

Improving the Optoacoustic Signal by Monitoring the Changes of Coupling Medium

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Abstract : In this paper, we discussed the coupling medium in the optoacoustic imaging. The coupling medium is placed between the scanned object and the ultrasound transducers. Water with varying temperature was used as the coupling medium. The water temperature is gradually varied between 25 to 40 degrees. This heating process is taken with care in order to avoid the bubble formation. Rise in the photoacoustic signal is noted through an unfocused transducer with frequency of 2.25 MHz as the temperature increases. The temperature rise is monitored using a NTC thermistor and the values in degrees are calculated using an embedded evaluation kit. Also the temperature is transmitted to PC through a serial communication. All these processes are synchronized using a trigger signal from the laser source.

Keywords : embedded, optoacoustic, ultrasound , unfocused transducer

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