Microwave Plasma Atomic Spectroscopy

MWP has been used for various atomic spectroscopic methods excitation light source or atomizer. Due to the high electron temperature MWP's (20000 K or so), but also a higher excitation temperature (5000 K or so), while lower gas temperatures (2500 K or so), it is a good atomic emission spectrometry ((AES) an excitation light source.

When using helium as the working gas, has a high ability to stimulate, excitable halogen ion lines, including determination of almost all elements, including the halogens. MWP because of the low gas temperature, so the sample capacity is limited. But through the sample to dissolve and flow injection injector and new microwave plasma torch (MPT) using light, this problem has been solved to a certain extent. MWPAES and gas chromatography (GC) combined with is the best, because less sample GC, the small impact on the MWP, and this combined with technology not only for qualitative and quantitative analysis, and the head _ experience unknown compounds can be determined style.

MWPAES also be used as supercritical fluid chromatography, high performance liquid chromatography and capillary electrophoresis detector. The MWP and glow discharge (m) in series AES analysis of solid samples were not only the intensity of the analyte can greatly increase the emission lines, but also make the tables more uniform sputtering conducive layer by layer analysis. MWP can be used as mass spectrometry (MS), ionization source, MWPMS not only simple background, while the head than MWPAES _ better detection capabilities, the elements have a lower detection limits. Due to the low power MWP used, so it can be used for soft ionization source of the MS.

The light source modulation technique, you can also use the same set of devices, to obtain a compound of atomic information at high microwave power, but at low microwave power obtained compound of molecular information. MWP also used atomic absorption spectrometry and atomic fluorescence spectrometry atomizer. Because MWP is a good source of ionizing and ultraviolet light source, and therefore can be used as direct ionization GC detectors or photoionization detector.