

Modelling heat transfer in biological systems and biomedical applications

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Key Words: *Bio-heat Transfer, Thermal Therapy, Thermo-regulation*

PROPOSAL

Temperature is a key factor in many biological phenomena, since it is strongly associated to cells and tissue integrity. In the last few years, therapies manipulating the body temperature have become valid alternative (or complement) to the existing traditional treatments for different kind of diseases, including cancer, cardiac arrhythmias, cryopreservation and injury healing [1]. Other more recent examples include nanoparticle based technologies, laser angioplasty and thermal drug delivery. The complexity of these systems offers several challenges in terms of mathematical modelling and therefore more accurate and efficient numerical methods are needed [2]. A better understanding of the of the underlying biological energy-related mechanisms is also necessary for a better prediction of the system's thermoregulatory response under different conditions.

The aim of this mini-symposium is to regroup the most recent original research contributions on methods and applications concerning the Bio-heat transfer field, in order to track the route for innovative clinical treatments.

REFERENCES

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