

## Lev Abramovich Rivlin



Doctor of Physicomathematical sciences, professor Lev Abramovich Rivlin, an outstanding scientists in the field of laser physics, a scientific head of the Laboratory of Applied Physics of Moscow State Institute of Radio Engineering, Electronics and Automation was 80 on 14 March 2002.

Lev Abramovich Rivlin was born in 1922 in Khar'kov. He became absorbed in physics already in his youth, and was elected a president of M.Faraday City Physical Society, which was in the custody of the Ukrainian Physicotechnical Institute. In 1940 Lev Abramovich entered the Physicomathematical Department of the Leningrad Polytechnical Institute. Less than after a year, Lev Abramovich joined the Leningrad people's volunteer corps and participated in the Great Patriotic war being a front scout. He has battle awards. He resumed his education only in May 1946. Lev Abramovich defended his candidate thesis in 1960 and a doctoral dissertation in 1970.

The scientific activity of L.A.Rivlin is related to the generation of electromagnetic waves, from the centimetre to gamma ray wavelength regions. He is

deservedly proud that magnetrons developed by him at Istok Research Institute only recently were took off the armament of the anti-aircraft defence system of Moscow. Lev Abramovich was one of the pioneers of studying the ultrafast dynamics of semiconductor lasers. Under his supervision in the laboratory of the Polyus Research Institute, a coherent addition of radiation in a multichannel synchronised semiconductor laser was obtained for the first time. Already within a year after the advent of the first laser, Lev Abramovich proposed in 1961 the concept of a nuclear gamma laser. This work is considered a starting point of the development of a new branch of physics—quantum nucleonics, which extends quantum electronics to the nuclear region and the gamma ray frequency range. Quantum nucleonics remains the basic field of scientific interests of Lev Abramovich to the present day.

L.A.Rivlin put forward basic ideas in widely used developments such as the suppression of the amplified spontaneous noise with the help of saturable filters, the generation of giant pulses using a phototropic filter, and the transmission of optical images in a single multimode fibre. Later, he proposed to transmit similarly quantum images using strongly cooled atoms.

In a series of papers on the classical electrodynamics of non-plane physically realised waves, Lev Abramovich found subtle effects of the dispersion of waves in the free space of sub- and superlight propagation and also revealed the possibility of assigning the nonzero inertia and gravitational rest mass to photons of these waves. The electrodynamics of non-plane waves is another field of present scientific activity of L.A.Rivlin.

Lev Abramovich pays much attention to the education of young scientists. Many of his pupils have become candidates and doctors of sciences, and his former students remember him as a brilliant and profound lecturer.

L.A.Rivlin is a permanent member of the Editorial Council of *Kvantovaya Elektronika* from the time of its foundation. He was among a small group of scientists who founded the Polyus Research Institute. He is a member of the American Physical Society and of the British Royal Society of Electric Engineers.

Lev Abramovich possesses a remarkable sense of humour, great kindness, high culture and decency and invariable optimism. Personal contacts with him are always joyful and rewarding.

Colleagues and pupils, the Editorial Council, the Editorial Board, and the Editorial Office of *Kvantovaya Elektronika* wish the hero of an anniversary with all their heart and soul good health, happiness, and further successes in his scientific activity.