Physics – Uspekhi **40** (7) 753 – 754 (1997)

PERSONALIA PACS number: **01.60.+q**

In memory of Dmitriĭ Petrovich Grechukhin

On January 24, 1997, sudden death took the life of Professor Dmitriĭ Petrovich Grechukhin. An outstanding theoretical physicist, he was a major authority in atomic and nuclear physics and a talented educator who created a whole scientific school around himself.

Professor Grechukhin was born in the town of Makar'ev in the Kostroma region on March 25, 1930. He spent his childhood and early adolescence in Novaya Sloboda, a community sprawled on the banks of the Volga river, just opposite the ancient town of Yuryevets. His father was the principal of Novaya Sloboda High School, while his mother was a teacher of the primary classes. Grechukhin, too, attended to this school from 1937 to 1947.

Immediately after he had finished school, Grechukhin entered the Faculty of Physics and Mathematics at the Leningrad Polytechnic Institute (LPI). He completed his diploma assignment under the supervision of A Z Dolginov, known for his works on angular correlations in gamma decays. This short but important period of exposure to 'big science' evoked a strong interest in this field, which remained with him for ever.

Grechukhin graduated from LPI with honors and was assigned, as a graduate, to the USSR Academy of Sciences' Laboratory of Measuring Instruments, later renamed the Institute of Atomic Energy (IAE). Since 1953, his life and career were inseparable from IAE. After an interview with I V Kurchatov, Grechukhin was assigned to the Theory of the Nucleus Sector headed by A B Migdal. Among his colleagues at the sector were B T Geĭlikman, G I Budker, S T Belyaev, and V M Galitskii. From the outset, Grechukhin demonstrated his independence in the choice of objectives and methods for his studies. He had an unorthodox and clear pattern of thinking, was substantial and profound in tackling the tasks at hand, and firmly defended his views.

Grechukhin's professional interests were many and diverse. Even his early papers published in the *Zhurnal Eksperimentalnoĭ i Teoreticheskoĭ Fiziki* (Journal of Experimental and Theoretical Physics) cut across seemingly disparate subjects, such as direct nuclear reactions and multipole transitions between low-lying states of nuclei. His subsequent studies had to do with collective models of the nucleus, radiation capture of polarized neutrons, cascade excitation of atoms in a medium, the theory of nuclear fission, various aspects of the conversion process and the nature of chemical bonding, the population and structure of nuclear isomers, the use of positron beams in nuclear spectroscopy, and parity nonconservation in mesoatomic and nuclear systems. Of course, this list is only an outline and by no means complete.

Uspekhi Fizicheskikh Nauk **167** (7) 791 – 792 (1997)
Translated by B V Kuznetsov

Dmitriĭ Petrovich Grechukhin

Professor Grechukhin placed special emphasis on problems where the results could be verified immediately by experiment. He was always interested in new experiments and the opportunities they could open up for research, and was always ready to cooperate with experimenters. In the 1950s, the anomalies revealed by experiments on (d, p)-reactions prompted him to probe into the mechanisms of direct nuclear reactions. In the 1960s, without severing his ties with nuclear physics, he joined a search for ways and means whereby the plasma in magnetic traps could be heated by the injection of highly excited atoms. He covered the related problems in a series of papers written in cooperation with E I Karpushkina (her candidate's dissertation was at the top of the list of those who received their candidate's degrees under Professor Grechukhin's guidance). In the 1970s and 1980s, his interest was focused on the conversion method for the study of matter, on whose development a team of physicists, both theoretical and experimental, began work at IAE.

The internal conversion of nuclear transitions was a subject of top priority in Professor Grechukhin's work from the very beginning. Even in his earliest paper on the subject,