عنوان مقاله:

Transcutaneous Electrical Stimulation with high frequency Signals: volume conductor and circuit models

محل انتشار:

کنفرانس بین المللی پژوهش در علوم و تکنولوژی (سال: 1394)

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خلاصه مقاله:

Transcutaneous electrical stimulation (TES) can be used to artificially activate nerve and muscle fibers by applying electrical current pulses between electrodes placed on the skin surface. In this study we implemented a lumped parameter electrical circuit and a distributed parameter volume conductor model to quantify the distribution of potentials in the tissue, including frequency-dependent dielectric properties, during transcutaneous electrical stimulation with a very high frequency sinusoidal carrier and rectangular envelope pulse. The results suggest that incorporating high frequency components in voltage-controlled transcutaneous stimulation may make it possible to .reach deeper structures in the tissue, such as nerves

کلمات کلیدی:

Transcutaneous electrical stimulation, high frequency, volume conductor model, lumped parameter electrical circuit