# Orbituary Vladimir VAVILOV

Vladimir Platonovich Vavilov born in 1949, D.Sc., Prof., a leading specialist in thermal nondestructive testing, head of Thermal Testing laboratory at Tomsk Polytechnic University (TPU), passed away on June 9, 2026, at age 76, after a battle with cancer.

Following his graduation from TPU with honors in 1972, he earned his PhD in 1975 and his Doctor of Science in 1986. He spent more than 54 years at TPU, where he founded a scientific research field devoted to developing the theory, algorithms, software, and hardware for thermal nondestructive testing (NDT). In February 2010, the Russian Academy of Natural Sciences recognized him as a “Founder of a Scientific School”.

He was a cheerful, charismatic and remarkably versatile man, with a good sense of humour and a genuine passion for languages (could read in roughly 20 languages), as well as for reading, travel, and sports. He won multiple table tennis championships at the Siberian regional, Tomsk Region, and TPU levels; in 1979, he earned a blue belt from the British Karate Association. He was also a confident swimmer and a chess player who rarely lost without a fight.

He supervised 13 PhD candidates and 7 Doctor of Science students through to defense. During his career, he wrote 18 books, published more than 400 scientific papers, and held over 30 patents. His book, *Infrared Thermography and Thermal Nondestructive Testing*, co-authored with Douglas Burleigh and published by Springer in 2020, was the first book presenting the theoretical basics of thermal nondestructive testing (TNDT), by uniting elements of heat conduction, infrared thermography, and industrial NDT practice. In addition, he coined several terms now standard in NDT: dynamic thermal tomography, timegram, maxigram, and crawling spot. He also contributed to ISO standards development for infrared thermography.

He chaired the SPIE Thermosense XXX conference in 2008 (USA), was a member of conference committees, invited speaker at numerous international and Russian conferences, and served as a peer reviewer for journals, and PhD/doctoral theses. He co-edited scientific journals: *International Journal of Quantitative Infrared Thermography* and *Journal of Nondestructive Evaluation*; and served on the editorial boards of three Russian journals: *Testing. Diagnostics*, *NDT World Review*, and *Russian Journal of Nondestructive Testing*.

He gave lectures in English, Italian, and Polish across Europe, North America, and Asia, fostering international cooperation in the development of IR thermography and TNDT. He also delivered training courses in Colombia, Cameroon, China, India, Malaysia, and Italy. His work was regularly cited in the annual reports of the Russian Academy of Sciences.

V.P. Vavilov led the development of a software suite for TNDT modeling and infrared image processing, which has no equivalent worldwide and has already been supplied to universities and industrial companies in Russia, the USA, Italy, Finland, Poland, Great Britain, India, Malaysia and Germany. Working on TNDT of polymer composite and honeycomb structures, he pioneered a method for measuring the three components of the anisotropic thermal conductivity tensors directly on finished parts, later adopted in special mechanical and aerospace engineering. Under his leadership, robotic systems for active thermal testing of large-sized products made of polymer composite materials and coated metals were created; several modifications of portable TNDT units for detecting defects in composite skins of aircraft equipment were produced, and equipment for detecting cracks in turbine blades of aircraft and ground engines was devised and implemented. He worked out a method for inspecting aircraft of Russian airlines in operation and designed a software package for calculating multidimensional temperature fields in parts with internal defects. He was in charge of practical work on infrared thermography of aviation, energy, construction, and oil-and-gas industry facilities in the Siberian region.

He held a number of distinguished positions in scientific societies: was Vice-President of the Russian Society for NDT and Technical Diagnostics, a full member of Academia NDT International, and a Corresponding Member of the International Academy of Engineering. He was a member of the European Working Group on Quantitative Infrared Thermography (QIRT), the American Society for Nondestructive Testing (ASNT), and he served as an expert for the International Atomic Energy Agency (IAEA). In 2005, he was listed in *Marquis Who's Who in the World*.

He held Russia's top Level III thermal testing certification, was a senior energy auditor for the Ministry of Energy, and a licensed Infrared Training Center (ITC) instructor.

Among his awards were the Russian Government Prize in Science and Technology (2004), the title of Honored Scientist of the Russian Federation (2006), Scientist of the Year of Tomsk (2006), and the medal of the Order "For Merit to the Fatherland" 2nd class (2016) for his lifelong contributions to science, education, and the training of specialists. He also received the medal of the USSR Cosmonautics Society named after S.P. Korolev, along with various regional and federal medals, and won the All-Russian "Golden Names of Higher Education" competition in 2018. His name appeared multiple times on the TPU Wall of Honor.

Vlad was a curious scientist, a wonderful colleague, and a loyal friend we would always remember.

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