

**ANALYSIS THE RELATIVE LIGHT INTENSITY
USING FIBER OPTICS SENSOR**

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ABSTRACT

This paper is analysis the relative light intensity on the light sources such as infrared and visible light to detect the gas bubbles and liquid (oil droplets) in water. The purpose of this project is to identify the existences of the gas bubbles and oil droplets which flow through the pipe. The research is done by radiated the light sources such as infrared and visible light to the gas bubbles or oil droplets. The relative intensity of the light which passes through the gas bubbles and oil droplets will absorbed by the optical sensor which located around the pipe. The research of this project accomplish by developed the mathematical modelling on these three model, which is oil droplets in visible light, oil droplets in infrared and gas bubbles in visible light and infrared. All the factors which affect the relative intensity of light are consider in this calculations. At the end of this project, we found out that the relative intensity of light absorbed by the optical sensor is based on sizes of gas bubbles and oil droplets. The behaviour of the gas bubbles and oil droplets are similar as long as their sizes are less than the diameter of the light sources.

Keywords: Relative light intensity, absorption coefficient, refractive index, infrared, visible light, reflection losses, gas bubbles and oil droplets.

TABLE OF CONTENTS

| CHAPTER | | PAGE |
|---------|---|------|
| | DECLARATION | ii |
| | ACKNOWLEDGEMENT | iii |
| | ABSTRACT | iv |
| | TABLE OF CONTENTS | v |
| | LIST OF FIGURES | viii |
| | LIST OF TABLES | x |
| | LIST OF ABBREVIATIONS | xi |
| 1 | INTRODUCTION | |
| | 1.1 Introduction | 1 |
| | 1.2 Objective of project | 2 |
| | 1.3 Scope of Work | 3 |
| | 1.4 Organization of Project | 3 |
| 2 | LITERATURE REVIEW | |
| | 2.1 Infrared Thermography vs. Visible Light | 4 |
| | 2.1.1 The Visible Spectrum | 5 |
| | 2.1.2 Infrared Thermography | 5 |
| | 2.2 General Purpose- Sources Infrared | 6 |
| | 2.2.1 The Laser | 6 |
| | 2.2.2 The Tungsten Lamp | 7 |
| | 2.3 Gas bubble and Liquid as a Lens | 8 |
| | 2.4 Reflection | 9 |
| | 2.5 Absorption | 10 |
| | 2.6 Refractive Index | 11 |
| | 2.7 Speed of Light | 13 |