

In memory of Vladislav Borisovich Rozanov

(11 December 1932–5 September 2019)



Vladislav Borisovich Rozanov, doctor of physical and mathematical sciences, professor, leading specialist in the field of nuclear physics and plasma physics, one of the founders of the field of laser-fusion theory, passed away on 5 September 2019.

V.B. Rozanov was born on 11 December 1932 in the city of Lukhovitsy, Moscow region. In 1956, he graduated from the Substance Structure Department of the Faculty of Physics at the Moscow State University and was directed to NII-1011 (Research Institute-1011, presently the Russian Federal Nuclear Center–Zababakhin All-Russia Research Institute of Technical Physics), where he worked on the Soviet atomic bomb project from 1956 to 1966. The works of V.B. Rozanov of this period in the field of applied physics made a great contribution to strengthening the defence sector of our country, and in 1966 he was awarded the Lenin Prize.

From 1966 until the last days of his life, V.B. Rozanov worked at the Department of Quantum Radiophysics of the Lebedev Physical Institute, Russian Academy of Sciences. Vladislav Borisovich made a significant contribution to the development of the physics of high-power lasers. He is the author of one of the first schemes of an inner-shell photoionisation-pumped X-ray laser. V.B. Rozanov's research in the field of physics of emitting discharges formed the basis for the development of effective pump sources of high-power lasers of various types. In 1981, these works were awarded the USSR State Prize.

V.B. Rozanov made a huge contribution to the formation and development of research in the theory of laser fusion. He founded the Sector of the Laser Plasma Theory at the Lebedev Physical Institute, which he headed for 45 years. Under the leadership of V.B. Rozanov, the Sector has become one of the leading teams in the world, successfully working in almost all areas of the theory of laser plasma and laser fusion. With his active participation, models of the main physical processes of laser fusion were developed, which have become the basis for the development of mathematical program algorithms for the numerical simulation of compression and burning of thermonuclear targets; these algorithms were implemented in creative collaboration with scientists of the Keldysh Institute of Applied Mathematics, Russian Academy of Sciences. V.B. Rozanov is one of the authors of the concept of the target in the form of a thin spherical shell designed to achieve ultrahigh compressions of matter and high thermonuclear gain coefficients. All modern laser fusion target schemes are based on this concept. Vladislav Borisovich is the author of the 'evolutionary' theory of the development of hydrodynamic instabilities. He made a significant contribution to the development of the physics of a fusion–fission hybrid reactor during controlled initiation of a nuclear reaction by thermonuclear neutrons. V.B. Rozanov is one of the pioneers in this field; he is the author of several promising schemes of reactors of this type.

For 40 years, V.B. Rozanov lectured at the Moscow Engineering Physics Institute (currently, National Research Nuclear University 'MEPhI'), educating a galaxy of experts in the field of high-temperature plasma and laser fusion. More than 30 candidate and doctoral dissertations were defended under his scientific supervision. For several years, since the foundation of the journal, he was a member of the editorial board of 'Quantum Electronics'.

Vladislav Borisovich was a charming, highly intelligent person with encyclopaedic knowledge. The death of V.B. Rozanov is a huge loss for science and for everyone who knew him and worked with him.

The bright memory of Vladislav Borisovich Rozanov, a great man and a wonderful scientist, will forever remain in our hearts.

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