June 28 to July 2. Authorities from industrial, governmental, and educational institutions will give the lectures for both courses. The programs are planned to give a broad coverage of high temperature properties of materials and mechanics of creep by including physical, metallurgical, and design aspects of the subjects. For further information, write to Dr. Joseph Marin, Department of Engineering Mechanics, The Pennsylvania State University, State College, Pennsylvania.

Grants and Awards

Forty-two unclassified physical research contracts with universities, private research institutions, and industrial laboratories have been announced by the Atomic Energy Commission. The contracts, which generally were for a term of one year, were let as part of the AEC's continuing policy of utilizing private research laboratories in conducting research related to atomic energy. Among the contracts awarded are the following: California Institute of Technology, precision nuclear spectroscopy (J. W. M. DuMond); Carnegie Institute of Technology, research on properties of rare metals (J. E. Goldman); Columbia University, microwave spectroscopy (C. H. Townes); Illinois Institute of Technology, investigation of imperfections in solids (T. J. Neubert); University of Pennsylvania, solid state physics at low temperatures (W. F. Love); Purdue Research Foundation, research in nuclear reactions with fast alpha particles, neutrons and deuterons, and a study of nuclear structure (E. Bleuler), basic research using high-energy electrons and x-rays produced by a 300 Mev synchrotron (R. M. Whaley), and linear electron accelerator for nuclear physics (K. Lark-Horovitz); Sylvania Electric Products, Inc., self-diffusion and high-temperature phenomena (W. E. Kingston); University of Tennessee, studies on the direct measurement of the energy changes resulting from plastic deformation and phase transformations (E. E. Stansbury); University of Washington, sixty-inch cyclotron program (J. H. Manley); Washington University, generation of high voltages by means of nuclear radiations (J. W. Kennedy); and University of Wisconsin, low-temperature research (J. R. Dillinger).

Applications for grants in aid of chemical research from the Cyrus M. Warren Fund of the American Academy of Arts and Sciences should be received by the chairman of the committee, Professor Edwin R. Gilliland, Massachusetts Institute of Technology, Cambridge 39, Massachusetts, not later than April 22nd. Grants are generally made for apparatus and supplies needed for research. Application blanks will be sent upon request.

Graduate and advanced industrial research fellowships in electronics are now being offered by MIT under the joint sponsorship of a group of industrial organizations. Applicants for the graduate program must satisfy the requirements for admission to the graduate school on recommendation of the department of physics or the department of electrical engineering. Fellows will pursue programs of study and research leading towards advanced academic degrees in physics or electrical engineering. A few advanced research fellowships will be awarded to candidates with PhD's or the equivalent who wish to pursue advanced studies and research in electronics without enrolling as graduate students. Additional information can be obtained by writing to the Director, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

The department of oceanography, Texas A & M College, has announced graduate and research assistantships in physical oceanography, available to outstanding graduates in physics for 1954–55, amounting to $1800 each. Also, fellowships in engineering oceanography and assistantships in the fields of biological, geological, chemical, and meteorological oceanography, providing $900 to $3000 each, are available. Assistants in physical oceanography take standard curricula leading to the MS or PhD degree. They also take additional graduate work in physics and in the basic sciences or in engineering. In the assistantships, duties with the department would consist of aiding in the program of oceanographic research sponsored by various government agencies and by industry. Applications should be submitted by March 30, 1954. Most awards will be announced April 15, although additional openings are expected to occur after that date. Further information may be obtained by writing to the Head of the Department of Oceanography, College Station, Texas.

Research Facilities

A combustion laboratory is scheduled to be constructed by the General Electric Company at Schenectady this year at a cost of $1.8 million. The new laboratory will be devoted chiefly to basic scientific studies of combustion processes, according to C. G. Suits, director of research at G-E, and is designed to "bridge the gap between theoretical studies and realistic evaluation of these theoretical findings".

General Electric has also announced the construction of a new $300 000 general purpose radiation laboratory at Schenectady for use in programs involving the application of radioisotopes to the solution of industrial problems, development, testing, and application of various types of particle accelerators, studies of radiation damage, development of techniques of radiation shielding and of neutron activation analysis, and calibration of radiation instruments. The building, a part of the General Engineering Laboratory, will house six separate hot laboratories equipped with the latest facilities for safe handling of radioactive materials. Equipment presently planned includes an accelerator neutron source, several isotope radiation sources, remote handling devices, and associated radiation measuring equipment.

Arthur D. Little, Inc., consulting research and engineering concern in Cambridge, Massachusetts, has

formally dedicated a new $750 000 research laboratory in Boston. The building contains some 74 000 square feet of space for experimental work in physics and chemistry and for the development of new products and production methods.

The American Instrument Company, Silver Spring, Maryland, producers of high-precision instruments and laboratory apparatus, has erected a 40 000 square-foot plant at Savage, Maryland. The new plant will be engaged in electronics, mechanical and optical production, and in moisture engineering. Initially the company plans call for 300 to 400 employees.

All Navy Department studies of methods for protecting exposed surfaces of airplanes against corrosion, erosion, and ice coating are now centered at the University of Cincinnati Applied Science Research Laboratory. The problem of rain, a direct result of high speeds at which jets fly, is described as one of the most urgent matters to be investigated. Hostile planes are a jet's first enemy, but rain is a close second, according to Walter Soller, director of the laboratory. Rain erosion measuring equipment has been developed by the laboratory on the Cincinnati university campus. Part of the equipment, buried 12 feet below ground, is a propeller-like structure simulating a plane's leading edge which is run at velocities of 500 to 700 miles an hour under pelting artificial rain. The unit is controlled by an operator at ground level, protected by 18 inches of reinforced concrete. Besides the tests of experimental coatings, laboratory scientists are making fundamental studies of the physical and chemical conditions of adhesions.

A new water boiler research reactor has been designed and built by North American Aviation, Inc., for the Atomic Energy Commission and has been installed at the AEC's Livermore, California, installation which is operated for the Commission by the California Research and Development Company. Nuclear research scheduled for the new reactor, which is fueled with enriched uranyl sulphate in a water solution, will include fundamental studies as well as test work with various materials and components being studied for possible application to atomic energy equipment and processes. At its present operating level of 100 watts of power the unit will produce a concentrated field of neutrons to bombard and irradiate test materials. If required, the reactor can be converted to operate at 2000 watts of power to produce greater neutron flux.

Gadgetry

A 35-ton stratosphere chamber, designed to simulate altitudes to 80 000 feet, temperatures from − 100° to 100° F, and relative humidity from 20 to 95 percent, has been completed by Tenney Engineering, Inc., Newark, N. J., for the laboratories of the National Bureau of Standards at Corona, California.

UDEC ("Unitized Digital Electronic Computer") is, as its full name is intended to suggest, a high-speed