

Spectroscopy of trace gases using a pulsed optoacoustic technique[†]

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The spectra of C₂H₄, CO₂, NO₂ and SO₂ were recorded using a laboratory-built pulsed optoacoustic spectrometer. A single mode pulsed transversely excited atmospheric CO₂ laser was used as the excitation source. For C₂H₄, a detection limit of 50 ppt v/v (10⁻¹²) was achieved, while for CO₂, NO₂ and SO₂ the detection limits were 100, 100 and 50 ppb v/v (10⁻⁹), respectively.

Keywords: *Pulsed photoacoustic spectroscopy; trace gas analysis; atmospheric pollutant monitoring; laser spectroscopy*