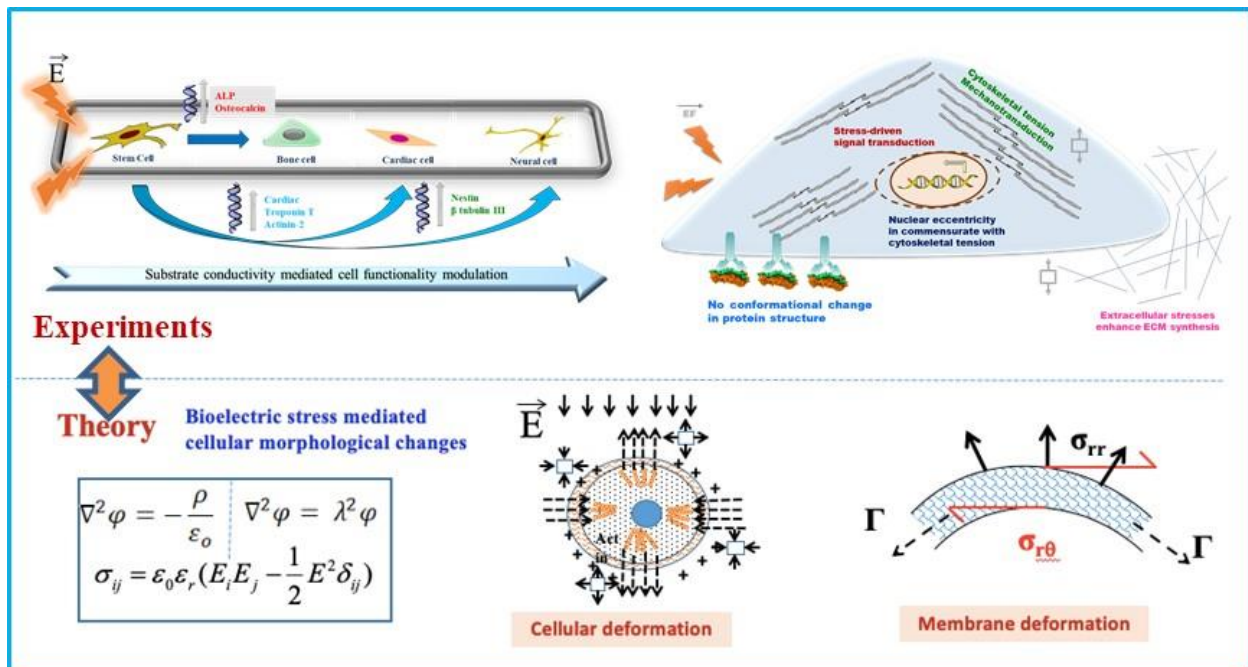


K Ravikumar, V. Kumaran, Bikramjit Basu, [Biophysical implications of Maxwell stress in electric field stimulated cellular microenvironment on biomaterial substrates](#); **Biomaterials** 209 (2019) 54-66.

Graphical Summary



Significance/ Impact:

This study established a theoretical foundation to rationalize experimental results on the critical role of electric field stimulation towards cell functionality modulation and proposed that bioelectric stress can significantly influence cell morphological changes. The analytical solutions to the Laplace equation and Poisson equation for the system were adopted to quantitatively capture the potential distribution, and Maxwell stresses in the cellular microenvironment. The outcome of this theoretical study will be the basis to design next-generation biomedical devices for regenerative engineering and cancer treatments.