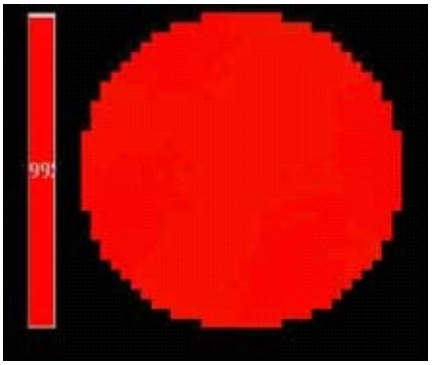
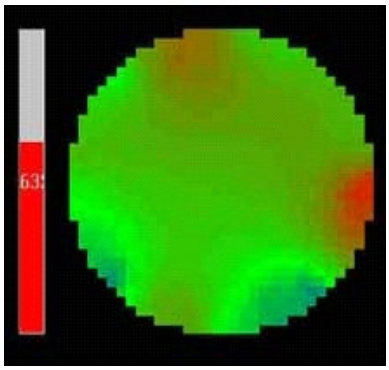
PTL300 - Imaging Inside A Fluidised Bed

The following screen shots show a sequence of ECT images obtained using a fluidised bed consisting of a vertical pipe of diameter 15 cm containing an epoxy powder. Air was blown vertically from the bottom of the bed, through a filter and the epoxy powder was fluidised by the air flow. An 8 element capacitance sensor with 2.5 cm long sensor electrodes was used to obtain the images.

The first image (A) shows the powder prior to fluidisation with no air flow. The predominantly red image represents the epoxy powder in its unfluidised state.

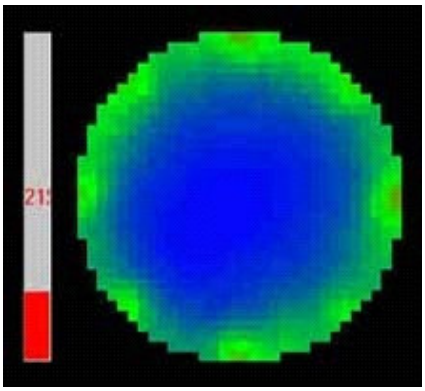


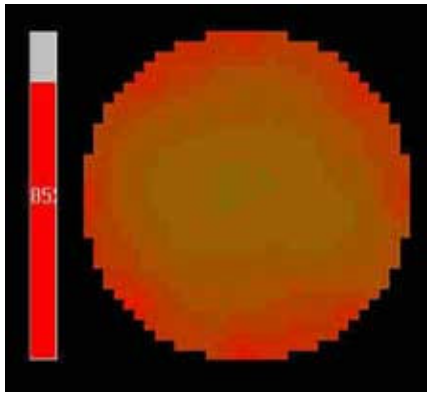


(A) (B)

The second image (B), which is predominantly green, shows the powder when it has been fluidised to approximately twice its original volume and represents the desired state.

The third figure (C), which is green with a blue central core, shows the situation when the air flow is increased further, causing an air hole to form in the centre of the image and this is represented by the blue zone. This is an undesirable situation which must normally be avoided.





(C) (D)

The final figure (D) shows the epoxy powder at the end of the fluidisation process. Note that the powder has not returned to its original state.

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