I. Goldanskii (Institute of Chemical Physics, Moscow) were elected foreign honorary members of the academy.

MACCHESNEY RECEIVES COMMON WEALTH AWARD

John MacChesney (AT&T Bell Laboratories, Murray Hill, New Jersey) received the Common Wealth Award in Science and Invention for his role in inventing the modified chemical vapor deposition process for manufacturing the highly pure silicon glass that comprises the core region of optical fibers used in long-distance telecommunications. MacChesney has been a materials scientist at Bell Labs since receiving his PhD in geochemistry from Pennsylvania State University in 1959. He received the award, an engraved trophy and an $18 000 prize, at a banquet in March. The Common Wealth awards are administered by the Bank of Delaware, and are presented annually to recognize excellence of achievement and high potential for future contributions in the dramatic arts, government and public service, literature, mass communications, science and invention, and sociology.

IN BRIEF

Emerson W. Pugh, a member of the research staff at the IBM Thomas J. Watson Research Center (Yorktown Heights, New York), is the 1988 president-elect of the Institute of Electrical and Electronics Engineers, and will become president of IEEE on 1 January 1989.

Timothy R. Donohue, professor of physics at Ohio State University, has become professor of physics and Vice Provost for Research and Graduate Studies at the University of Pittsburgh.

James Glass, chairman of the engineering science department at North Dakota State University, has become dean of the school of mathematical sciences and technology at Eastern Washington University.

OBITUARIES

Leonard S. Goodman

Leonard S. Goodman, who had a distinguished career in nuclear, atomic and molecular spectroscopy, died on 22 October 1987 after a long, gallant fight against leukemia.

Leonard S. Goodman

Goodman was born in 1921 and grew up in Los Angeles. He received his BA in physics from UCLA in 1943. He served in the Navy in World War II, for a time at the Naval Ordnance Laboratory. He then joined that remarkable group of postwar graduate students at the University of Chicago, which included Owen Chamberlain, T. D. Lee and C. N. Yang. He received his PhD there in 1952. Meanwhile he had started work at Argonne National Laboratory, initially helping Maria Mayer with opacity calculations. Goodman began his career as an experimentalist by using 14-MeV neutrons from a d,t source to measure cross sections, but he soon joined Sol Wexler in building an atomic-beam magnetic resonance apparatus for measuring the spins and moments of short-lived radioactive nuclei. In retrospect it is hard to overstate the importance of this work, which was carried on in a number of laboratories around the world, for the systematic development of nuclear physics.

In 1958, working with William J. Childs, Goodman sensed the need for systematic investigations of the hyperfine structure of stable atoms, and together they built a new, much more sophisticated apparatus to study metastable states of noncondensable beams using an electron-bombardment "universal" detector. Goodman spent much of his time making state-of-the-art additions to the machine, and between 1960 and 1972 he used it to study most of the 3d-shell elements and many 4d, 5d and rare earth atoms as well. The elucidation of the role of core polarization in the hyperfine spectrum of Fe^{57} was one important outcome of this work.

About 1970 Goodman constructed a third-generation atomic-beam apparatus specifically to study the hyperfine structure of actinide atoms. Because of the special problems involved, he pursued this effort jointly with Herbert Diamond, an actinide chemist at Argonne. Many ingenious features to contain the strong alpha activities encountered were engineered into the apparatus, and Goodman and Diamond eventually measured the nuclear moments and g factors of several einsteinium and fermium isotopes.

In the mid-1970s Goodman's main interest took a strong turn toward the development of a beam of positronium atoms for high-precision spectroscopy. This work consumed much of his time on and off until his death. He maintained an active interest in hyperfine structure, however, and pushed hard to get funding to apply single-frequency continuous-wave lasers to atomic-beam hyperfine structure. This effort led to important measurements in U^{235} and a number of rare earth elements.

Goodman's greatest satisfaction came from his original solutions to difficult experimental problems. For example, he was a pioneer at making variable and reversible magnetic fields (up to 25 kG) using only magnetic materials (with no currents). He was also among the first to build a digital noise filter to reject nonrandom spikes. To overcome the rapid intensity fluctuations in an actinide atomic beam, he designed a multiple-target assembly that rotated rapidly in synchronism with the switching of applied radio frequencies. To measure the Stark effect in a beam of diatomic radicals he constructed an electric field assembly that limited the applied radio frequencies to the central region while allowing a much more extended dc electric field.

His final achievement was the design of a "triplate" radiofrequency section for a collinear laser-ion double-resonance apparatus that allowed an order-of-magnitude reduction in the radiofrequency power required. Goodman was adept at programming and wrote a number of programs for the interpretation of complex hyperfine structure that have been used by many groups around the world. Although he retired officially early in 1986, he continued his positronium research until his death.

Goodman was a senior physicist in the physics division at Argonne and for a time was an assistant division director. As a physicist he took his social responsibilities very seriously; in the 1950s and 1960s he worked with physicians at Michael Reese Hospital in Chicago to reduce patients' radiation exposure from dental x rays and to measure calcium in patients' bones. He was often in-