

ABSTRACT:

This paper presents an application of ultrasonic tomography where the main objective is to identify the multiphase flow regime which is liquid, gas and solid at once. The system was designed non-invasively by using an offline method. The transmission mode with fan shaped beam back projection had been implemented for sensing purposes where 8x8 projections were produced. Besides, the linear back projection (LBP) algorithm was implemented in the software system for the image reconstruction part. Experiments show that the multiphase flow regime for liquid, gas and solid at once can be identified by using ultrasonic tomography. The results of experiments and possible future improvements were also discussed.