

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-