

## Dielectrophoretic Characterization of Tin Oxide Nanowires for Biotechnology Application

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**Abstract :** This study investigates nanowires using Dielectrophoresis (DEP) in non-aqueous suspension of Tin (IV) Oxide (SnO<sub>2</sub>) nanoparticles dispersed in N,N-dimethylformamide (DMF). The self assembly of nanowires in DEP impedance spectroscopy can be determined. In this work, dielectrophoretic method was used to measure non-organic molecules for estimating the permittivity and conductivity characteristic of the nanowires. As in aqueous such as salt solution has been dominating the transport of SnO<sub>2</sub>, which are the wire growth threshold, depend on applied voltage. While DEP assembly of nanowires depend on applied frequency, the applications of dielectrophoretic collection are measured using impedance spectroscopy.

**Keywords :** dielectrophoresis, impedance spectroscopy, nanowires, N,N-dimethylformamide, SnO<sub>2</sub>

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