

# 2022 年臺灣國際科學展覽會 優勝作品專輯

作品編號 180017

參展科別 地球與環境科學

作品名稱 **HOPE WASTE (House Processor Waste)  
with IoT (Internet of Things) as a Laundry  
Liquid Waste Treatment Household  
Environment**

得獎獎項

國 家 **Indonesia**

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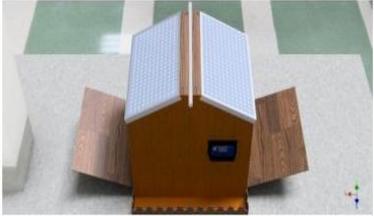
關鍵詞 **Laundry Liquid Waste, Biosorbent, IoT**

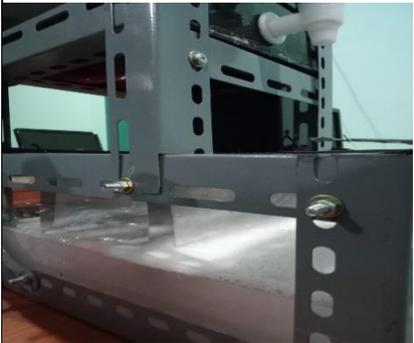
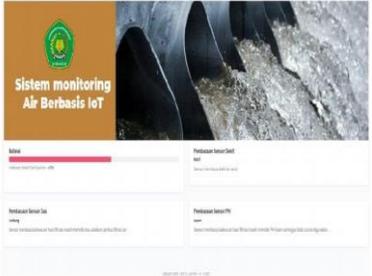
## 作者照片



# Project Report

Date	Activities	Picture	Result	Recommendation
<p><u>03/10/2021</u></p>	<p>Inspiration</p>		<p>Today we began to discuss to find ideas by reviewing some problems in the surrounding environment, namely polluted water caused by liquid waste, namely Laundry Liquid Waste which is currently widely used by the community, especially in urban areas. Wasted laundry liquid waste water without treatment processing causes pollution to be dilung around especially animals in these waters and dangers to health.</p>	<p>It is recommended to read more related journals</p>
<p><u>05/10/2021</u></p>	<p>Synthesis</p>		<p>Discussing the level of urgency is the content of laundry waste containing a number of surfactants, carboxy methyl cellulose, calcium, phospat, bleach clothing that if disposed of directly can harm the aquatic ecosystem. Therefore, research allows it to be done, relevant, and functional.</p>	<p>Create environmentally friendly tools that work to reduce pollution</p>

<b><u>10/10/2021</u></b>	Synthesis		By looking at the problem and doing literacy with several media, we utilize the existing local potential of barringtonia asiatica and activated charcoal as natural adsorbents to bind the existing content in laundry liquid waste by combining electrocoagulation methods.	Agree and say "good"
<b><u>12/10/2021</u></b>	Synthesis		Search for laundry wastewater samples then test barringtonia asiatica and activated charcoal with laundry wastewater	Testers perform trials in the laboratory before being combined with tools.
<b><u>14/10/2021</u></b>	Plan tool sensors and skeletal materials		Ph sensor, electrocoagulation and use triplex as a tool construction material	Add DHT22 sensors to the tool and use Solar Charge as a tool energy source
<b><u>16/10/2021</u></b>	Plan a tool design		Start drawing in 3D.	Agree and say "good job"

<b><u>18/10/2021</u></b>	Start working on part 1 tools		tool frame begins to form 20%	planning to upgrade the design to version 2
<b><u>20/10/2021</u></b>	work on part II tools		using elbow iron and acrylic as the main material	Perfect the tool by installing other components
<b><u>22/10/2021</u></b>	Combining natural adsorbent materials with electrocoagulation		Insert all components into the tool framework	Agree and say "good"
<b><u>26/10/2021</u></b>	Manufacture of transmitters		in the form of Website Pages to control and monitor the Filtration Too	Guidance in web creation

<u>28/10/2021</u>	Tool Nomination		HOPE WASTE (House Processor Waste) with IoT (Internet of Things) as a Laundry Liquid Waste Treatment Household Environment	Agree and say "good"
<u>29/10/2021</u>	Test tool 1		The tool works well to produce water that is visible and odorless.	recommend testing once again in order to get valid results
<u>30/10/2021</u>	Test tool 2		It has really obtained the end result of clear and odorless water.	It is recommended to test the results of filtration in the laboratory

<p><b><u>01/11/2021</u></b></p>	<p>Testing laundry waste filtration results from Hope waste</p>	<p>Parameter Uji Penampakan (Organoleptik)</p> <table border="1"> <thead> <tr> <th>Bahan</th> <th>Nilai</th> </tr> </thead> <tbody> <tr> <td>Bau</td> <td>Tidak Berbau</td> </tr> <tr> <td>Rasa</td> <td>Tidak Berasa</td> </tr> <tr> <td>Warna</td> <td>4 (Unit PL.Co)</td> </tr> <tr> <td>Kekeruhan</td> <td>3 Ntu</td> </tr> </tbody> </table> <p>Parameter Uji Fisika, Kimia Organik, Biologi</p> <table border="1"> <thead> <tr> <th>No</th> <th>Kriteria</th> <th>Satuan</th> <th>Nilai/Kadar</th> </tr> </thead> <tbody> <tr> <td colspan="4">Fisika</td> </tr> <tr> <td>1</td> <td>TDS</td> <td>Mg/l</td> <td>850</td> </tr> <tr> <td>2</td> <td>pH</td> <td>ppm</td> <td>6,7</td> </tr> <tr> <td>3</td> <td>Detergen (Saponin)</td> <td>ppm</td> <td>0,3</td> </tr> <tr> <td>4</td> <td>Bakteri <i>E. coli</i>/l</td> <td>APM/100 ml</td> <td>&lt; 2</td> </tr> </tbody> </table>	Bahan	Nilai	Bau	Tidak Berbau	Rasa	Tidak Berasa	Warna	4 (Unit PL.Co)	Kekeruhan	3 Ntu	No	Kriteria	Satuan	Nilai/Kadar	Fisika				1	TDS	Mg/l	850	2	pH	ppm	6,7	3	Detergen (Saponin)	ppm	0,3	4	Bakteri <i>E. coli</i> /l	APM/100 ml	< 2	<p>The tool works well and the results are good.</p>	<p>It is recommended to immediately work on the abstract</p>
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<p><b><u>05/11/2021</u></b></p>	<p>Report writing</p>		<p>Abstract has been completed</p>	<p>-</p>																																		
<p><b><u>10/11/2021</u></b></p>	<p>Report consultation</p>		<p>Revision</p>	<p>Revision Need details on the results of water filtration</p>																																		

<p><b><u>12/11/2021</u></b></p>	<p>Revision abstract</p>		<p>No more revisions</p>	<p>The supervisor said, "Good Luck."</p>
<p><b><u>18/11/2021</u></b></p>	<p>Complete a requirements file</p>		<p>Complete requirements file</p>	<p>Immediately send all requirements to the organizer</p>

## 【評語】 180017

The laundry wastewater in urban areas was investigated with house processor waste and internet of things. Literature review, materials and methods, results and discussion should well address in the proposal.