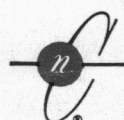
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