

Real time mass flow rate measurement using multiple fan beam optical tomography

This paper presents the implementing multiple fan beam projection technique using optical fibre sensors for a tomography system. From the dynamic experiment of solid/gas flow using plastic beads in a gravity flow rig, the designed optical fibre sensors are reliable in measuring the mass flow rate below 40% of flow. Another important matter that has been discussed is the image processing rate or IPR. Generally, the applied image reconstruction algorithms, the construction of the sensor and also the designed software are considered to be reliable and suitable to perform real-time image reconstruction and mass flow rate measurements.