

485e Faradaic Reactions as the Source of Net Aggregation/Separation of Colloidal Particle Doublets in 100 Hz Alternating Electric Fields

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Over the past decade, observations of net interparticle motion above a planar electrode due to alternating electric fields have been explained by multiple different force mechanisms. At frequencies where electrode reactions occur, results suggest that those reactions are the root cause of both net lateral, including both aggregative or separating motions, and net vertical particle motion. This talk details the connection between the vertical forces induced by the application of an alternating field in the 30 Hz to 250 Hz frequency range, and new predictions of electrolyte dependent lateral motion that closely match published experiments.