

DIELECTROPHORETIC TECHNIQUES FOR CONTINUOUS PARTICLE SEPARATION AND CELL CHARACTERIZATION FOR BIOFABRICATION OF CELLULOSE

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Dielectrophoresis (DEP) is an established technique to separate cells through exploiting the interaction of targeted cells with a non-uniform electric field. The strength and direction of the DEP force on a targeted cell is dependent on the frequency of the applied electric field as well as the dielectric properties of the cell and suspending media. The aim of this work is to show how Streaming DEP and Light induced DEP (Li-DEP) techniques can be used in applications such as batch sorting, cell isolation, and cell manipulation. The bacterium *K. xylinus* is studied as it facilitates nanocellulose synthesis by creating cellulose nanofibers (<100nm) allowing for spatial manipulation.

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