

UNIVERSITI TEKNOLOGI MARA

**FOREARM POWER GENERATING
MACHINE**

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ABSTRACT

Nowadays, many people and organisations around the world are now interested in finding alternatives to fossil fuels. In general, replacing fossil fuels with Renewable Energy (RE) sources contributes to environmental and economic security. RE can be generated from a variety of sources, one of which is Human Kinetic Energy (HKE). This study proposes a method for generating electricity from HKE in gymnasiums (gyms). The primary goal of this research is to develop an efficient framework for generating electrical power from wasted HKE in gyms. Researchers consider this unused HKE in gyms to be wasted Energy that could be put to better use. As a result, this work investigates how the use of this wasted energy can meet various security requirements while also assisting in the achievement of two strategic goals. In general, the developed framework provides an understanding of the complex problem of effective utilization of gyms.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

A forearm power generator machine will be fabricated based on the responses of the movement and motion of forearm gym equipment. The target of this machine is to convert wasted manpower into another useful form which is electrical energy. The movement of the forearm user will create kinetic energy into electrical power. The system aims to provide resistance to forearms movement of gym user while generating power at the same time thus serving dual purposes. Aluminum and iron will propose as main materials which involved welding process. The adjustable spring-based mechanism allows for effective resistance settings for personal user preference to the machine as required.

1.2 Problem Statement

In the gym, there are many movements and such movement equipment such as arm tools, weights, squat racks, rowing machines, exercise bikes and so on. Due to this movement, many energy resources have been depleted and wasted [1]. Several studies have found that, by simply pulling and pushing a gym tool, it can generate electrical power as an unconventional method. The use of waste energy generation by gym equipment is very relevant for those who are consistent about their gym schedule and provide benefits to the country. This unconventional energy using pull/push up or pull/push down is converting mechanical energy into electrical energy.

1.3 Objectives

The main objectives of this project are:

- a) To convert wasted manpower into electrical energy.
- b) To promotes ecological lifestyle [2].