CHAPTER 1
INTRODUCTION

A. Research Background

There are many kinds of media found in our society as a tool to get and share knowledge, such as internet, television, newspaper, radio, training, seminar, books, and so on. Book is one of those media that has important role in spreading out the knowledge over the world. Reading book has large influence for people who do that activity. Through reading they can enrich their insight and knowledge to apply, therefore they can give beneficial contribution in society life.

However, it will be a problem if those books are written in different language in which the target readers do not understand. In this case, the role of translation as a link of two or more different language is certainly important. Translation is the process of transferring message from one language into another language that can solve the problem. Consequently, the target readers are able to understand the content of source language text book easily.

Physics as an important science in the world since long time ago has been popular science until today. All sorts of physics theories are written in the form of books either they are used as text books of formal education such as school and university or general reading to enrich insight or to support learning. Those books are then translated from one language into various languages in the world as the process of its disseminating over the world. As a
scientific discipline, physics has its own terms that they have particular meaning in the context of physical science, called physical term.

Translating physical term from English into Indonesian leads a translator to several problems. There are several alternative meanings available for a word/term of source language when it is translated into the target text. When the translator has limited understanding about the physics it will be problem for the translator in deciding the appropriate translation in target language. Therefore, the translator is required to at least understand about physics generally. Besides, many physical terms are adopted from the original language especially in which the theory of the science is found. Unfamiliar words may be found by target readers during reading the text. This is also a problem that the translator should solve, consequently the translation is not only accurate but also acceptable. Based on the reasons above, the researcher is interested to analyze the translation of physical terms into Indonesian found the book entitled *Science Activities Heatand Energy Volume 4*. There are many physical terms found in the book that may become problematic task for the translator in translating them. Some examples are presented as follows:

Example 1:

Datum number: 097/SAHE V 4/SKSPE V 4

ST: The air trapped in the foam also acts as insulation and reduces heat transfer.

TT: Udara yang terperangkap di dalam busanya juga bertindak sebagai penyekat (isolator) dan mengurangi perpindahan energi.
As presented in the example above, the translator translated the term *heat transfer* into *perpindahan energi* in the TT. The term is translated literally or using word-for-word translation. It means that the translator used literal translation & borrowing in translating the source term. However, the translator did a mistake in translating the term. The word *heat* in the ST is translated into *energi* as the equivalent word in the TT which should be translated into *panas*. The distortion of meaning is occurred in the translation because of mistranslation in the part of the term so the message of the source text is not fully transferred into target text well.

Example 2:

077/SAHE V 4/SKSP E V 4  

ST: It is given off by objects that are hot enough to glow such as the Sun or the *filaments* in light bulbs.  

TT: Cahaya dipancarkan oleh benda-benda yang cukup panas untuk berpendar, seperti Matahari atau *filamen* di dalam bohlam lampu.

In the example above the term *filament* is translated into *filamen* by the translator. It shows that the translator used borrowing technique by naturalizing to suit the target language spelling. The term *filamen* may be less acceptable because the term is unfamiliar for the target readers. Therefore, an explanation for the term is needed, by translating it into *filamen (kawat pijar)*. This additional information is aimed to help target readers who are still not familiar with the term.
The example above shows that in translating physical term a translator needs to analyze the context carefully since there are several possible meanings of only one word. The translator should chose the most appropriate one based on the given context. Besides, many terms are adopted from the original language that is sometimes not familiar with target readers. As a consequent, translator is suggested to provide additional information in the translated word.

Based on the reasons described in the research background the researcher is interested to conduct a research entitled “An Analysis of Translation Techniques of Physical Terms into Indonesian in the Science Book Entitled ‘Science Activities Heat and Energy Volume 4’ translated by PT. Pakar Raya. The researcher tries to analyze the translation techniques applied by the translator in translating physical terms found in that book and its influence to the quality of translation in terms of accuracy and acceptability.

B. Research Limitation

The problem of research is limited and focused on the analysis of translation techniques of physical terms found in a science book entitled Science Activities Heat and Energy Volume 4 and its effect to the quality of translation in terms of accuracy and acceptability.
C. Research Problems

Based on the research background, two problem statements are proposed as follows:

1. What types of translation techniques applied by the translator in translating physical terms found in a scientific book entitled *Science Activities Heat and Energy Volume 4* translated by PT Pakar Raya?
2. How do the techniques influence the translation quality in terms of accuracy and acceptability?

D. Research Objectives

1. To find out the types of translation techniques applied by the translator in translating physical terms found in a science book entitled *Science Activities Heat and Energy Volume 4* translated by PT Pakar Raya
2. To describe how the techniques influence the translation quality in terms of accuracy and acceptability

E. Research Benefits

There are especially four elements in which the research is purposed to, they are:

1. The English Department Students

   Through this research, the researcher hopes to be able to help the students of English Department in improving their knowledge and opening their insight especially about physical terms translation from
English into Indonesian by using this research as their reference in translation studies.

2. The Other Researcher

This research will be helpful for the other researchers who are interested in conducting research in the same studies as their additional information or reference especially research related to physical terms translation.

3. Lecturers

This research will be beneficial for the lecturers as additional input and reference in teaching translation studies particularly in discussion about terminology translation of physics and generally about scientific terms.

4. The Translator

The result of this research will give beneficial contribution to improve the translator’s ability, knowledge, and competence in translation job relating to physical terms or other scientific terminology.

E. Research Organizations

This research is arranged in the following way:

Chapter I : INTRODUCTION

It consists of Research Background, Research Limitation, Research Problems, Research
Objectives, Research Benefits, and Thesis Organization

Chapter II : LITERATURE REVIEW
It consists of Definition of Translation, Translation Procedure, Difficulties in Translation, Translation Techniques, Translation Quality, Translation Quality Assessment, Scientific Language and Technical Language, Scientific and Technical Translation, Definition of Science and Physics, Scientific Terms Related to Physics, Category of Terms, and Characteristics of Terms.

Chapter III : RESEARCH METHODOLOGY
It consists of Research Type and Design, Data and Source of Data, Sampling Technique, Method of Data Collection, Technique of Data Analysis, and Research Procedure.

Chapter IV : RESEARCH FINDING AND DISCUSSION
It consists of The Analysis of Translation Techniques, The Analysis of Translation Quality, and Discussion consists of Introduction and Research Finding.
Chapter V : CONCLUSION AND RECOMMENDATION

It consists of Conclusion and Recommendation of the Research.