

Title (en)

MEASURING ARRANGEMENT AND METHOD FOR MONITORING A TRACE GAS

Title (de)

MESSANORDNUNG UND VERFAHREN ZUR ÜBERWACHUNG EINES SPURENGASES

Title (fr)

SYSTÈME DE MESURE ET PROCÉDÉ DE SURVEILLANCE D'UN GAZ À L'ÉTAT DE TRACES

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Abstract (en)

[origin: WO2022180244A1] The invention relates to a measuring arrangement (10) for intra-cavity absorption spectroscopy on a trace gas (12), comprising a laser (14) for generating electromagnetic radiation (16), and a measuring cell (20) for receiving the trace gas (12), the laser (14) comprising a laser medium (22) and a resonator (24), the laser medium (22) being arranged in the resonator (24), the resonator (24) and/or the measuring cell (20) being configured in such a way that the trace gas (12) is introducible into the resonator (24), the laser (14) being configured in such a way that exactly two modes (28a, 28b) are emitted, one of the two modes (28a, 28b) having a frequency in the vicinity of an absorption transition (30) of the trace gas (12), the two modes (28a, 28b) competing with each other, and a) the measuring arrangement comprising a polarization beam splitter, the two modes (28a, 28b) being two linearly polarized modes (27a, 27b) and the two linearly polarized modes (27a, 27b) being polarized orthogonally to each other, or b) the laser medium (22) providing a plurality of laser transitions, and the two modes (28a, 28b) being two modes (29a, 29b) having different laser wavelengths. Furthermore, the invention relates to a method for monitoring the trace gas (12) by means of the above measuring arrangement (10).

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