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## Professor Myakzyum Khalimulovich Salakhov, President of the Tatarstan Academy of Sciences

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Myakzyum Khalimulovich Salakhov – President of the Academy of Sciences of the Republic of Tatarstan (AS RT), full member of the Academy of Sciences of the Republic of Tatarstan and member of the Presidium of the Academy of Sciences of the Republic of Tatarstan, Doctor of Physical and Mathematical Sciences, Professor, Laureate of the State Prize of the Republic of Tatarstan in the field of science and technology (2010), Honored Scientist of the Russian Federation and Republic of Tatarstan.

Born on July 13, 1951 in the township Sokolovka of the Kazakh SSR, in 1968 M.Kh. Salakhov graduated with a gold medal from secondary school No. 1 in Ulyanovsk. After graduating with honors from the Physics Faculty of Kazan State University in 1973, he entered the postgraduate course at the Department of Optics and Spectroscopy, after which he defended his PhD thesis on the prob-



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## Professor Myakzyum Khalimulovich Salakhov

lem of atomic spectroscopy and plasma diagnostics in January 1977. Since 1976 M.Kh. Salakhov works at the Department of Optics and Spectroscopy (since 2006 – the Department of Optics and Nanophotonics) as a Junior, Senior Researcher, Associate Professor, and after defending the dissertation in 1992 for the degree of Doctor of Physical and Mathematical Sciences – Professor (1993), Head of the Department (from 1991 to 2018).

M.Kh. Salakhov is the Leader of one of the most effective scientific directions in KFU – "Physics of Atoms and Molecules". Since 2006, the scientific school "Interaction of atoms and molecules with radiation and quantum electrodynamic effects in the emission spectra of atomic systems" has been the permanent winner of the competition of leading scientific schools on priority developments in science, technology and technology in the Russian Federation.

The main scientific works of M.Kh. Salakhov are on applied spectroscopy and mathematical processing of physical experiment data. He developed methods for spectroscopic diagnostics of low-temperature plasmas and plasmas with fractal dusty structures, which are used to determine the fundamental constants of the Stark broadening of spectral lines. With his direct participation, unique computational algorithms were developed for solving inverse ill-posed problems in applied optical spectroscopy. These algorithms were based on new tools such as regularization, fractional derivatives, wavelets, fuzzy logic, and neural networks. In fact, 20 years ago, he managed to see the potential for the development of machine learning algorithms, which form the basis of the current Artificial Intelligence developments.

M.Kh. Salakhov was the initiator of the creation of a new scientific direction for KFU – nanophotonics. In 2010, at the Department of Optics and Nanophotonics, the Laboratory of Nano-optics was established, where over the past 10 years the most important scientific results in the field of near-field optical microscopy, giant Raman scattering of light, nonlinear nanophotonics and thermoplasmonics were obtained. These results were published in top-rank scientific journals of the first quartile. The scientific groundwork allows today the department to reach a new qualitative level, providing the possibility of creating new technologies for optical imaging and supersensitive diagnostics of nanoscale materials. In the near future, this will lead to the development of the first prototypes of miniature laboratories on a chip. In addition, it will form the foundation for the development of new scientific areas such as optogenetics, cognitive photonics, twistronics, electrodynamics of photonic crystals and quantum dots, active thermoplasmonics and computational metamaterials.

Since 1997, under the leadership of M.Kh. Salakhov, international youth scientific schools "Coherent optics and optical spectroscopy" are annually organized. He is the Head of the Master Program in the direction of "Physics of atoms and molecules", since 1996 – the chairman of the specialized Council for the defense of doctoral dissertations in the specialty "Optics".

M.Kh. Salakhov had given lectures and reports in many countries, he published over 460 scientific works, including 4 monographs; 80 teaching aids; 16 PhD and 4 DSc dissertations were defended under his supervision. In 2004 he was elected a full member of the Academy of Sciences of the Republic of Tatarstan, he is a member of the Presidium of the Academy of Sciences of the Republic of Tatarstan. In 2001-2002 M.Kh. Salakhov holds the post of Vice-Rector of KSU for Financial Issues, on April 3, 2002, he was elected Rector of Kazan University. M.Kh. Salakhov was re-elected in 2007 and served as Rector until May 2010. In 2010-2014 – President of Kazan University, from July 1, 2014 to the present – President of the Academy of Sciences of the Republic of Tatarstan.

Scientific pedagogical and organizational activity of M.Kh. Salakhova received public recogni-

tion, he is a deputy of the State Council of the Republic of Tatarstan (from 2004 to the present), a member of the Presidium of the State Council of the Republic of Tatarstan, a member of the Committee of the State Council of the Republic of Tatarstan on culture, science, education and national issues. M.Kh. Salakhov – Chairman of the Regional Competition Commission of the V.I. Vernadsky Foundation. 2005–2010 M.Kh. Salakhov – Chairman of the Presidium of the Rectors of Universities of the Republic of Tatarstan and a member of the Presidium of the Russian Union of Rectors.

M.Kh. Salakhov was awarded the titles "Honored Scientist of the Republic of Tatarstan", "Honored Scientist of the Russian Federation", "Honored Professor of Kazan University". He was awarded the Order of Friendship, the Order of M. Lomonosov, the medal "For Valiant Labor", badges "Honorary Worker of Higher Professional Education of the Russian Federation" and "Honorary Worker of the Ministry of Internal Affairs of the Republic of Tatarstan", Letters of thanks from the President of the Republic of Tatarstan.

Under the leadership of M.Kh. Salakhov as the President of the Academy of Sciences of the Republic of Tatarstan, initiative works was launched to strengthen the role of the Academy in the accelerated and sustainable development of the Republic of Tatarstan as a leading region, implementing large-scale research projects.

In the year of the 70th anniversary of Myakzyum Khalimulovich, we wish him fruitful longevity, the implementation of his plans for the development of the Academy of Sciences of the Republic of Tatarstan together with his like-minded colleagues, for the benefit of further raising the status of the Republic of Tatarstan and its capital, Kazan, as one of the historical and modern centers of science and culture of our great Motherland – the Russian Federation.