



**DESIGN OF A THERMOACOUSTIC DEVICE**

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**“I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. This thesis has not been accepted for any degree and not concurrently submitted in candidature of any degree”**

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## **ABSTRACT**

Thermoacoustic is a field that involves both of knowledge in acoustic and thermodynamics fields. The main objective of this research is to implement some design considerations in designing thermodynamic devices, which will be particularly focus on the study to determine the best gap of stack value and material of stack that shall be used as well as the most suitable gas that considered.

As previously mentioned, one of the focus is determine the most suitable type of gas that should be used. In order to determine the most suitable one, some factors and considerations involve such as the values of molar mass, heat capacity and conductivity as well as the cost and price of the respective gas. The safety factors of using certain type of gases are also crucial and can not be neglected.

The next thing to be considered is the type of material of the stack that most suitably to be used. Each kind of material, respectively, differs in their properties, which are the thermal conductivity, corrosion resistant as well as the ductility stage.

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