

Miscellany

Programs and Facilities

The University of Chicago's Enrico Fermi Institute for Nuclear Studies has announced that the research value of its 450-Mev synchrocyclotron has been increased through successful efforts to provide an external beam of protons directed into a newly constructed underground experimental room. Although the proton beam was actually extracted from the accelerator more than two years ago and has been used for some research ever since, the new beam room, with its control and measuring equipment, has only recently been completed.

The magnetic technique for extracting the proton beam, which is made difficult because the beam is highly sensitive to the slightest magnetic influences, was first conceived in 1950 by James Tuck and Lee C. Teng, then of the Fermi Institute staff. Efforts to extract the proton beam earlier were deferred to permit the late Enrico Fermi to conduct significant experiments with the meson beam produced when the synchrocyclotron was first operative. The meson beam, generated as the internal proton beam strikes a target of beryllium or copper, consists of only a few thousand particles per second as contrasted with the ten billion protons per second of the proton beam.

In 1954 Albert V. Crewe, who had refined the Tuck-Teng "regenerative" method, succeeded in being the first scientist in the world to extract a proton beam from a high-energy accelerator, the 380-Mev synchrocyclotron at the University of Liverpool in England. Sometime later, it has been reported, Soviet scientists also achieved an external beam. In 1955, a group at the University of Chicago under the direction of Mr. Crewe, now assistant professor of physics with the Fermi Institute, for the first time successfully extracted the proton beam from their machine.

A new laboratory of the British National Institute for Research in Nuclear Science is now under construction at Harwell on a site adjacent to the Atomic Energy Research Establishment. In commemoration of the work of Lord Rutherford, one of the most significant figures in the development of nuclear physics, the laboratory will be called the Rutherford High-Energy Laboratory. The first director of the Rutherford Laboratory is T. G. Pickavance, deputy head of the General Physics Division of the UK Atomic Energy Authority Research Establishment at Harwell, who has been in

charge of work on the design and construction of a large accelerator which is to be housed in the new laboratory.

Sandia Corporation, Albuquerque, N. M., has organized a new Physical Sciences Research Department to undertake fundamental research in fields supplying background for applied research and development programs in atomic ordnance engineering. The department is headed by Richard S. Claassen, who will be assisted by Frank P. Hudson. Projects initiated to date include investigations in defect solid state, high-temperature physics, magnetohydrodynamics, combustion processes, gaseous discharge phenomena, and study of radiation effects in semiconductors and polymers. A 2-Mev Van de Graaff accelerator has recently been purchased for the radiation effects research.

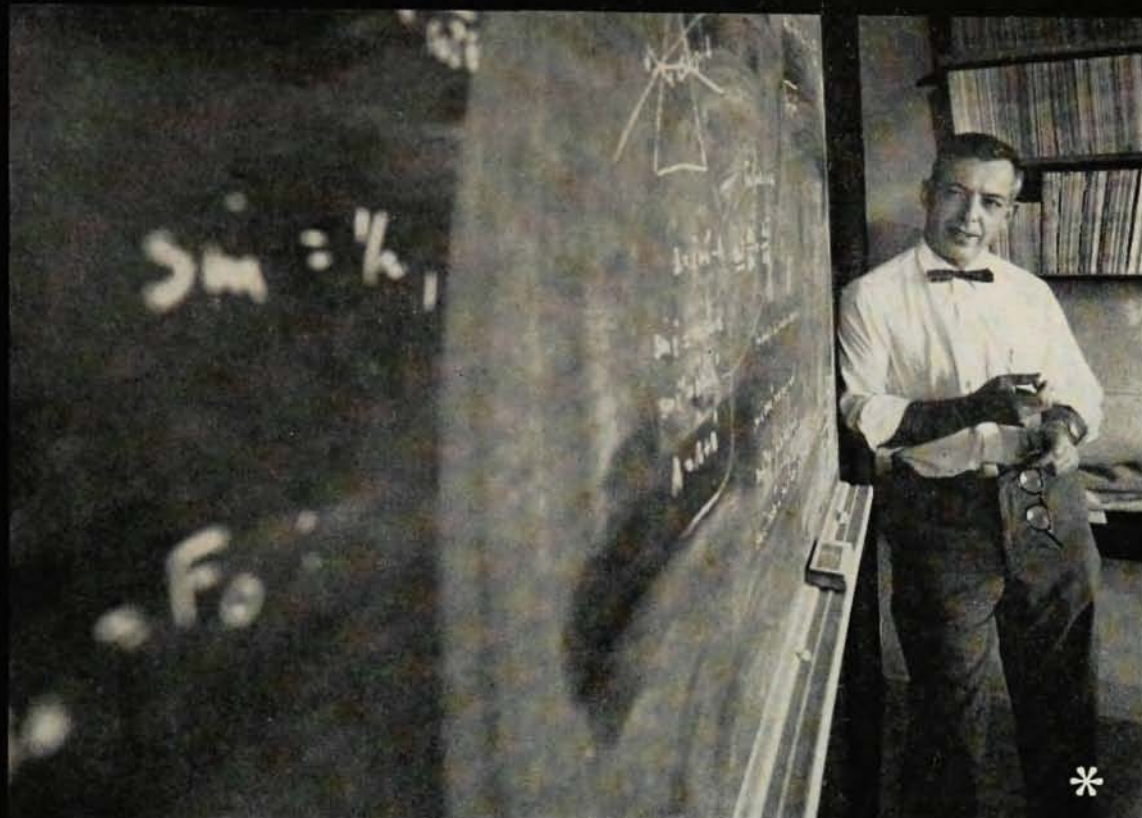
Michigan State University at East Lansing is planning a \$4.5 million expansion of its facilities for basic research that will provide for the installation of a 40-Mev heavy-ion accelerator, a nuclear reactor, and a special laboratory for the study of living organisms incorporating a system of simultaneous controls over such environmental variables as humidity, pressure, temperature, and gravity. The proposed enlargement of Michigan State's scientific program was recommended by a five-member faculty committee upon the completion of a study to determine the University's research status and needs. The recommendations have been approved by the State Board of Agriculture, which governs the school, and the necessary funds will be sought from both public and private sources in the state.

The University of Florida's Department of Physics, which is moving into a new building early this year, is initiating a low-temperature program that will be concerned with problems in both nuclear and solid-state physics, and as such will form part of the State of Florida's recently inaugurated Nuclear Development Program. Facilities provided in the new physics building include a Collins Helium Cryostat from Arthur D. Little Company.

Engelhard Industries, Inc., a new corporation formed by a consolidation of nine American companies in the precious metals and precision-manufacturing fields, is building a \$1 million laboratory in Newark, N. J., to serve as a research center to conduct metallurgical and other studies related to the interests of the corporation. The consolidated firms are Baker & Co., Inc., Hanovia Chemical & Mfg. Co., American Platinum Works, Amersil Co., East Newark Industrial Center, Inc., Irvington Smelting & Refining Works, D. E. Makepeace Co., National Electric Instrument Co., and The H. A. Wilson Co.

Educational Programs

A program in infrared spectroscopy will be held August 4-15 during the 1958 summer session at the Massachusetts Institute of Technology. The summer program, offered jointly by MIT's Spectroscopy Labo-



an oblique look

tech/ops scientists know there are at least three ways of attacking a problem: head on, as an amphibious force hits a beach; flank-wise, as a tactician likes to strike; and *slantwise*, the offbeat way.

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*Dr. Eric Clarke, *tech/ops* vice president, takes a look at a problem in his office at Burlington, Mass.

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ratory and Department of Chemistry, will consist of two introductory one-week courses, one on the technique and the other on the applications of infrared spectroscopy. Both courses are to be under the direction of Richard C. Lord, director of the MIT Spectroscopy Laboratory, who will be assisted by Prof. E. R. Lippincott of the University of Maryland Department of Chemistry. Application forms and full information may be obtained from Dr. James M. Austin, Director of the Summer Session, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Mass.

Hughes Aircraft Company, Culver City, Calif., is planning to grant fellowships for work towards the master of science degree to 150 science and engineering graduates throughout the nation in 1958. The fellowships include full tuition, books, and university fees plus salaries for part-time work as members of the Hughes research and development staff, where they will be assigned to do advanced research in military and industrial electronics. The remaining time will be spent working toward the MS degree in physics or electrical or mechanical engineering at the University of Southern California, University of California at Los Angeles, California Institute of Technology, or the University of Arizona. Specific fields of study will be chosen by the individual fellows. Inaugurated in 1952, the Hughes program so far has enabled 265 students to obtain master's degrees, and an additional 217 are currently enrolled in the plan. Applications sent to Hughes by April will be considered for 1958 awards.

Boston College has announced a two-week course in modern industrial spectroscopy to be held from July 21 to August 1. The course is designed for chemists and physicists from industry who wish to learn the techniques of emission spectroscopy as an analytical tool. Information on the course may be obtained from Prof. James J. Devlin, S.J., Physics Department, Boston College, Chestnut Hill 67, Mass.

Publications

Volume 1, Number 1 of *Molecular Physics*, published in England by Taylor and Francis Ltd., appeared in January. Academic Press Inc. (111 Fifth Ave., New York 3, N. Y.), is the distributor of the journal in the US and Canada. The new journal is edited by H. C. Longuet-Higgins of the Cambridge University Chemical Laboratory, assisted by J. H. van der Waals, Koninklijke/Shell-Laboratorium, Amsterdam, and a 31-member editorial board representing western Europe and the United States. Board members from the US include P. J. W. Debye (Cornell), J. O. Hirschfelder (Wisconsin), D. F. Hornig (Princeton), J. G. Kirkwood (Yale), W. Moffit (Harvard), and R. S. Mulliken (Chicago). *Molecular Physics* will concentrate primarily on original research papers dealing with (1) molecular structure and dynamics, (2) the electric and magnetic properties of molecules and the processes of molecular excitation, ionization, and dissociation, and