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CHRONICLE

Aleksandr Lazarevich Yakubovich on His 85th Birthday

Aleksandr Lazarevich Yakubovich, Professor and Doctor of Chemistry, was born on October 30, 1919. He began his work at the All-Russia Research Institute of Mineral Resources (ARIMR, or VIMS in Russian) almost 60 years ago. Prior to this, he had fought in the Second World War. Yakubovich was nonorably discharged from the army in response to a request he addressed to the Minister of Defense, in which he described his idea for the construction of fast-response radiometric instruments for the aerial prospecting of radioactive ore deposits. The resulting YaG-2 instrument was developed and brought to commercial production in 1946. During the 1947 field season, dozens of planes equipped with onboard aerial gamma-ray radiometers began to search effectively for ore in many districts of the Soviet Union. The operators of these instruments were taught at special ARIMR courses. The Chairman of the Council of Ministers awarded its prize to Yakubovich for the development of the aerial gamma-ray radiometer.

In the process of perfecting the instrument, a scintillation aerial gamma-ray spectrometer (ASG-38) was developed that allowed the operator to discern anomalous tracts with a preponderance of uranium ores against a background of anomalies in which thorium and potassium ores dominated.

Since the early 1950s, Professor Yakubovich has concentrated his efforts on developing instruments and methods for the elemental analysis of samples both in permanent laboratories and in the field. The first field setup for the separate determination of uranium, radium, thorium, and potassium in a single sample was developed in 1952 on the basis of scintillation detectors; its sensitivity was $n \times 10^{-4}$% eU (equivalent uranium). The VIMS-52 setup was brought to commercial production under the name LAS (laboratory analyzer, scintillation). This setup was also used in activation analysis. A set of instruments and analytical procedures was also developed for the rapid determination of a wide range of nonradioactive elements. Thus, the Berill (for determining beryllium by photon and neutron activation analysis), Neitron (for determining boron by neutron absorption), and Boksit (for determining aluminum by alpha activation) instruments were developed and put into industrial production, along with a number of other devices.

In the late 1950s, Yakubovich proposed a new analytical method, X-ray radiometric analysis. This method is based on the excitation of analyte atoms with radionuclide sources or low-power X-ray tubes, followed by the analysis of the characteristic spectrum of the excited atoms using radiometers. X-ray radiometric analysis has found wide use in geology, the mining industry, metallurgy, and other branches of science and industry. X-ray radiometric analysis was among the first analytical methods to be used in space research, e.g., for the analysis of Moon rocks and the soils of Venus and Mars. Professor Yakubovich was awarded the USSR 1983 Council of Ministers' Prize for the development and introduction of X-ray radiometric analysis.

Professor Yakubovich has received 45 inventor's certificates and 12 patents (in the United States, Great Britain, France, Sweden, Austria, and several other countries). He is the author of more than 160 scientific works, including 7 monographs on nuclear physical

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methods of analysis. Yakubovich has supervised the candidate dissertations of 26 graduate students and young researchers, 5 of whom later defended their doctoral dissertations.

Professor Yakubovich is both an Honored Geologist and Honored Inventor of the Russian Federation, as well as an Honorary Explorer of the Earth's Interior, and was decorated with the Order of the Great Patriotic War and the Order of the Red Banner of Labor. He was also awarded 13 medals by the All-Union Exhibition of the National Economic Progress (VDNKh, in Russian), 5 of which were gold medals. In addition, he received the Roentgen Medal from the European Academy of Natural Sciences in 2004. In 2002, Professor Yakubovich was awarded Prize of the Scientific Council on Analytical Chemistry of the Russian Academy of Sciences by decision of the Council Bureau. At present, Dr. Yakubovich is Chief Scientific Researcher at the All-Russia Research Institute of Mineral Raw Materials. He is Head of the institute's Council of Veterans.