

JUDUL: LAMPU PEMIKAT IKAN BAWAH AIR BERBASIS
MIKROKONTROLER ESP32 YANG DIKENDALIKAN MELALUI
BLUETOOTH HP

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ABSTRAK

Tugas Akhir ini mendesain lampu pemikat ikan dalam air *all in one* yang dapat dikendalikan menggunakan *bluetooth* HP untuk mempermudah nelayan mengoperasikan lampu pemikat ikan pada bagan nelayan. Alat ini diberikan pengaman suhu dan pengaman arus, agar mencegah kerusakan akibat arus dan suhu berlebih saat pengoperasian alat. Alat ini dibuat menggunakan 2 buah baterai VRLA 12 V 12 Ah, ESP32, sensor suhu DHT22, pengaman suhu bimetal, dan Transistor IC 3055 yang dikendalikan BC547. Tugas Akhir ini terdiri dari susunan lampu desain mikrokontroler desain pengaman, desain *casing*, dan desain program. Pengujian mencakup kemampuan keterangan lampu, daya tahan baterai, sirip pendingin, pengaman suhu, *casing*, dan pengujian komunikasi *bluetooth*. Hasil pengujian menunjukkan alat dapat berkomunikasi melalui *bluetooth* saat alat berada di permukaan air, alat menghasilkan keterangan sebesar 630 lux pada jarak 1 meter, dan alat beroperasi dengan menghabiskan 60 *Watt Hour* selama 6 jam.

Kata kunci: Lampu pemikat ikan, baterai VRLA, *Logic Control*.

TITLE: UNDERWATER FISH LIGHTING LIGHT BASED ON ESP32
MICROCONTROLLER CONTROLLED VIA BLUETOOTH HP

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ABSTRACT

This Final Project designs an all-in-one underwater fish-attracting light that can be controlled using Bluetooth on a smartphone to facilitate fishermen in operating the fish-attracting light on their fishing platforms. The device is equipped with temperature and current protection to prevent damage from excessive current and temperature during operation. The device is made using two 12V 10A VRLA batteries, an ESP32 microcontroller, a DHT22 temperature sensor, a bimetal temperature protector, and a 3055 IC transistor controlled by a BC547 transistor. This Final Project includes the design of the light, microcontroller protection, casing, and programming. The testing covers light brightness capability, battery endurance, heat distribution, temperature protection, casing, and Bluetooth communication. The test results show that the tool can communicate via Bluetooth when the tool is on the surface of the water, the tool produces information of 630 lux at a distance of 1 meter, and the tool operates by consuming 60 Watt Hours for 6 hours.

Keywords: light fish lure, batery VRLA, Logic Control.