

Electrical resistance tomography: A review of the application of conducting vessel walls

Abstract

Despite decades of research, the study on tomography continues to be a subject of great scientific interest. Amongst all the kinds of tomography available, electrical resistance tomography (ERT) has been chosen as the field of study because of its advantages of being low cost, suitable for various kinds and sizes of pipes and vessels, having no radiation hazard, and being non-intrusive. In the development of ERT systems for conducting vessel walls, prior knowledge of the fundamental process of the ERT system whilst improving the design and operation of the process equipment is essential. In this paper, a review of the application of ERT for the conducting vessel wall is presented, providing information about its evolution over the years. The limitations and advantages of different strategies of ERT are also presented besides an overview of the system. Electrode fabrication on the conducting vessel wall is addressed.

Keywords; Electrical resistance tomography, Conducting vessel, Conducting boundary strategy, Grounding effect, Electrode fabrication