

Abstract Submitted
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Mapping Surface Temperature on Biological Tissues by Infrared Thermography SURYA GNYAWALI, Oklahoma State University, YICHAO CHEN, University of Central Oklahoma, KENNETH BARTELS, JAMES WICKSTED, Oklahoma State University, WEI CHEN, University of Central Oklahoma — In this paper, non-contact and noninvasive infrared thermography in the measurement of skin temperature on a mice model during dye-enhanced laser-tumor treatment coupled with the immunological response is explored. Mice with mammary tumors are injected with light absorption enhancing dye (indocyanine green, ICG) and immunoadjuvant (glycated chitosan, GC) prior to laser light (805 nm) irradiation through optical fiber. Using an infrared temperature probe, images are acquired and analyzed to determine surface temperature measurements. Simulations of the surface temperature measurements are conducted using a Monte Carlo finite difference method. The simulation results are in good agreement with the thermography measurements.

James Wicksted
Oklahoma State University

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