

## **Computational modeling and simulation of thermal therapies for treatment of cancer, cardiac arrhythmias and chronic pain**

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**Abstract:** Computational modeling and simulation of thermal therapies serve as a powerful tool for better understanding, optimizing, and improving the performance of existing clinical systems and protocols. Computational modeling framework provides a quick, convenient and low-cost alternative for quantifying the treatment outcomes of thermal therapies to minimize the associated risks. This talk will discuss current state-of-the-art developments in the field of thermal therapies for the treatment of cancer, cardiovascular diseases, and chronic pain. Future research directions to enhance the prediction accuracy of the thermal therapy models utilizing data-driven, multiscale and multiphysics approaches will be also provided for the successful translation and integration of computational models into the hospital workflow.