

## INTISARI

### **Karakterisasi Sistem Citra Tomografi Fotoakustik Berbasis Cahaya 450 nm Dan Aplikasinya Untuk Deteksi Daging Ikan Berformalin**

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Telah dilakukan penelitian tentang pendeteksian daging ikan berformalin memanfaatkan alat pencitraan fotoakustik laser berbasis cahaya tampak 450 nm. Tujuan penelitian ini yakni mengkarakterisasi sistem citra fotoakustik guna mendeteksi daging ikan berformalin, menentukan hubungan intensitas bunyi rata-rata yang didapatkan, serta perbedaan citra tomografi fotoakustik terhadap nilai konsentrasi dan durasi perendaman pada larutan formalin. Variasi konsentrasi larutan formalin yang digunakan yakni 10%, 30%, 50%, 70%, dan 90% serta variasi durasi perendaman selama 24 jam, 48 jam, 72 jam, 96 Jam, dan 120 Jam. Hasil penelitian ini menunjukkan bahwa alat pencitraan fotoakustik berbasis laser dioda 450 dapat membedakan citra fotoakustik tomografi dari sampel yang diuji. Bertambahnya nilai konsentrasi dan lama perendaman dari larutan formalin mengakibatkan adanya peningkatan secara linear Taraf Intensitas akustik.

Kata Kunci : pencitraan fotoakustik, laser dioda, formalin

## **ABSTRACT**

### **Characterization of Photoacoustic Tomography Based On 450 nm Visible Light And Its Application For Detection of Formalin Fish Meat**

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Research has been carried out on detecting formalin fish meat using a laser photoacoustic imaging tool based on 450 nm visible light. This study aimed to characterize the photoacoustic image system to detect fish meat with formalin and to determine the relationship between the average sound intensity obtained and the differences in photoacoustic tomography images to the concentration and duration of immersion in formalin solution. Variations in the concentration of the formalin solution used were 10%, 30%, 50%, 70%, and 90%, as well as variations in the duration of immersion for 24 hours, 48 hours, 72 hours, 96 hours, and 120 hours. The results of this study indicate that a photoacoustic imaging device based on a 450 diode laser can distinguish tomographic photoacoustic images from the tested samples. The increase in the concentration value and the immersion time of the formalin solution resulted in a linear increase in the acoustic intensity level.

**Keywords:** photoacoustic imaging, diode laser, formalin