



UNIVERSITI  
TEKNOLOGI  
MARA

**BACHELOR OF NURSING (Hons)**  
**CONTINUOUS ASSESSMENT (GROUP)**

***“i – Wake Device”***

**GROUP : NHSNF8Y**

**COURSE : TECHNOLOGY ENTREPRENEURSHIP**

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## 1.1 INTRODUCTION

i – Wake is an intelligent device that wakes brain and works by detecting when the user's eyes close while working or driving which indicates that they are fatigue and feeling sleepy. This device is built-in rechargeable system and light-weighted.

## 1.2 BACKGROUND

This device help in wakes the brain and a life saver to keep user awake during momentary lapses caused by fatigue and sleepiness. i –Wake device works by detecting when the user's eyes close more than 10 seconds which indicates that they may be falling asleep. It alerts with a strong vibration on ear and shoulders, both the vibration and beep alarms are built into the device, the user are free to select their preference on their smart phone application.

## 1.3 PROBLEM STATEMENT

1. Fatigue resulting from continuous physical or mental activity is characterized by a diminished capacity to do work and subjective feeling of tiredness.
2. Fatigue may result from inadequate rest, sleep loss or nonstandard work schedule because of working night shift.
3. Fatigue has predictable effects such as slowed reaction time, lapses of attention to critical details, errors of omission and compromised in problem solving.

## 1.4 OBJECTIVE OF DEVELOPMENT PURPOSE

- i. To increase productivity and job performance especially if their tasks demands accuracy e.g. calculation of medication.
- ii. To prevent psychological and behavioral functions affected by circadian rhythms.
- iii. To improve reaction time, visual search and perceptual-motor tracking at night time.

## 1.5 TECHNOLOGY OF DESCRIPTION

There are 5 components in i-Wake. The component of i-Wake is:

- Sensor on reading glasses/ clip on frame/ contact lens detect the eye lid closure for more than 10 seconds.
- Automated activation mode transfer from eye detector to hear clip and activate Bluetooth massage on shoulder with minimum strength automatic started.
- The ear vibration will stimulate the brain for a sympathetic reaction.
  - “Eyes will wide-open”.
- Contains with systematic massage techniques on both shoulders.
  - Promotes the blood circulation throughout the body system.
  - Increase oxygenation and level of consciousness.
  - Loose taut muscle and nerves.
- Using intelligence technologies of microcomputer chip to stimuli eyes, brain and shoulder metabolism.

## 1.6 UNIQUE FEATURES

1. Operates with a single touch.
  - ON / OFF button.
2. Synchronize with mobile devices via Bluetooth.
  - Controls method (Power, Level of massage strength, etc.).
3. Automated activation mode – massage.
  - Eye lid closure sensor (reading glasses/ clip on frame/ contact lens).
4. Consumer friendly.
  - Simple steps for installation.
5. Rechargeable and battery saver.
  - Available with USB connection for data transfer.
6. Adjustable device.
  - Based on ear contour.

### 1.6.1 Product Description

Description	Specifications
Product Name	i- Wake
Working Voltage	2.2 -3.3V (rechargeable and built-in battery)
Charging Voltage	Input (100V – 240V) / Output (20V)
Power Consumption	0.1 watt
Weight (device)	50g
Reading Glasses/ Contact Lens/ Clip on Frame	Min +1.00
Weight (reading glasses/ clip on frame)	10g / 5g

### 1.6.2 Product Effectiveness

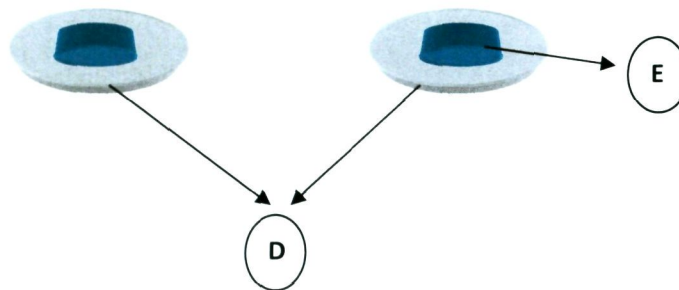
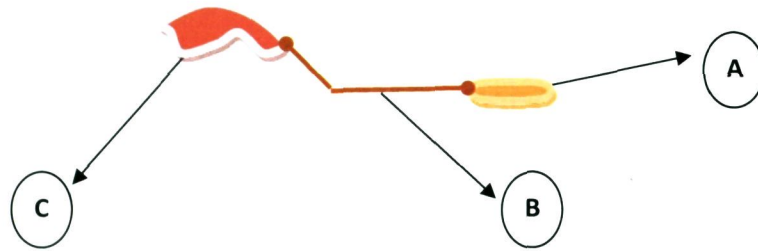
Shoulder massager for acupressure points with vibration to waking up the brain while driving, studying, working and meeting, in order for relaxing the taut muscles and promoting blood circulation.

This product based on Acupuncture points:

- Yangbai acupoint (above eyebrow):  
Eliminate eyes fatigue
- Da Zhui acupoint (along C1 process):  
Eliminate headache, dizziness, hangover, the symptom such as insomnia, anxiety, effectively a drop-in blood pressure.
- Nao Hu acupoint (scapula):  
Eliminate headache, dizzy, neck stiffness, insomnia, eye fatigue and other symptoms.

## CHAPTER 2 2.0 TECHNOLOGY DESCRIPTION

### 2.1 OVERVIEW OF PRODUCT PROTOTYPE



Label	Device
A	Eye Detector
B	Flexible wire
C	Ear clips
D	Electrodes
E	Bluetooth sensor