

SASUN YAKUBOVICH YAKUBOV — 80

This year, our compatriot, a prominent mathematician Sasun Yakubov, is 80 years old. He was born on October 11, 1935 in Baku. Having finished secondary school with honours in 1953, at the same year Sasun Yakubov joined Azerbaijan State University's (now Baku State University) physics-mathematics faculty and graduated from this faculty in 1958 with successes. During his years at the University, he has listened lectures by Z.I. Khalilov, I.I. Ibrahimov, A.I. Huseynov, H.N. Agayev and other outstanding mathematicians of Azerbaijan. After completing his studies, he began working by assignment at the Research Institute of Physics and Mathematics and from the position of junior research fellow, he was promoted to the position of senior research fellow.



In 1962, S. Yakubov defended PhD dissertation on "Some issues of symmetric and symmetrized operators acting in Banach spaces" and received the scientific degree of candidate of physical-mathematical sciences. With his endless enthusiasm for mathematics and exceptional mathematical abilities, in 1969, in his 34 years, Sasun Yakubov defended doctor dissertation on "Solvability of the Cauchy problem for evolution equations and boundary value problems for nonstationary partial differential equations" in Voronezh city of Russia, and received the scientific degree of doctor of physical-mathematical sciences. Since 1970 to 1974 years he has worked as the head of a department at the Institute of Mathematics and Mechanics of Azerbaijan Academy of Sciences. Since 1974 to 1981 he was the head of the department of "Mathematical Analysis" at the Azerbaijan State Pedagogical Institute (now Azerbaijan State Pedagogical University). In 1981, S. Yakubov has returned back to the Institute of Mathematics and Mechanics and continued his activity at his home institute. In 1976, the scientific title of professor was conferred to him.

In 1990, Sasun Yakubov, together with his family, moved to Israel and since 1991 he continued his labour activity as a professor of Haifa University in Haifa city of Israel until his retirement in 2003. At present, he lives with his family in Netanya city of Israel and keeps close relations with his motherland Azerbaijan.

He has authored over 105 scientific works. These works have been published in authoritative journals of the former Soviet Union and different countries of the world (the USA, Germany, Holland, etc.). It is interesting that his first paper was published in 1958, in the year when he completed his education at the University.

Along with the use of the theory of differential-operator equations in his scientific activity, Sasun Yakubov is one of the known mathematicians with great merits in development of this field. His research is mainly developed in three directions:

1) Solving boundary value problems for elliptic-type differential-operator equations and studying some their spectral properties.

2) Solving the Cauchy problem for linear and quasi-linear parabolic-type and hyperbolic-type differential-operator equations and their applications to partial differential equations.

3) Multiple completeness of a system of root vectors of a system of unbounded operator pencils in Keldysh sense and its application to boundary value problems for partial differential equations.

Sasun Yakubov had scientific contacts with mathematicians working in the field of the theory of differential-operator equations such as S.G. Krein, Sh. Agmon, P.E. Sobolevskii, M.L. Gorbachuk, A.A. Dezin, Y. Dubinckii, V.K. Romanko, Y.T. Silchenko, V.A. Trenogin and other mathematicians.

Being the author of three monographs, Sasun Yakubov in his monograph "Linear differential operator equations and their applications", published in publishing house "Elm", has given for the first time a new definition of regularity of boundary conditions for ordinary differential equations. Unlike the classical definition of Birkhoff-Tamarkin, in this definition a linear continuous functional may also participate in boundary conditions. In fact, in this monograph, after S.G. Krein's known monograph "Linear differential equations in Banach space", M., Nauka, 1967, the important results in the field of differential-operator equations have been obtained.

S. Yakubov's second book "Completeness of root functions of regular differential operators" was published in 1994, in the USA.

His third monograph, written in collaboration with his son Yakov Yakubov, "Differential-Operator Equations. Ordinary and Partial Differential Equations" was published in the USA in 2000. (Yakov Yakubov is a professor of mathematics at Tel-Aviv University and he currently works at this University). This book was welcomed with great sympathy by the mathematicians working in the field of the theory of differential-operator equations and its applications to partial differential equations. For example, Professor Hector Fattorini from the Los-Angeles University writes: "For more than forty years now S. Yakubov has been a leader in this field, since the last twenty years in the company of Ya. Yakubov. Among them they created some of the most significant work in the field, some exposed in this book...As of today, this book is by far the best and most complete on differential-operator equations. The authors have done an excellent exposition job, making accessible to the general reader material that was only available in research papers... It is a book that will influence research for many years to come (September, 2002)".

Appearance of this book, after J.L. Lions and E. Magenes's monograph "Inhomogeneous boundary value problems and their applications", M., Mir, 1979 and H. Triebel's book "Interpolation theory. Function spaces. Differential operators", M., Mir, 1980, has created opportunities in the field of the theory of differential-operator equations for passing from the L_2 -theory to the L_p -theory, $1 < p < \infty$, and has played the role of stimulus for development of this theory.

It should be noted that solvability of an elliptic-type differential-operator equation with a spectral parameter in a Hilbert space and study of some their spectral problems belong to Sasun Yakubov and these issues are the central chapters of the above monograph. Now, using the methods and techniques developed in this monograph, solvability of boundary value problems for second and fourth order

elliptic-type differential-operator equations and investigation of some their spectral properties in the cases when one and the same parameter enters both in the equation and boundary conditions, are continued by Ya. Yakubov, B.A. Aliev, G. Dore, A. Favini and others.

About Sasun Yakubov was written in three encyclopedic editions: "Mathematics in USSR for 50 years" (Kiev, 1967), "International Biographical Centre" (Cambridge, 16-th edition, 1995), and "Who is Who in the World" (New Providence, 13-th edition, 1997).

Under Sasun Yakubov's supervision, 25 persons have defended their dissertations for receiving the scientific degree of candidate of physical-mathematical sciences. Five of them, afterwards, have received the scientific degree of doctor of physical-mathematical sciences. At present, his followers work in higher education institutions of different countries of the world. Even today Sasun Yakubov keeps in touch with his followers and gives them his better advices.

Childhood of Sasun Yakubov has run into the Second World War and passed very distressing. His father was killed at the Second World War and his family, consisting of three babies, was sentenced to grow only under the auspices of his mother Khana-Sara khanum. In 2013, Sasun Yakubov together with his granddaughter Sara Yakubova has published the book "The Righteous Woman" dedicated to the memory of his dear mother Khana-Sara khanum. By the artistic point of view, the book was compiled very nice. Although he lives in Israel, his beating heart is always with Azerbaijan and he considers Azerbaijan as his motherland. In the book about his life he said positive thoughts on kindness, humanity of Azerbaijan people.

Even today he keeps relations with his followers living in Azerbaijan. His son Yakov Yakubov worthily continues the path of his father.

Greatly respected Sasun Yakubovich, happy 80-th birthday! We wish you a health and meaningful life for many years with your children!

*Misir Mardanov, Jalal Allahverdiyev,
Rauf Huseynov, Mammad Bayramoglu,
Yusif Mammadov, Akbar Aliev,
Vagif Guliyev, Hidayat Huseynov,
Bilal Bilalov, Sabir Mirzoyev,
Veli Kurbanov, Bahram Aliev.*