

0.1 Abstrakt

Mach-Zendher interferomter with phase shift used on diffusion and erosion in water. This interferomter have a higher resolution than the Michelson interferometer and gives a better picture of microfluidic devices. In this article it was tested on table salt diffused in water and erosion of calcit with running water. The diffusion was a test to see if the equipment still worked and that all the pieces could cooperate, and the calcite were to give an estimate of the precision of the equipment. The erosion showed that the setup that was used did not have enough resolution to get the full effect of the Mach-Zendher interferometer.

0.2 Introduksjon

The Mach-Zendher interferometer was first proposed in 1891 by Ludwig Zendher [1] and later on refined by Ludwig Mach [2]. In the later years it has been used for understanding the kinetics of dense fluid transport properties [3, 4].

Exactly this interferometer were used by D. K. Dysthe in 1995 to measure NaCl/water and 1-butanol/water. It was then found to have a precision of 0.6% for NaCl and 1.4% for 1-butanol [5].

0.3 Metode

0.4 Resultat

0.5 Diskusjon

References

- [1] L. Zendher. Ein neuer interferenzrefraktor. *Zeitschrift fr Instrumentenkunde*, 11:275–285, 1891.
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- [3] Tyrrell H. J. V. and Harris K. R. Diffuson in liquids. 1984. Buttersworths: London.
- [4] Dymond J. H. *Chem. Soc. Rev.*, 14, 1984. and references therein.
- [5] Dag K. Dysthe, Bjrn Hafskjold, Jorg Breer, and Daniel Cejka. Interferometric technique for measuring interdiffusion at high pressures. *J. Phys. Chem.*, 99, 1995. and references therein.