

## Analytical Chemistry Today

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EDITORIAL

The science that deals with obtaining, processing, and communicating information about the composition and structure of the matter is known as Analytical chemistry. In simple words, it is an art of determining what matter is and how much of it does exist. Modern analytical chemistry is dominated by instrumental analysis but the roots of analytical chemistry and some of the principles used in modern instruments are from traditional techniques, many of which are still used today.

Methods used to determine the identity and the quantity of the analyte in the field of Analytical Chemistry are of two methods. The Classical methods involve Qualitative analysis and Quantitative analysis. Qualitative analysis provides information about the identity of species or functional groups in the sample whereas the Quantitative analysis provides numerical information of analyte. The Instrumental methods involve Spectroscopy, Mass spectrometry, Electro chemical analysis, Thermal analysis, Hybrid techniques, Microscopy and Separation.

Analytical chemistry is the branch which is taught in almost all schools and colleges. But the applications of it are made in pharmaceutical industries, food factories, chemical industries, agricultural industries and in scientific laboratories. The shelf lives of medicines are determined by analytical chemistry. It is used to check for the presence of adulterants in drugs and also

employed in the process of chromatography where the blood samples of a person are classified. Soil can be tested to check for appropriate concentrations of minerals and nutrients that are necessary for plant growth. The concentration of the pesticide residues and the contaminants in a given food sample can also be determined using analytical chemistry. It helps in testing the cholesterol and glucose levels in the given blood sample. Analytical chemistry holds an integral part of forensic science, clinical analysis, and even in environmental analysis.

Analytical Chemistry plays a vital role in the development of science. It plays a vital role in research areas such as chemistry, bio chemistry, biology, geology, physics and other sciences. The Analytical chemists work to improve the reliability of existing techniques to meet demands for better chemical measurements that are required for the development in the society. They use their knowledge of chemistry, instrumentation, computers, and statistics to solve a problem. The measurements done by them are used to assure the safety and quality of food, pharmaceuticals, and water. The analytical chemists support the legal process and help physicians diagnose diseases. They provide measurements and documentation essential to trade and commerce. Analytical chemists often work in service-related jobs and are employed in industry, academia, and government. Analytical chemistry can be a challenging profession that makes significant contributions to many fields of science.

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