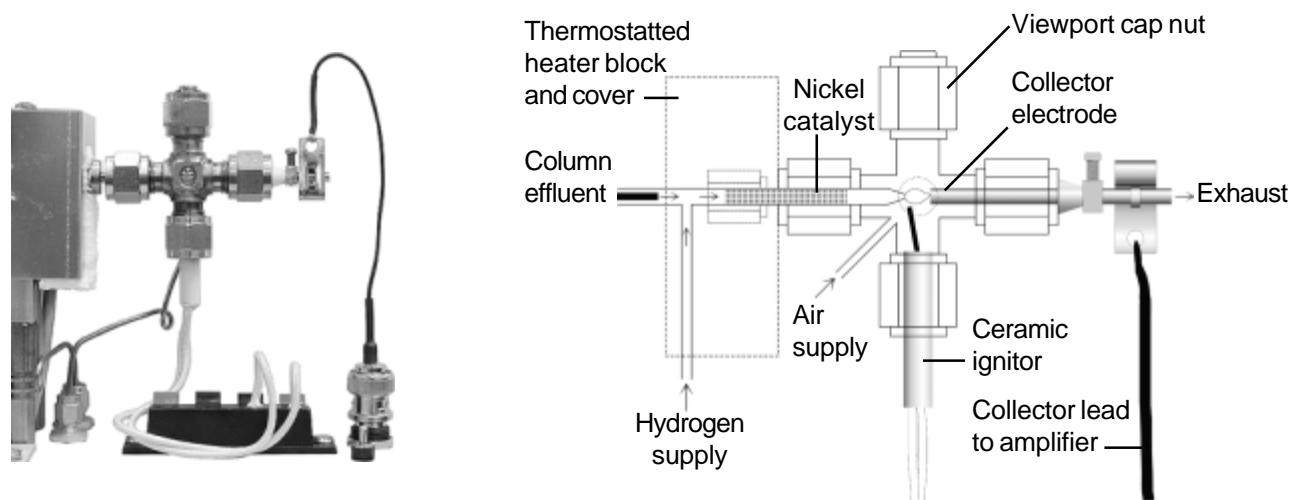


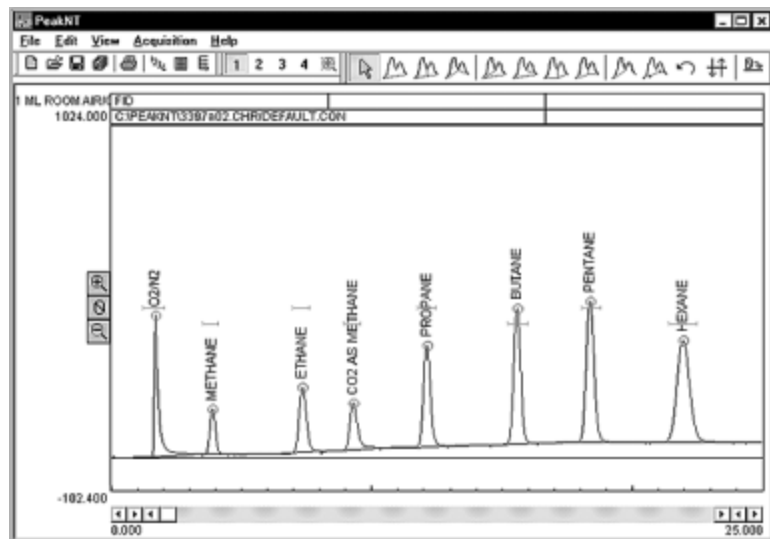
Methanizer-equipped FID Detector



The Methanizer option enables the Flame Ionization Detector to detect low levels of CO and CO₂. It is installed as the removable jet in a special FID detector assembly. The Methanizer / jet delivers the column effluent mixed with hydrogen to the FID detector. The Methanizer / jet delivers the column effluent mixed with hydrogen to the FID detector. The Methanizer is packed with a nickel catalyst powder on glass wool secured with two frits. During analysis, the Methanizer is heated to 380°C with the FID detector body. When the column effluent mixes with the FID hydrogen supply and passes through the Methanizer, CO and CO₂ are converted to methane. Since the conversion of CO and CO₂ to methane occurs after the sample compounds have passed through the column, their retention times are unchanged. Hydrocarbons pass through the Methanizer unaffected. The special Methanizer FID detector assembly operates like the regular FID detector, except that the FID temperature must be set to 380°C. Due to the chemical relationship between nickel and sulfur, the Methanizer can be poisoned by large quantities of sulfur gas.

Expected Performance

The following chromatogram was produced by an SRI Multiple Gas Analyzer #1 equipped with a Methanizer.



Sample: 41cc room air + 15cc 1000ppm C₁-C₆ injected into the 1mL sample loop = 250ppm CO₂ and C₁-C₆

Results:

Component	Retention	Area
O2/N2	1.650	4731.2140
Methane	3.866	2008.6000
Ethane	7.316	3854.7300
CO2 as Methane	9.250	3142.1040
Propane	12.083	5379.8755
Butane	15.533	7326.4440
Pentane	18.333	9136.3340
Hexane	21.900	10408.3160
Total		45987.6175