

**“MAGIC BIOSORBEN SIMPLE”**  
**BASED ON CHITOSAN RISE HUSK SILICA**  
**MEMBRANE AND *Omphalina sp*, MUSHROOM AS AN**  
**AGENT TO DECOLORIZE AND DEODORIZE**  
**CILEUNGSI RIVER WATER BOGOR**



Arranged by :

Surya Hadi Kusumo	NIS : 171810244
Ahmad Raihan Maulana	NIS : 171810249

Guided by :

Titik Handayani, S. Si  
Gempur Irawan Supena Putra, S. Si

**YAYASAN PENGEMBANGAN KETERAMPILANDAN**  
**MUTU KEHIDUPAN NUSANTARA**  
**SMK AK NUSA BANGSA**  
**2021**

**“MAGIC BIOSORBEN SIMPLE”  
BASED ON CHITOSAN RICE HUSK SILICA  
MEMBRANE AND *Omphalina sp*, MUSHROOM AS AN  
AGENT TO DECOLORIZE AND DEODORIZE  
CILEUNGSI RIVER WATER BOGOR**

**Surya Hadi Kusumo<sup>1</sup>, Ahmad Raihan Maulana<sup>2</sup>**

**Supervisor By : Titik Handayani, S. Si; Gempur Irawan Supena Putra, S. Si**

**ABSTRAK**

*The Cileungsi river pollution has been occurring for a long time and has not improved, it has even gotten worse in 2018 until now. This river pollution occurs as a result of the disposal of industrial waste that has not been treated beforehand and is immediately thrown away. As a result, the water turns dark black and creates an unpleasant odor, which pollutes the environment and makes residents uncomfortable. In general, to remove color and odor, the waste is treated first with existing modern methods. However, it requires high costs, operational problems, and requires special tools so that many industries object and eventually act illegally. Therefore, it is necessary to have an alternative method to decolorize and deodorize waste, one of which is to use the mushroom *Omphalina sp.*, Rice husks, and other natural rocks which will be applied as a building block for a waste treatment system. Mushroom *Omphalina sp.* able to produce a laccase enzyme and is known to be used in decolorizing waste, this fungus is also able to deodorize waste through an enzymatic activity that breaks covalent bonds in odor-causing substances. Rice husk can also help in decolorizing and deodorizing because it contains silica crystals that can react with the dye so that the dye will bind to the silica of the rice husk. Natural rocks such as zeolite, quartz sand, and activated charcoal also have the ability to decolorize and deodorize waste. Based on the research results, it was found that the concentration of color in the sample water decreased from the concentration before filtration of 25 ppm to 6.67 ppm after filtration. Likewise, the aroma level of the sample decreased based on COD and BOD levels, there was a decrease in COD levels from 572.75 mg / L to 65.25 mg / L while the decrease in BOD levels from 1.5865 mg / L to 0.2641 mg / L. Based on these results, it can be concluded that this Simple Magic Bioabsorban can significantly decolorize and deodorize wastewater and can be a solution for industries that have difficulty treating waste so as not to pollute the environment.*

**Key Word :** *Cileungsi river, dekolorisasi, deodorisasi, rice husk, *Omphalina sp* mushroom.*