**Organic Chemistry**



Organic chemistry is the study of the structure, properties, composition, reactions, and preparation of carbon-containing compounds, which include not only hydrocarbons but also compounds with any number of other elements, including hydrogen (most compounds contain at least one carbon–hydrogen bond), nitrogen, oxygen, halogens, phosphorus, silicon, and sulfur. This branch of chemistry was originally limited to compounds produced by living organisms but has been broadened to include human-made substances such as plastics. The range of application of organic compounds is enormous and also includes, but is not limited to, pharmaceuticals, petrochemicals, food, explosives, paints, and cosmetics.

 **Where Is Organic Chemistry Used?**

Organic chemistry is a highly creative science in which chemists create new molecules and explore the properties of existing compounds. It is the most popular field of study for ACS chemists and Ph.D. chemists.

Organic compounds are all around us. They are central to the economic growth of the United States in the rubber, plastics, fuel, pharmaceutical, cosmetics, detergent, coatings, dyestuff, and agrichemical industries, to name a few. The very foundations of biochemistry, biotechnology, and medicine are built on organic compounds and their role in life processes. Many modern, high-tech materials are at least partially composed of organic compounds.

Organic chemists spend much of their time creating new compounds and developing better ways of synthesizing previously known compounds.

**Pharmaceutical**

The pharmaceutical industry develops, produces, and markets drugs licensed for use as medications for humans or animals. Some pharmaceutical companies deal in brand-name (i.e., has a trade name and can be produced and sold only by the company holding the patent) and/or generic (i.e., chemically equivalent, lower-cost version of a brand*-*name drug) medications and medical devices (agents that act on diseases without chemical interaction with the body). Pharmaceuticals (brand name and generic) and medical devices are subject to a large number of country-specific laws and regulations regarding patenting, testing, safety assurance, efficacy, monitoring, and marketing.

**Pharmaceuticals-companies:**
[Pfizer](http://www.pfizer.com/), [Novartis](http://www.novartis.com/), [Merck](http://www.merck.com/index.html), [Bayer](http://www.bayer.com/), [GlaxoSmithKline](http://www.gsk.com/), [Johnson & Johnson](http://www.jnj.com/), [Sanofi](http://www.sanofi.us/l/us/en/index.jsp), [Hoffman-LaRoche](http://www.roche.com/index.htm), [AstraZeneca](http://www.astrazeneca.com/Home), and [Abbott Laboratories](http://www.abbott.com/index.htm).

**The ACS Division of Organic Chemistry**

[The ACS Division of Organic Chemistry](http://www.organicdivision.org/) offers a wide array of resources, journals, symposia and events