Modeling of tumor's tissue heating by nanoparticles

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Abstract :

The knowledge of temperature profiles in space and time throughout tumored tissues is a crucial step in designing efficient hyper thermal therapies for cancer. The present work is a contribution in modeling these profiles based on distributions of nanospheres and pointlike particles. Heat diffusion equations are solved under different conditions to rationalize the effects of boundary conditions and size of heating particles. The case of pointlike heating sources is found to be much simpler and more convenient to trace back the effects of metabolism and blood perfusion.

Keywords :

haemorheology, heating, hyperthermia, microwave heating, nanobiotechnology, nanoparticles,physiological models, radiation therapy, tumours.

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