

Measuring of the Volume Ratio of Two Immiscible Liquids Using Electrical Impedance Tomography

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Abstract : Authors of this paper discuss the measuring of volume ratio of two immiscible liquids in the homogenous mixture using the industrial Electrical Impedance Tomography (EIT) system ITS p2+. In the first part of the paper, the principle of EIT and the basic theory of conductivity of mixture of two components are stated. In the next part, the experiment with water and olive oil mixed with Rushton turbine is described, and the measured results are used to verify the theory. In the conclusion, the results are discussed in detail, and the accuracy of the measuring method and its advantages are also mentioned.

Keywords : conductivity, electrical impedance tomography, homogenous mixture, mixing process

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