The Direct Current Plasma (DCP) source was developed by William Schrenk over the late 1960s and early 1970s. This emission source utilizes a DC current (40-60 V, 10-15 A, ~750W) which flows between C anodes and W cathode. The plasma core is at 10,000 K and the viewing region at ~5,000 K. The DCP is simpler, uses less Ar than ICP, so it is less expensive to operate. There is still a high e-density and less ionization than ICP (more "useful" for 1A and 2A elements by a factor of 10 to 100 times). Some of the downsides include the fact that much of the analyte goes around the plasma. The spectra are more complex than ICP. The DCP is very tolerant of complex samples (solids and slurries) which make it a good technique, if available, for samples that have matrix problems.

References