An investigation of dielectric properties of biological cells using RC-model.

**Abstract:** This paper proposes a method for estimating cell dielectric properties of a spherical triple shell and ellipsoidal shell models from the Laplace and RC approaches. With a combination of various theoretical parameters such as cell dielectrophoretic velocity, angular velocity of electro-rotation (ER) and two critical frequencies of dielectrophoresis (DEP), these approaches will improve the predictability of the dielectric properties. The calibration of the model parameters to these experimental data results in estimations of the cell is electrical properties depending on the geometric structure of the assumed model.