

PERSONALIA

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60th anniversary of Yurii Nikolayevich Kul'chin

Academician Yurii Nikolayevich Kul'chin – an outstanding physicist, deputy chairman of the Far Eastern Branch of the Russian Academy of Sciences, Director of the Institute of Automation and Control Processes of the Far Eastern Branch of the Russian Academy of Sciences (FEB RAS) – was 60 on 9 February 2013.

Yurii Nikolayevich Kul'chin was born in 1953. In 1976 he graduated from the Moscow Engineering Physics Institute (MEPhI) – Faculty of 'N.G. Basov Higher School of Physicists' – and joined the Institute of Automation and Control Processes (IACP) of the Far Eastern Scientific Centre of the USSR Academy of Sciences. From 1979 to 1982 he was a postgraduate student at the MEPhI where in 1982 he defended his thesis for the degree of Candidate of physical and mathematical sciences (specialty 'Radio Physics, including Quantum Radio Physics'). From 1982 to 1988 he worked at the Far Eastern Polytechnic Institute, now the Far Eastern State Technical University (FESTU), as a senior lecturer, associate professor and head of the chair of physics. In 1988 Yu.N. Kul'chin enrolled as a doctoral student at the MEPhI and in 1991 he defended his thesis for the degree of Doctor of physical and mathematical sciences (specialty 'Laser Physics'). From 1992 to 2004 Yu.N. Kul'chin worked as a vice-chancellor for research at the FESTU.

In 2003 Yu.N. Kul'chin was elected a corresponding member of the Russian Academy of Sciences (specialty 'Physics'). Since 2004, Yu.N. Kul'chin has worked as a deputy-chair of Far Eastern Branch of Russian Academy of Sciences. In 2005 he was elected a director of the Institute of Automation and Control Processes FEB RAS.

Yurii Nikolayevich is a renowned expert in the field of photonics, nano- and microstructures and nanotechnologies, the author and co-author of over 400 scientific works, including 6 monographs and 24 patents and certificates.

Yu.N. Kul'chin pioneered the development of principles of organisation and technology of functional photonic and nanophotonic devices as the basis of new classes of distributed optical sensors, smart metering systems and analogue processors. He made fundamental studies of the physical processes that ensure acquisition, transmission and processing of information in photonic and nanophotonic devices; he made an enormous contribution to determination of the limiting possibilities of devices fabricated on the basis of nano- and microstructures. Yu.N. Kul'chin's most famous works include the study of liquid heterophase nanocomposite media with low-threshold optical nonlinearity. Yu.N. Kul'chin conducted fundamental research of the processes of recording and reconstruction of 2D waveguide and 3D dynamic holograms generated by nonlinear-optical interaction of spatially inhomogeneous light waves in photorefractive and semiconductor crystals that made it possible to produce highly adaptive optical sensors for nanometrology and monitoring of the physical fields.

Yu.N. Kul'chin was the first to investigate in detail optical, nonlinear optical and biochemical characteristics of marine life with biosilicate skeletogenous elements, to discover and study a new type of natural photonic crystals – spicules of silicon sponges, to create biometric analogues of these materials. Currently, under his leadership, a new scientific direction is being developed, i.e., biosilicate nanoscale materials with the desired structure and function, the purpose of which is to produce new materials for industry, medicine, photonics and nanoelectronics.

Yu.N. Kul'chin founded an officially recognised Leading Scientific School of the Russian Federation, which trained 7 doctors and 10 candidates of sciences.

The scientific and organisational activities of Yurii Nikolaevich are numerous and multifaceted: he is actively involved as a member of the RAS Committee on Nanotechnology, a member of the RFBR, a member of the Council on Grants of the President of the Russian Federation for state support of young Russian scientists and leading scientific schools of the Russian Federation, Chairman of the doctoral dissertation councils, a member of the editorial boards of six domestic and foreign journals, including such as Quantum Electronics, Avtometriya and Laser Biology, as well as the founder and editor of the Proceedings of the Annual International Conference 'Asia – Pacific Conference on Fundamental Problems of Opto- and Microelectronics' – SPIE (2000–2011).

Yurii Nikolaevich is remarkably benevolent and sympathetic; he is full of unrelenting optimism and has a tremendous capacity for work. He has outstanding leadership qualities, the ability to see into the future, to anticipate the circumstances and identify those key issues that will be crucial in solving the given problems. Admiring is his ability to work with young people and engage people with new research.

The editorial council, the editorial board and the editorial staff of Quantum Electronics congratulate the hero of the day on his jubilee. We wish you, dear Yurii Nikolaevich, health, implementation of creative ideas, indefatigability and many years of fruitful and happy life.

O.N. Krokhin, editor in chief of Quantum Electronics

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Translated by I.A. Ulitkin