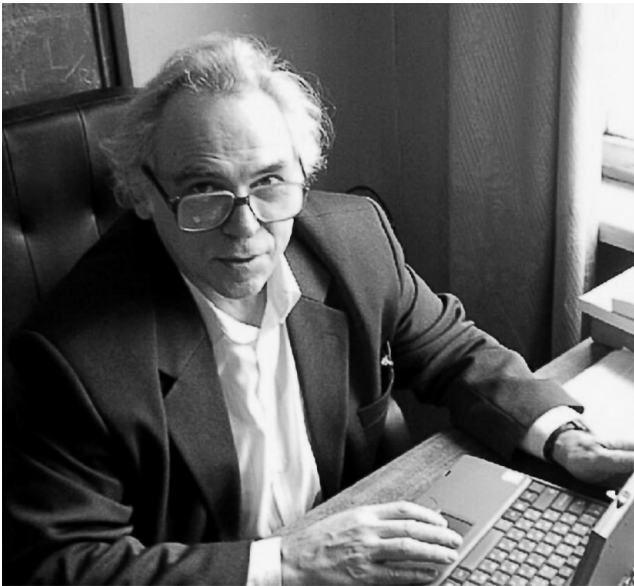


Sergei Ivanovich Yakovlenko



Sergei Ivanovich Yakovlenko, professor of physics and mathematics, head of the Department of Kinetics at the A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, and an active member of the editorial board of *Quantum Electronics* for many years, died on 5 January 2007 after a long disease.

Sergei Ivanovich Yakovlenko was born on 3 November 1945 in Leningrad in a service family. After finishing school with a silver medal in 1963, he entered the department of experimental and theoretical physics at the Moscow Engineering and Physics Institute. Sergei Ivanovich recalled that he became seriously interested in physics for the first time as early as his seven grade class at school, when he read the book 'Atomic Nucleus' by M.I. Korsunskii and was amazed by the unusual properties of the laws of microcosm. After graduating from MEPhI in 1969, S.I. Yakovlenko attended graduate school at the theoretical sector of the department of plasma studies at the I.V. Kurchatov Institute of Atomic Energy. The head of this sector was at that time academician M.A. Leontovich. After the end of his graduate research in 1972, Sergei Ivanovich continued to work at Leontovich's sector, first as a minor researcher, and from 1982 to 1984 – as a senior researcher.

The supervisor of the thesis (1969) and PhD work (1973) of S.I. Yakovlenko was in fact L.I. Gudzenko, a researcher at the laboratory of oscillations at the P.N. Lebedev Physics Institute, Academy of Sciences of the USSR. Sergei Ivanovich defended his PhD thesis at the Department of Physics at the Moscow State University, and his doctoral dissertation (in 1980), at the urgent request of M.A. Leontovich, at the Lebedev Physics Institute. When the General Physics Institute headed by academician

A.M. Prokhorov was separated out from LPI in 1982, S.I. Yakovlenko joined GPI at the suggestion of academician F.V. Bunkin, where he worked first as the head of the theoretical sector at the department headed by F.V. Bunkin and from 1994 – the head of the department of kinetics at GPI.

The scientific results obtained by S.I. Yakovlenko belong to the following directions: laser-induced atomic and molecular collisions, plasma lasers, properties of the classical Coulomb plasma, the theory of formation of runaway electrons and electron beams in gases.

In the 1970s Sergei Ivanovich predicted and studied theoretically collisions of atoms and molecules in the laser radiation field, in which a laser photon initiates simultaneously transitions in the electron shells of both colliding particles. He was awarded the Kapitsa medal for these works in 1995. The results of these studies were published in his monograph 'Radiative-collision Phenomena'.

The theory of plasma lasers proposed by L.I. Gudzenko and L.A. Shelepin in 1963 was developed in works of S.I. Yakovlenko in the 1970s–1980s. He published three books on this topic (together with L.I. Gudzenko, V.I. Derzhiev, and A.G. Zhidkov). A part of the results of the theory of laser-induced collisions and plasma lasers was used in his dissertations.

In the 1990s Sergei Ivanovich with collaborators obtained important results by solving numerically classical (Newtonian) equations for charged particles interacting by the Coulomb law. He used later these data in the discussion of some fundamentals of statistical physics. S.I. Yakovlenko (together with collaborators) was awarded the Krylov prize for his studies of the classical Coulomb plasma.

In papers published between 2003 and 2005, S.I. Yakovlenko (together with A.N. Tkachev) proposed a new approach to the explanation of the mechanism of generation of a runaway electron beam in gases. Sergei Ivanovich actively participated in the discussion of this problem till the end of his life.

S.I. Yakovlenko was an all-round man. He is the author of interesting scientific popular papers and papers on some philosophical problems of modern natural science and even works quite far from physics – on the history of Russia of XIX–XX centuries. These works were published in magazines *Voprosy filosofii*, *Znanie–Sila*, *Priroda* and *Moskva*. He included some of them to the collection 'On Science and Not Only on It', which he prepared to his 60 birthday. Sergei Ivanovich was not only a highly qualified physicist but also beautifully sang to the guitar and poetized.

S.I. Yakovlenko educated many pupils. Among them are twelve candidates and five doctors of physics and mathematics. Sergei Ivanovich Yakovlenko will always remain in the memory of his pupils and collaborators.

I.A. Shcherbakov, F.V. Bunkin, E.M. Dianov, V.I. Konov, V.V. Osiko, T.T. Basiev, V.P. Makarov, O.N. Krokhin, I.G. Zubarev, I.B. Kovsh, A.S. Semenov