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UNIVERSITI TEKNOLOGI MARA

NEW PRODUCT DEVELOPMENT

ENT 600 – TECHNOLOGY ENTREPRENEURSHIP

SMOKE AND HAZARDOUS GASES DETECTOR (S.H.A.Z.D)

FACULTY & PROGRAMME : FSG – AS245,

BACHELOR OF APPLIED CHEMISTRY

GROUP : AS245 5S

PROJECT TITLE : NPD – SMOKE AND GAS HAZARDOUS DETECTOR

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sentence structure

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EXECUTIVE SUMMARY

It is known that gases and vapours produced, under many circumstances, have harmful effects on human who exposed to them by inhalation, being absorbed through the skin, or swallowed. Many toxic substances are dangerous to health in concentrations as little as 1ppm (parts per million). Gaseous toxic substances are especially dangerous because they are often invisible and/or odourless. Their physical behaviour is not always predictable ambient temperature, pressure and ventilation patterns significantly influence the behaviour of a gas leak. Nowadays, with the increasingly rapid development of technological media, the rapid growth of industry, the hundreds of cars that circulate every day in the streets of major cities, the use of pesticides and other poisonous substances for the exaggerated production of products increased the pollution of the atmosphere resulting in the daily exposure of humans to small concentrations of harmful gaseous substances such as carbon monoxide and carbon dioxide which have serious harmful effects on humans health . The factors that can lead to poisoning are related to the physicochemical. Generally, the rate of poisoning is higher in urban areas and especially in large ones. This is because the conditions in those areas help the development of poisoning. This study was conducted to develop a product that can automatically detect hazardous gases which is colorless, odorless, and also smokes. Our new product is a smoke and hazardous gases detector. It can detect the presence of gases in an area, often as part of a safety system. This type of equipment is used to detect a gas leak or other emissions. A smoke and hazardous gases detector gives a signal by producing sound of alarm to operators in the area where the leak is occurring, giving them the opportunity to leave. This type of device is important because there are many gases that can be harmful to organic life, such as humans or animals. Also, this paper will highlight the design of the product and reasoning behind the parameters chosen.

1.0 INTRODUCTION

1.1 PROBLEM STATEMENT/ISSUES

During few months back, the problems that people who stay near at the industrial area got some problems related to the hazardous gases that dispersed in the environment without they know the presence of the hazardous gases. It is because some of the hazardous gases cannot be smell, see, and colourless. So, some device will be needed for the people that stay near at the industrial area or they who stay in the area that possibly to get the high API (Air Pollution Index).

Therefore, the gas and hazardous gases detector will be introduced to the public as an alert about the hazardous gases.

1.2 METHODOLOGY

The method that has been carried out for this product is by observation which is the survey about the people that stay near with the industrial area. Furthermore, the people who stay in the state that contain high API (Air Pollution Index), being ask and answer the questionnaire that provided from this innovation of smoke and hazardous detector.

1.3 LIMITATIONS

This innovation of products not really applicable to the people that stay at rural area because of the area does not have higher concentration of hazardous gases. However, the people who stay at the rural area still can get this product.

2.0 NEW PRODUCT DEVELOPMENT

2.1 Definition

New product development that we made is smoke hazardous detector. The main function of this product is its potential to detect any dangerous gas that released to the environment. This product has its own speciality where the detector contains a particular component of sensor that able to detect the amount of concentration of gas released that is beyond safe limits and hence, it will give a warning by the sign of the sirens and light. Certain chemical gas emits odourless, tasteless and colourless properties which makes it unrecognizable and undetectable by our senses. By referring to the case of Kim Kim River in Pasir Gudang, Johor, this product may contribute as a useful machine for early awareness that might happen in the future.

2.2 Classification of NPD

In order to get a good market, new product development is very important as a strategy to expand the business. Basically; new products can be classified into the following categories:

    a. New-to-the-world products
    b. New product lines
    c. Addition to existing product lines
    d. Improvements and revisions of existing products
    e. Repositioning
    f. Cost reductions

Based on the classification of new product development, our product is categorized in improvement on existing product. Current products are made better by improving quality, features or performance of an existing product. What different that we offered? The different that we offered through this product is very beneficial to all the users especially for the industry. This smoke hazardous gases detector has so many functions and additional featured that surely impressed. Our product which is multifunctional products can

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