

Yuriĭ Georgievich Abov (on his eightieth birthday)

DOI: 10.1070/PU2002v045n11ABEH001271

Yuriĭ Georgievich Abov, corresponding member of the Russian Academy of Sciences, chief research scientist at the Institute of Theoretical and Experimental Physics, reaches his 80th Anniversary on November 7, 2002.

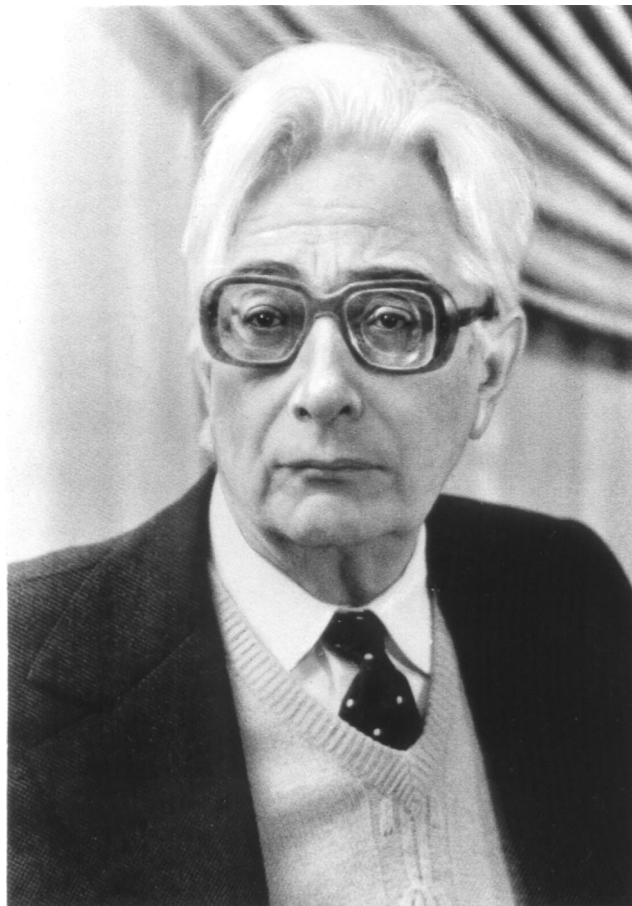
Yuriĭ Georgievich is one of that generation of Soviet scientists whose burden it was to reconstruct the defence parity of our country and to build up the atomic industry in post-war years. Abov's contribution to the technology of heavy water reactors, made at the end of the 1940s and the beginning of the 1950s, was later rewarded with the Sign of Merit Order.

Later Yu G Abov devoted his characteristic vigor and enthusiasm to the creation of the neutron diffractometer on the heavy-water reactor at the Institute of Theoretical and Experimental Physics (ITEP) — the first in our country — and to conducting the work of neutron structural analysis. Yuriĭ Georgievich still maintains his lively interest in this field, in the capacity of the scientific supervisor of the neutron optics group which runs experiments on one of the beams of the reactor of the Moscow Engineering Physics Institute (MIFI).

Yu G Abov and his colleagues pioneered the development of various techniques of polarization of thermal neutrons and applied them to physical research. Yu G Abov, A D Gul'ko and P A Krupchitskiĭ wrote *Polyarizovannye Medlennye Neitrony* (Polarized Slow Neutrons) (Moscow: Atomizdat, 1966), a monograph which is still now an irreplaceable source for anyone working with neutron beams. The group led by Yu G Abov experimentally discovered in 1964 the asymmetry of gamma-quanta emission in the reaction of radiational capture of polarized neutrons; this proved the existence of the weak interaction between nucleons in nuclei, the interaction that did not conserve special parity. For discovering this phenomenon Yu G Abov, V M Lobashev, P A Krupchitskiĭ and V A Nazarenko received the USSR Lenin Prize in 1974.

Together with F R Shapiro (Joint Institute of Nuclear Research, Dubna) and D Connor (USA), Yu G Abov and his team in ITEP created a new fundamental tool for matter research: beta-NMR spectroscopy (magnetic resonance and relaxation of polarized beta-active nuclei) that manifests extremely high sensitivity and has already produced a number of physical results of fundamental importance. Thus, this technique was used at ITEP to study the properties of defects formed in crystals after radiational capture of thermal neutrons by nuclei; also, precision studies were carried out of such fundamental processes of spin kinetics as the nuclear phase relaxation, multispin magnetic resonance and spin diffusion in disordered systems.

Under Yu G Abov's guidance, a beam of ultracold neutrons was produced at the ITEP reactor and a magnetic trap was built for the first time for the long-time confinement of neutrons; the confinement life-time achieved in the experiment approached the physical limit.



Yuriĭ Georgievich Abov

Yu G Abov's papers almost always created a lively response amongst physicists and stimulated new research. For the last 25 years professor Yu G Abov has taught at the Department of Theoretical and Experimental Physics of MIFI, and dozens of students have had a unique possibility of being trained by a person of outstanding erudition and an undiminished talent of researcher and teacher. Yuriĭ Georgievich still carries on his scientific and public activities: he is the Editor-in-Chief of the *Yadernaya Fizika* (Nuclear Physics Journal) of the Russian Academy of Sciences, a member of the Section of Nuclear Physics of the Division of Physical Sciences of the Russian Academy of Sciences, and an expert on a number of councils and committees.

Yu G Abov is a wise and charming person, a great pleasure to talk to for people of all ages and points of view.

Numerous friends, colleagues and apprentices of Yuriĭ Georgievich sincerely wish him many years of fruitful work in the field he loves, plus good health and happiness.

V V Vasil'ev, M V Danilov, G V Danilyan,
F S Dzheparov, N O Elyutin, P A Krupchitskiĭ,
V M Lobashev, V A Nazarenko, L B Okun',
A Yu Rumyantsev, A N Skrinkiĭ, A L Suvorov