

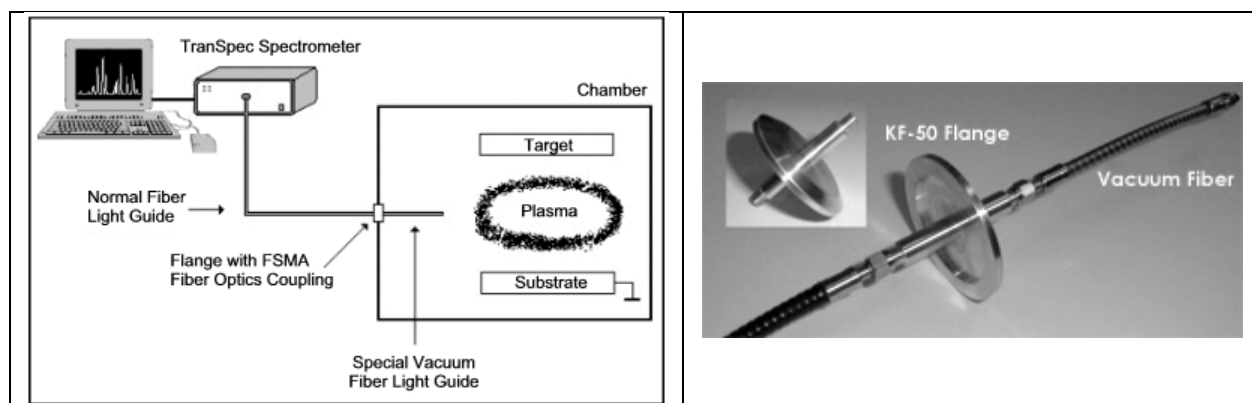
Plasma Emission Measurement

Application Note

An objectively and continuously process control of low-pressure plasma deposition techniques, such as PVD (Physical Vapor Deposition), is one of the real measurement issues today. Aside from a visual examination of the plasma's light emission, sometimes the mass spectroscopy technique is used. Especially the mass spectroscopy is neither handy to operate nor the results are easy to interpret. Compared with this, the benefits of using the OES (Optical Emission Spectroscopy) and our fiber optics coupled **TranSpec** spectrometers are obvious:

- Simultaneous and fast measurement in the spectral range of ~ 200...1000 nm
- Detection of even very low emission intensities by optically integrating measurement
- Connectable to almost every vacuum chamber by standard flange and fiber optics
- Spatially resolved measurements using special, vacuum-tight and flexible fiber optics
- Maintenance-free and easy-to-use technology
- No wavelength calibration required for the entire lifetime of the system

As shown in the schematic gauge setup below, the plasma's light emission is observed inside the chamber through a special flexible vacuum fiber optics, which is connected by a flange with another regular fiber light guide outside the chamber. Due to the technique of flexible light guides, the plasma emission can be observed even at different positions inside the chamber:



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