Gas Chromatography

" The gas chromatograph is used for the quantitative and qualitative analysis of unknown chemical mixtures. It provides much faster and more accurate analyses than earlier wet chemistry methods and is very frequently used. The GC operates by physically separating a chemical mixture into its components. The mixture is passed in the form of a gas over a surface containing a partitioning agent that selectively adsorbs its components, thus slowing the rate of movement of some components relative to others. The adsorbing surface is contained in a column. Gas injected into one end of the column as a mixture (combined with carrier gas) emerges from the other end as a sequence of components that pass in series through any of several types of detectors for identification.

The first successful linkage of mass spectrograph and a gas chromatograph appears to be that of R.S. Gohlke, a researcher at Dow Chemical. In 1957, Gohlke used a Bendix time-of-flight mass spectrograph owned by Dow as his detector. In 1960, L.P. Lindeman and J.L. Annis published a means to link the gas chromatograph to a magnetic mass spectrograph. In the early 1960s Ryhage also developed and patented a jet separator linkage for this purpose.

When Gohlke published his paper on the linkage he had accomplished between the gas chromatograph and the Bendix time-of-flight mass spectrograph, Bendix personnel heard about the achievement and produced a commercial version in January 1959. Their system was, however, expensive and difficult to operate and was not a commercial success. In the early 1960s Ryhage attempted to commercialize his linking device on his own and failed. A Swedish company, LKB, then obtained exclusive rights to the Ryhage patent and successfully commercialized the device in November 1965."

(**Reference**: http://web.mit.edu/evhippel/www/books/sources/Appendix.pdf)