

## ABSTRACT

*In In the world of fish farming, dissolved oxygen is one of the most important things in the process of determining the quality and quantity of fish hatcheries. Therefore, the level of dissolved oxygen will greatly determine the results of the fish cultivation. Low oxygen levels can cause the process of growth and reproduction of fish in the pond not to go well, resulting in the death of the fish. Therefore, to facilitate fish cultivation, a system was formed that can control dissolved oxygen so that there is no fish death in the cultivation process.*

*The system that will be formed is expected to reduce fish mortality caused by a lack of dissolved oxygen levels in the pond. The design of this system will use the SKU-SEN0237 sensor as a reading of the dissolved oxygen value and the percentage of total oxygen levels will be controlled using fuzzy logic which is implemented on the Arduino Uno. If the dissolved oxygen level is below the specified setting point value, the air pump will be turned on to produce dissolved oxygen in the pond.*

*The system has an output in the form of actuator operation which is affected by the dissolved oxygen level input on the prototype. The lower the dissolved oxygen that is read by the sensor, the actuator will operate very quickly and vice versa. Fuzzy logic can provide the required PWM on the actuator according to the dissolved oxygen sensor readings. The system can reach the set point in approximately 35 seconds when dissolved oxygen levels are low. The system has good feedback after being disturbed in the form of adding an air pump to increase dissolved oxygen above the set point.*

**Keywords :** *Dissolved oxygen, Culture, Fuzzy logic, Systems, Actuator.*