

Fiber Bragg grating sensors for spatially resolved measurements in ex-vivo pancreatic laser ablation

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Abstract

Laser ablation (LA) is an emerging technology for mini-invasive treatment of tumors, and operates by damaging cancer cells by means of focused light-induced selective heating. In-situ temperature monitoring, with micro-sensors, may be particularly beneficial for both estimating in real-time the LA efficacy, and build prediction and controls for LA procedures. In this paper, we present our latest results on spatially resolved temperature monitoring, based on fiber Bragg grating (FBG). We used in-line FBG arrays based on 6 and 35 FBGs to achieve spatially resolved thermal sensing in LA applied to porcine pancreas. The main experimental results and their implications are hereby discussed.

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