



De La Salle University – Dasmariñas

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**De La Salle University – Dasmariñas**

**Dasmariñas, Cavite**

**College of Technology**

**GASIFICATION OF RICE HULLS AND ITS USE AS FUEL FOR  
THE GASOLINE ENGINE**

**An Undergraduate Thesis presented to  
the Faculty of the College of Technology**

**De La Salle University – Dasmariñas**

**Dasmariñas, Cavite**

**In Partial Fulfillment**

**Of the Requirements for the Degree**

**Bachelor of Science in Industrial Technology**

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### ABSTRACT

**Name of Institution:** De La Salle University - Dasmariñas  
**Address:** Dasmariñas, Cavite  
**Title:** "Gasification of Rice Hulls and its use as Fuel for the Gasoline Engine"  
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Mary Joyce A. Dula  
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**Objective of the Study:**

**A. General:**

To determine if the rice hulls can be used as an alternative sources of fuel for gasoline engine in the Philippines?

**B. Specific:**

1. To find out the alternative sources of fuel in the Philippines.
2. To determine the advantages of the rice hulls as a source of fuel in the Philippines.
3. To find out the disadvantages of rice hulls as a source of fuel in the Philippines.

**Scope and Coverage:**

The study focuses on the potential of rice hulls as an alternative source of fuel and the process how rice hulls can be into fuel for the gasoline engine. The advantages and disadvantages of using rice hulls as a source of fuel in the Philippines setting. Other issues and concerns directly or indirectly related to the topic are not part of the scope of the study.



**Statement of the Problem**

The price of petroleum products has shown a substantial increase due to this, the demand for alternative ways of fuel will produce cheap and clean energy by using reusable energy sources and other alternatives that can be used for fuel, to know the advantages of rice hulls as a source of fuel in the Philippines at the same time to reduce the pollution threat, associated with disposal.

**Hypothesis**

Rice Hulls can be used as an alternative source of fuel for the existing gasoline and diesel fuel.

Rice Hulls can be used as an alternative source of fuel in the country furthermore, it reduce the pollution threat associated with disposal and at the same time expand our energy base.

**Scope and Delimitation**

The study focuses on the potential of rice hulls as an alternative source of fuel and the process how rice hulls can be used into fuel for the gasoline engine. The advantages and disadvantages of using rice hulls as a source of fuel in the Philippine setting. Other issues and concerns directly or indirectly related to the topic are not part of the scope of the study.

**Conceptual Framework**



The first box represent the non-conventional source of fuel in the Philippines. The box at the left side shows an alternative fuel for the gasoline engine. The arrow signifies the relationship between the two variables that from the source Rice Hulls it can be used as an alternative for gasoline engine.



**Methodology:**

The study used the descriptive method of research. The researchers conducted interviews, surveys, exploring in the internet and other references that are involved in the study.

Through the help of Engr. Rolando Penalzoza, he refer us to his friend who works at Department of Energy Engr. Toliongco. He provide necessary data regarding on the process of gasoline engine, where in these data can help us to prove how the study become feasible.

This is done to attain various information that will serve as basis for processing, analyzing, and interpreting the data.

**Major Findings:**

The researcher found out that rice hulls is useful, cheaper, and effective in the performance of Chevrolet gasoline engine using producer gas from rice hulls as fuel and that coconut shells, coconut wood, coffee grounds, corncobs, and ipil-ipil wood can be transformed into fuel.

**Conclusions:**

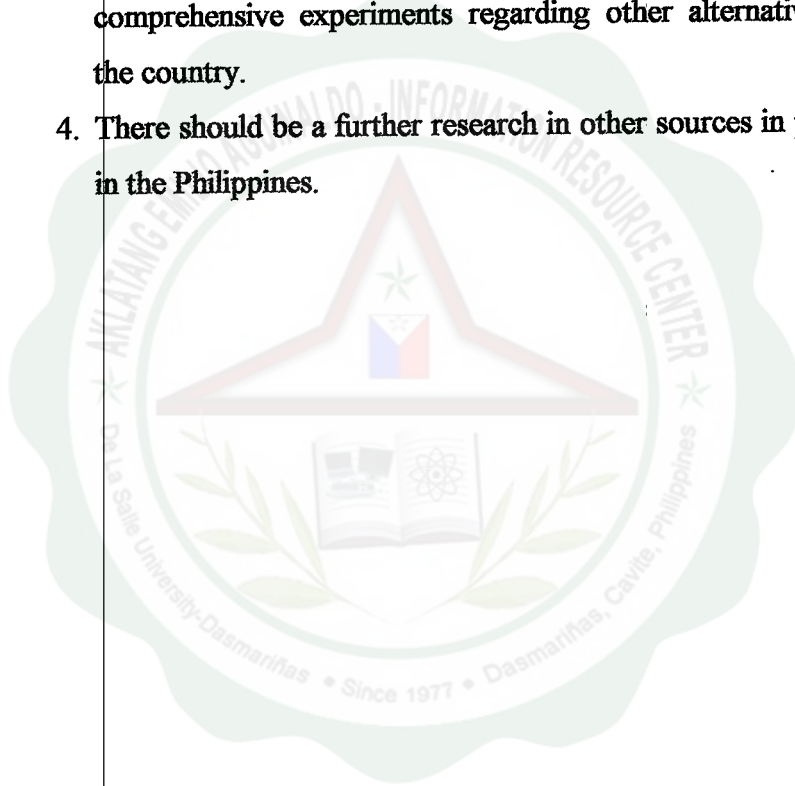
The following conclusions were drawn:

1. Rice hulls can be used as an alternative non-conventional source of fuel, based on the data presented on the performance of Chevrolet gasoline engine.
2. That there are more alternative sources of fuel such as; charcoal fines, bagasse, coconut shell, coconut wood, coffee grounds, corncobs, and ipil-ipil wood.
3. Therefore the demand of rice hulls for alternative sources of fuel can produce cheap and clean energy.
4. No disadvantages of using rice hulls fuel are known and that many countries determine rice hull as fuel potential.



**Recommendations:**

1. The government should adapt the gasification of fuel by using rice hulls. In this line, rice hulls should be as an alternative source of fuel in the country for the benefit of energy shortage.
2. The authorized person must be in the field of gasification process.
3. For Educational Institution, should be encouraged to pursue comprehensive experiments regarding other alternatives of fuel in the country.
4. There should be a further research in other sources in producing fuel in the Philippines.





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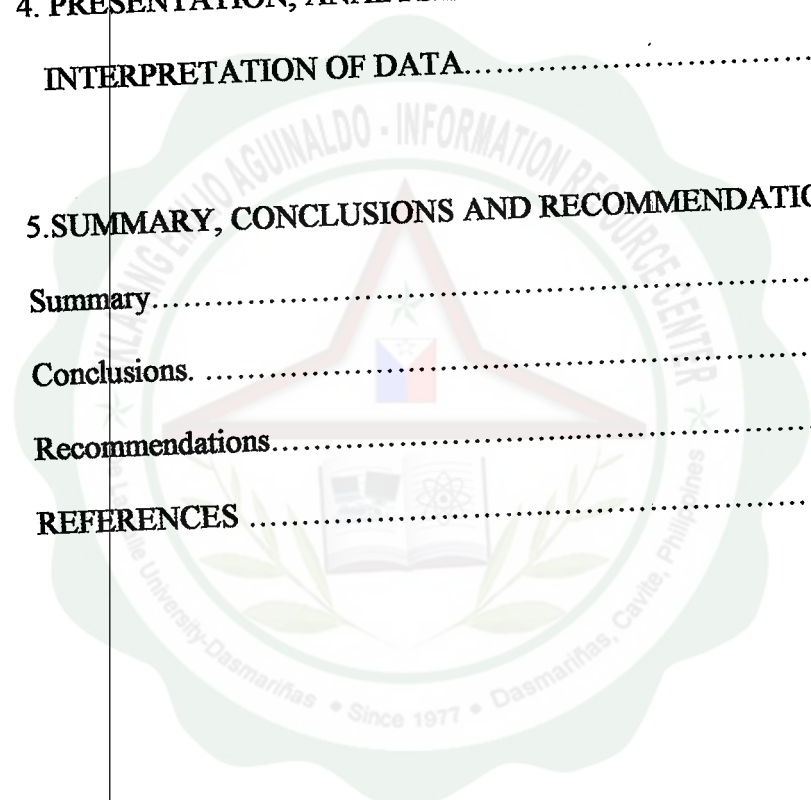
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