

Present-Day Laboratories

DOI: 10.1134/S1061934809020014

Although we often say that the role of analysis outside the laboratory is constantly increasing, and it is true, the laboratory remains the main place for quality control and analytical testing and it is the place where a huge number of chemical analyses are performed.

Any factory worker knows that the central factory laboratory checks raw materials, supervises technological process, and assesses the quality of products. Ecologists or municipal workers deliver water samples to a laboratory to obtain data on its purity. For the patients of polyclinics (all of us are patients sometimes) the laboratory is the place where clinical analyses of blood and urine are performed. Forensic examiners use various types of labware to help crime-scene investigators search for evidence of a suspect's guilt or innocence. Special (intelligence) services personnel working in laboratories try to determine which explosives were used in a terrorist act. In other words, all of us understand that laboratory studies, tests, and chemical analyses play an important role in the economy, medicine, foodstuff control, military science, environmental protection, etc.

The present-day laboratory certainly contains, first of all, good equipment and "clever" measuring devices. However, a lab is not only this equipment. Instruments are nothing without procedures, which should often be carefully tested and legally standardized in one or another way. Analysts require certified reference materials, reagents, software, various auxiliary devices, and laboratory equipment, starting from furniture and glassware; quality assurance of the results of tests is also necessary. However, even a perfectly equipped laboratory with all the necessary devices is useless without specially trained and skilled workers, as well as capable

and creative managers. The present-day laboratory is a complex system, all elements of which are closely related to each other.

This system cannot stop developing, it is a living organism; like any living organism it participates in exchanges, not so much of substances as of information, knowledge, experience, findings. Such exchanges are made at workshops, conferences, mutual visits, and exhibitions, such as the A-TESTex exhibition, which was previously called AnalyticaExpo, or the LaboratoryExpo exhibition (both are held in Moscow every year). Thus, the LaboratoryExpo exhibition, which is organized by the All-Russia exhibition centre, plays an important role in this context. It presents the newest measuring devices and various laboratory equipment; the exhibition provides news in metrology, laboratory accreditation, and product certification; there one can see reference books and materials on laboratory design and construction, as well as the training of personnel. It is important that conferences, workshops, and competitions are timed to this exhibition. This is even truer for the A-TESTex exhibition.

The workshops conducted by companies that manufacture analytical devices are also useful. The workshops of the VMK Optoelectronics Company, which designed the well-known multichannel emission spectrum analyzers (MESA), generators, as well as spectrometers for atomic emission analysis, provide a good example. These workshops are held every year in August in Novosibirsk; they attract many researchers from applied analytical laboratories.

Yu.A. Zolotov