

### 3D imaging of fish samples rain bow trout samples by using Light Sheet Microscopy

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Light-Sheet Microscopy as an efficient novel method for non-invasive 3D microscopy of biological samples has been under extensive studies by researches in the past few years. In this paper along with introducing its advantages and applications, we intend to depict how to set up a static Light Sheet Microscope. This system works in fluorescent mode, and we use it for 3D imaging of heads and tails of rainbow trout. By utilizing this arrangement we have succeeded to image large samples, up to 3mm, with 1.5  $\mu\text{m}$  and 2.9  $\mu\text{m}$  lateral and axial resolution, respectively. By observing through these 3D images, we could easily find out about the morphology of the tails and the heads of the fish, moreover we could resolve two bone structures from two different depths which was not achievable via conventional microscopy.

**Keywords:** Light Sheet Microscopy, 3D imaging, rainbow trout.