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APPLIED SCIENCES LABORATORIES
CHRONOLOGY OF CHROMATOGRAPHY

			<u>SENSITIVITY(ppm)</u>	<u>ACCURACY(%)</u>	<u>PURCHASE PRICE</u>
1957 1954	-	First Process Chromatographs	100	±10	\$ 2,500
1957	-	First GC in Monsanto (built by Applied Sciences)	100		\$ 3,500
1954	-				
1959	-	Flame Ionization Detector. High Resolution and programmed temperature P T			
1960	-	Closed Loop Process Control		±5	
1961	-	Dual Column ^{Programmed Temperature} GC Pioneered by Applied Sciences	0.01 (CI)		
1962	-	Electron Capture Detector (CI) for GC	0.01		
1967	-	High Pressure Liquid Chromatograph		±2	\$11,000
1971	-				
1970	-	Integrators/Computers Autosampler for GC			
1972	-	Gradient Elution LC	1 (general) 0.01 (CI)		\$18,000
1972	-	Flame Photometric Detector for GC			
1974	-	Variable Wavelength UV			\$20,000
1976	-	& Fluorescence Detectors for LC			
1976	-	Nitrogen/Phosphorous Detector for GC			
1980	-	0.1 general			
1979	-	Thermal Energy Analyzer as 10^{-4} Detector for GC (Nitrosamines)			
1979	-	Autosampler for LC			

APPLIED SCIENCES LABORATORIES
CHRONOLOGY OF MASS SPECTROMETRY

		<u>SENSITIVITY(ppm)</u>	<u>ACCURACY (%)</u>	<u>COST ANALYSIS</u>	<u>PURCHASE PRICE</u>
1947	- First Monsanto MS Texas City (Westinghouse)	100	±5		
1964	- GC/MS CEC-130 MS	10	±20		
1966	- Detection of PCBs - Sweden	10	±15	\$ 500	\$80,000
1967	- MAT - CH4				
1970	- Computer Coupled to MAT-CH4	10	±10	\$ 200	\$80,000
1974	- H-P 5892A GC/MS with 5982AEI and CI, Computer Control Chemical Ion Selected of Data Ion Monitor Acquisition and Reduction	0.1	±5	\$ 100	\$150,000
1980		0.01	±3	\$ 250	\$207,000
1979	H-P 5985 Totally Automated GC/MS with On-line library Searching	0.01	±3	\$ 50	\$ 170,000
1981	Triple Quadrupole MS/MS				\$ 350,000

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