

Title (en)
ACOUSTIC INTERFEROMETRY METHOD AND DEVICE

Title (de)
VERFAHREN UND EINRICHTUNG FÜR DIE AKUSTISCHE INTERFEROMETRIE

Title (fr)
PROCEDE ET DISPOSITIF D'INTERFEROMETRIE ACOUSTIQUE

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Application
EP 01968067 A 20010822

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Abstract (en)
[origin: WO0216924A1] A standing wave interferometry analysis method and sensor (20) for characterizing physical properties of fluids, suspensions and emulsions at ultrasonic frequencies is disclosed. Standing wave features, peaks and valleys are created by continuously changing the ultrasonic frequency by small intervals, between the two ultrasonic transducers (22, 24), which define a sensing zone (30). The transducers (22, 24) are located a known distance apart, for operating in their near field region. Standing wave features are analyzed for frequency location, amplitude and frequency width. The temperature is recorded at each frequency interval. Data from one or more standing wave features are used for calculations of viscosity, density, particle concentration and sound velocity. More accurate particle concentration data is obtained by repetitively scanning the same standing wave peak and measuring resultant frequency shift, caused by particle concentration at the receiving transducer (24). The method is applicable to sub-micrometer particles and measuring the carbon concentration in used engine oil.

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