A mathematical model of the transport material through a membrane of finite thickness via the process of diffusion has been developed. We may consider a membrane in between a donor and a receptor compartment, the cause of an externally applied electric field and concurrent first-order chemical reaction of the diffusion species with sites in the membrane on the diffusion
state is examined via the formulation of a time dependant differential equation and its subsequent solution by variational iteration method (VIM). A simple closed form of analytical expression for the concentration profile is derived and compared with the previous results and found to be in good agreement.

Reference


Index Terms

Computer Science
Applied Mathematics

Key words

Diffusion membranes Diffusion équations Active diffusion

Iontophoresis