



Improved Spectrometer for Long Path Length Absorbance OTT ID #1207

APPLICATIONS

Absorbance Spectroscopy, Chemical and Analytical Lab Research Tools, Flow Injection, Gas Chromatography, Liquid Chromatography/HPLC, and Capillary Electrophoresis.

TARGET PROBLEMS

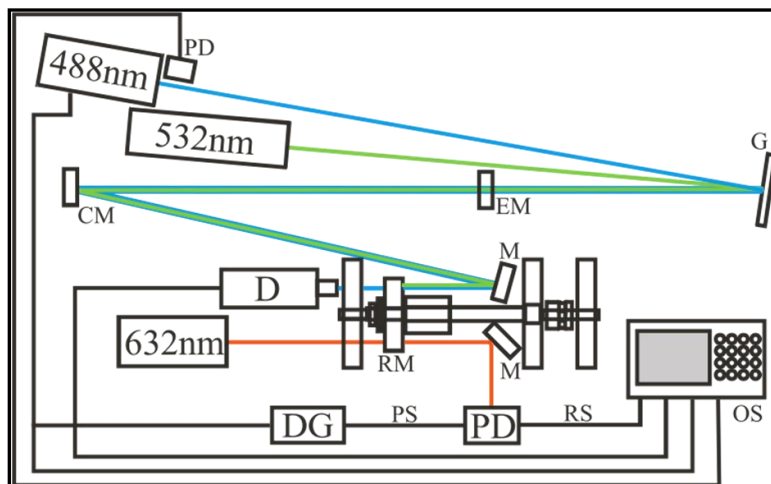
- ❖ Conventional spectrometer configuration has narrow range of measurable concentrations
- ❖ Limited path length that limits the sample range

KEY FEATURES

- ❖ **Wide Sample Concentrations** - Allows for measurement of extremely dilute samples, and adjustable path length also allows for measurement of high concentration samples.
- ❖ **Low Cost** - Design uses standard optics and off-the-shelf spectrometer components.
- ❖ **Flexible Design and Variable Path Length** - The dove prism configuration allows for liquid flow-through spectroscopy and evanescent wave measurements of condensed phase samples.

TECHNOLOGY

A technology that improves the optical configuration of spectrometers for long path length absorbance measurements for gas and condensed phase. The current technology uses a compact optical cavity with a rotating mirror to control the beam path length as shown in the diagram. For example, HPLC is a technique that could benefit from this unprecedented capability in measuring a wide range of concentrations, i.e., samples containing both ultra-trace as well as relatively high levels could be measured in the same chromatographic run.



INTELLECTUAL PROPERTY [US Patent 9,013,700](#)

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