

Application of ultrasonic tomography in non-invasive imaging of liquid / gas flow

Introduction

Process Tomography involves the use of instruments which provides cross-sectional profile of the distribution of materials in a process vessel or pipeline [1]. Tomography system involves the acquisition of measurement signals from sensors located around the periphery of an object, such as process vessel or pipeline. The process of tomography must be consists with hardware system which is include sensor and measurement circuits, software for imaging reconstruction and a display unit to display the image produced. Real-time process monitoring stands an important role in many sectors of industry and scientific research [2], since there is a widespread need for the direct analysis of the internal characteristics of process plants in order to improve the design and operation of equipment. Object evaluated using tomography sensor will be obtained from installed sensors then measurements will be processed by image reconstruction algorithm to produce cross sectional image and displayed on a computer or a display unit.