Dynamic analysis of charge transport in fluidized bed electrodes: Impedance techniques for electroactive beds

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Impedance techniques are used to investigate the average dynamic behaviour of a fluidized bed of gold-coated beads in potassium ferri-ferrocyanide/NaOH solution. A transmission line is used as a model. The main features of the fluidized bed are correctly interpreted, especially the capacitive high frequency impedance related to the intermittent contacts between the particles. The use of a non-uniform transmission line is attempted in order to study the influence of a distance dependent charge transfer mechanism in the bulk of the fluidized bed.