

## TABLE OF CONTENTS

TITLE PAGE .....	i
LEGALIZATION PAGE.....	ii
PLAGIARISM FREE STATEMENT .....	iii
PREFACE .....	iv
TABLE OF CONTENTS .....	v
LIST OF FIGURES .....	vi
LIST OF TABLES .....	vii
LIST OF ABBREVIATIONS .....	viii
APPENDICES LIST.....	ix
ABSTRACT.....	x
INTISARI .....	xi
CHAPTER 1. INTRODUCTION .....	1
1.1. Background.....	1
1.2 State of the art .....	4
1.3. Problems .....	5
1.4. Aims .....	5
1.5 Benefits .....	6
CHAPTER 2. LITERATURE REVIEWS AND THEORITICAL BACKGROUNDS .....	7
2.1. Literature studies.....	7
2.2. Theoretical Studies.....	9
2.3. Hypothesis.....	16
CHAPTER 3. RESEARCH METHODS .....	18
3.1. Materials and Methods.....	18
3.2. Statistical analysis.....	21
CHAPTER 4. RESULTS AND DISCUSSION .....	23
CHAPTER 5. CONCLUSIONS .....	41
REFERENCES .....	42
APPENDICES .....	48

## LIST OF FIGURES

Figure 2.1. Meat spoilage main causes .....	11
Figure 2.2. Food spoilage sensor materials.....	13
Figure 2.3. Electrospinning process.....	16
Figure 2.4. Research concept structure .....	17
Figure 3.1. Research steps .....	18
Figure 4.1. SEM images of the nanofiber .....	24
Figure 4.2. FTIR spectra of the nanofiber.....	26
Figure 4.3. Mechanical characteristics of the nanofiber .....	27
Figure 4.4. Thermal characteristics of the nanofiber .....	29
Figure 4.5. LAB value of the nanofiber .....	33
Figure 4.6. Chicken meat freshness with the nanofiber sensor.....	34
Figure 4.7. Color mechanism of curcumin .....	38



## LIST OF TABLES

Table 1.1. Previous research on curcumin-based nanofibers .....	4
Table 2.1. Comparison among methods for nanofiber production .....	14
Table 4.1. Contact angle result.....	25
Table 4.2. TGA and DSC temperature interpretation of the nanofiber .....	30
Table 4.3. $\Delta E$ value of the nanofiber .....	32
Table 4.4. Total volatile basic nitrogen (TVB-N) .....	35