

## Capacitance tomography techniques for imaging a mixture of water and oil

### Abstract

Electrical Capacitance Tomography (ECT) is a technique for obtaining information about the distribution of the contents of closed pipes or vessels by measuring variations in the dielectric properties of the material inside the vessel [5]. The ECT system is a “soft field” sensing technique related to changes in permittivity distribution that causes a distortion of the overall sensing area. Generally, total measurements for an  $n$  electrodes ECT system, is  $\frac{1}{2} (n \times (n-1))$  measurements [8].