On the Interrelation of Impedance, Dielectrophoresis and Electrorotation Methods.


Abstract: Different methods can be applied to analyze the dielectric properties of suspended cells. While impedance (IMP) registers the electric response, dielectrophoresis (DP) and electrorotation (ER) register kinetic phenomena, the translation and rotation of single cells in an inhomogeneous and a rotating field, respectively. A simple RC-model for suspended human red cells demonstrates the interrelation of the three methods as well as the superior resolution of DP and ER for dielectric cell properties.