

## **New aspects for theory and application of dielectrophoresis and electrorotation of biological cells.**

Gimsa, J., Glaser, R., 1992. In 11th School on Biophysics of Membrane Transport. 156–174, Agricultural University of Wrocław, Poland.

**Abstract:** *This paper deals with the existing theory and current aspects of dielectrophoresis (DP) and electrorotation (ER). It presents a phenomenological interpretation of both phenomena. A brief description of the technical realization is followed by a discussion of problems arising from squaretopped field application. An overview of measurements on biological objects follows e.g. on chloroplasts, nucleated cells, virus-cell interaction, fertilization of oocytes and on the osmotic behavior of lymphocytes. The superiority of rotating- overline or-field-induced cell poration is considered. It is shown that more information on membrane and transport-protein properties can be expected from the interpretation of membrane conductivity and capacitance using a protein related ion-transport model.*

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