

**EVALUATION OF DIFFERENT POROUS CARBON FOR ELIMINATING
IMPURITIES IN BIOETHANOL FROM MOLASSES**

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TABLE OF CONTENTS

	PAGE
TITLE PAGE	i
ACCEPTANCE SHEET	ii
BIOGRAPHICAL SKETCH	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vi
LIST OF APPENDIX FIGURES	vii
ABSTRACT	viii
INTRODUCTION	1
Background of the Study	1
Statement of the Problem	2
Objectives of the Study	4
Significance of the Study	4
Scope and Limitation of the Study	5
Time and Place of the Study	5
REVIEW OF RELATED LITERATURE	6
Odor of Ethanol/Bioethanol	6
Carbon Dioxide Global Emission	7
Alternative to Conventional Fuel	8
Bioethanol	8
Different Production Process of Bioethanol	9
Molasses coming from Dark Brown Sugar	12
Production of Bioethanol through Molasses Fermentation	12
Biofilter	14
Type of Biofilter Support Media	15
Biofiltration of a Mixture of Volatile Organic Compounds on Granular	16
Activated Carbon	
Activated Carbon from Rubber Wood Sawdust by Carbon Dioxide	17
Activation	
Activated Carbon Preparation from Eucalyptus Wood Chips	18

Activated Carbon Coconut Shell Morphology	19
Characteristics of Activated Carbon Prepared from Pistachio-Nut Shell	20
Rice Husk Biochar (RHB)	21
Rice Husk Biochar (RHB) Morphology	21
Removal of Methyl Mercaptan by Nitrogen-rich Coconut Shell Activated Carbon	22
Pore Structure of Activated Carbon	24
Bamboo Based Activated Carbon	25
 METHODODOLOGY	 28
Conceptual Framework	29
Production of Rice Husk Biochar and Activated Carbon	30
Characterization of the Activated Carbon and Biochar	30
Fourier Transform Infrared Spectroscopy	30
Scanning Electron Morphology	30
UV-Vis Spectroscopy	31
Materials and Methods	31
Equilibrium Studies	31
Operation of the Adsorption Process	32
Sample Preparation for Laboratory Analysis	32
 RESULTS AND DISCUSSION	 33
Production of Rice Husk Biochar (RHB) and Activated Carbon	33
Mechanical Shaker	33
Characterization of Activated Carbon and Biochar	34
Fourier Transform Infrared Spectroscopy	39
UV-Vis Spectroscopy	40
 SUMMARY, CONCLUSION AND RECOMMENDATION	 42
Summary	42
Conclusion	43
Recommendations	44
 LITERATURE CITED	 45
 APPENDICES	 49

LIST OF FIGURES

FIGURE		PAGE
1	Hydrolysis of starch and cellulose	10
2	SEM images of rice husk biochar at 350 °C, 500 °C and 650 °C pyrolysis temperature	22
3	Composite structure of Bamboo fibers	25
4	Conceptual Framework	29
5	Scanning Electron Micrographs (SEM) of Rice Husk Biochar	35
6	Scanning Electron Micrographs (SEM) of Coconut Activated Carbon	36
7	Scanning Electron Micrographs (SEM) of Bamboo Activated Carbon	37
8	FTIR Spectra of the Different Porous Carbons	39
9	UV-Vis Spectra of Different Porous Carbons	40

LIST OF APPENDIX FIGURES

APPENDIX		PAGE
1	Carbonization of Rice Husk Biochar	50
2	Samples were prepared for SEM Analysis	51
3	Samples were shipped via courier to DLSU	52
4	The Porous Carbons were measured using Analytical Balance	52
5	9 samples were put on a Mechanical Shaker for 12 hours	53
6	Samples were filtered	54
7	The samples were analyzed using FTIR	54
8	The samples were analyzed using UV-Vis	55
9	Results of SEM of Rice Husk Biochar	56
10	Results of SEM of Activated Coconut Carbon	57
11	Results of SEM of Activated Bamboo Carbon	58
12	Results of FTIR Analysis	59
13	Results of UV-Vis Analysis	60
14	UV-Vis of Bioethanol	61
15	UV-Vis of Activated Coconut Carbon	61
16	UV-Vis of Activated Bamboo Carbon	62
17	UV-Vis of Rice Husk Biochar	63

ABSTRACT

PACAG, MARY JOY G., PADON, ALDREN D., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2023, EVALUATION OF DIFFERENT ACTIVATED CARBON IN ELIMINATING ODOR IN BIOETHANOL FROM MOLASSES.**

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The Pandemic has brought about many problems in the society. Ethanol, the main ingredient in the manufacture of hand sanitizer, had shortages in supply. An alternative source of this material is the bioethanol produced from the fermentation of molasses. The distilled product, however, has a foul odor and cannot be used as hand sanitizer, rubbing alcohol, or disinfectant. There must be another process to remove the foul odor caused by the by-products, such as aldehydes and ketones. This study focused on using porous carbon from coconut, rice husk, and bamboo as adsorbents. The foul odor was removed by adding porous carbon at different concentrations and shaking for 12 hours. UV-Vis spectrophotometric analysis of the filtered bioethanol shows that the bamboo charcoal significantly decreased the peak for aldehydes and ketones while the coconut and rice husk carbon did not. The Fourier transform infrared (FTIR) spectroscopic analysis and the scanning electron microscopy (SEM) confirmed the bamboo carbon's ability to adsorb the bioethanol impurities. In conclusion, bamboo carbon can be utilized to remove impurities in bioethanol produced from the fermentation of molasses.

Keywords: bioethanol, activated carbon, biochar, odor

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13	Results of UV-Vis Analysis	60
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15	UV-Vis of Activated Coconut Carbon	61
16	UV-Vis of Activated Bamboo Carbon	62
17	UV-Vis of Rice Husk Biochar	63

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