1. Record Nr. UNISA996206263203316

Titolo	2005 IEEE Ultrasonics Symposium
Pubbl/distr/stampa	[Place of publication not identified], : I E E E, 2005
ISBN	1-5090-9868-2
Descrizione fisica	1 online resource : illustrations
Disciplina	534
Soggetti	Ultrasonics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Sommario/riassunto	Application of piezoelectric flexural mechanical resonators such as tuning forks to accurate measurements of liquid physical properties is discussed. It was shown earlier that liquid properties such as viscosity, density and dielectric constant can be obtained by measuring the resonator AC impedance within certain frequency range and fitting it to the resonator equivalent circuit model [1]. Error sources for the liquid property measurements and their influence on the measured value are investigated. It is shown experimentally that the reproducibility of the viscosity and density measurements using this technique can meet and often exceed the one delivered by the well established analytical instrumentation. It is also demonstrated here that better performance is resulting from the use of the whole impedance curve over a frequency range, which produces better statistics and natural averaging of the noise.