YUII STEFANOVYCH SAMOILENKO
(to 75th birthday anniversary)

Yurii Stefanovych Samoilenko, an outstanding Ukrainian mathematician, was born on September 17, 1943, in Vladimirovka village, Volgograd region, Russia. His father, Stefan Pylypovych Samiylenko, was a widely known Ukrainian philologist. In 1965, Yu. S. Samoilenko graduated from Dnipropetrovsk State University, where he studied Mathematics and obtained, in particular, good background in Function theory, which remains a traditional research domain in that university.

Since 1967, his life is closely related with Institute of Mathematics, Ukrainian National Academy of Sciences. In 1967, he became a Ph.D. student of Yu. M. Berezansky, who introduced the young scientist into Kyiv Functional Analysis school. First papers by Yu. S. Samoilenko are devoted to integral representations of positive-definite matrix kernel, invariant with respect to certain transformation groups, and they formed a basis of his Ph.D. thesis, prepared under a supervision of Yu. M. Berezansky, which was completed to a Ph.D. degree in 1970.

A progress in developing mathematical models of physics stimulated further interest to infinite-dimensional analysis, especially to the spectral theory of infinite families of self-adjoint operators, which became one of the main research areas of Yu. M. Berezansky's research group. Yu. S. Samoilenko obtained a series of results in this area. One of the most cited ones is a construction and study of a nuclear space $\mathcal{A}$ of analytic functions of an infinite number of variables (with Yu. G. Kondratiev, 1978).

A natural question that arose was a possibility to obtain similar spectral decompositions for non-commuting families of operators, in particular, families satisfying certain kinds of algebraic relations. This topic uses formalism and methods of representation theory, and since then, most of the research interests of Yu. S. Samoilenko are concentrated

in spectral theory of non-commuting families of operators, representations of ∗-algebras and operator relations by bounded and unbounded operators in a Hilbert space. Classes of such problems include unitary representations of infinite-dimensional Lie groups, representations of graded analogues of Lie algebras, and others. In 1980, he published a joint paper with S. A. Kruglyak, where complexity of unitary classification problems has been studied, in particular, it was shown that certain classification problems are "wild", so there can be no satisfactory spectral theory for the corresponding operator families.

To investigate spectral problems for non-commuting operator families, Yu. S. Samoilenko formed his own research group first including the young mathematicians A. Daletskii, A. Kosyak, V. Ostrovskyi. Later a number of gifted students joined them. The results obtained by him and his students were summarized in his book "Spectral theory of collections of self-adjoint operators" (in Russian, 1984; translated into English in 1991).

In 1989 Yu. S. Samoilenko earned a degree of Doctor of Sciences.

Since 1988, Yu. S. Samoilenko with Yu. M. Berezansky and V. L. Ostrovskyi started an extensive study of non-commuting families of bounded or unbounded operators, related to an action of a certain dynamical system on the joint spectrum of some commutative sub-family. They selected the corresponding class of operator relations, and applied the results obtained by Yu. M. Berezansky on decomposition in generalized eigenvectors to the construction of commutative models for representations of such operator relations. These results were applied to a study of representations of non-commutative second-order curves, Cuntz algebras, Wick algebras, and other important classes of operator relations. Most of these results arose as a joint effort of him and his students V. Ostrovskyi, E. Vaysleb, Yu. Bespalov, L. Turowska, D. Proskurin, A. Piryatinskaya, and others. These results formed the main part of his book "Introduction to the theory of representations of finitely presented ∗-algebras. I. Representations by bounded operators" (with V. Ostrovskyi, 1999).

Starting in 2000, research interests of Yu. S. Samoilenko are related to a study of families of projections in a Hilbert space, and spectral decompositions of corresponding families of subspaces. One of the topics here deals with configurations of subspaces with some conditions on angles between each pair of subspaces (joint results with A. Strelets, A. Mellit, M. Vlasenko, N. Popova, Yu. Moskaleva, M. Zavodovsky). They introduced a class of Temperley-Lieb type ∗-algebras related to graphs, and studied their representations. Another topic is related to a study of families of projections, whose linear combination is a scalar operator. Such families are also known as orthoscalar families of projections or tight fusion frames. Yu. S. Samoilenko and his research group obtained a series of important results on orthoscalar representations of graphs and partially ordered sets, in particular, they showed that the description problem for orthoscalar representations for Dynkin graphs is of finite type, while the one for extended Dynkin graphs is of tame type. These results were obtained in collaboration with S. Kruglyak, S. Rabanovich, S. Popovych, M. Vlasenko, A. Mellit, V. Ostrovskyi, K. Yusenko, D. Yakymenko and others.

The study of configurations, related to graphs, required new results on spectral properties of graphs. A study of the simplest classes of infinite graphs raised a number of new interesting problems and results on finitely perturbed Jacobi matrices, interesting from the viewpoint of operator theory (joint research with Yu. Ershova, L. Tymoshkevych).

Yu. S. Samoilenko spent a large amount of his time on his work with his students. He regularly presented special courses at Kyiv Taras Shevchenko University, and actively involved his students into the modern research process. He was a supervisor of 25 successful Ph.D. degree theses, and a consultant of 3 Doctor of Science degree theses. His colleagues remark his exclusive ability to formulate mathematical problems and to raise

an interest to their investigation. During years, he had been surrounded by his students and colleagues discussing new mathematical ideas.

During the whole of his research period, Yu. S. Samoilenko works in the Department of Mathematical Analysis (later renamed to the Department of Functional Analysis), in 2001–2014 he headed the department.

His results were published in more than 150 research papers, 3 monographs and 3 textbooks. Results of his research group are widely known and recognized in many countries. A high scientific level of their research is justified by a number of international grants for joint research with leading scientists of Germany, Sweden, and Russia.

In 2003, Yu. S. Samoilenko was elected a Corresponding member, and in 2014 a Full member of the National Academy of Sciences.

Scientific achievements of Yu. S. Samoilenko are marked by the State prize of Ukraine for science and technology, Silver M. M. Bogolyubov Medal for outstanding achievements in mathematics, and the "Golden Fortune" International Academic rating medal "Honor. Glory. Labour".

We wish Yurii Stefanovych good health for many years to come, cheerful mood, and inspiration.

Editorial Board