
Dielectrophoresis - Electrorotation and Electromagnetic characterization of biological cells

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Résumé

This talk presents the most commonly used method to characterize individual biological cells on a dielectric point of view. It is a force based technique which lays on dielectrophoresis and/or electrorotation. First the principle of these phenomena are described and analyzed with an extension to magnetic forces at the micrometric scale level. Secondly we present an experimental setup which permits to acquire the dielectrophoretic spectrum which is a dielectric signature of a cell. The main dielectric parameters can be deduced by fitting the theoretical response of the cell issued from a dielectric model and the experimental data.

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