



TABLE OF CONTENTS

TITLE	i
PAGE OF APPROVAL	ii
STATEMENT	iii
DEDICATION PAGE	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	vii
LIST OF APPENDIXES	viii
ABSTRACT	ix
INTISARI	x
CHAPTER I INTRODUCTION	1
I.1 Research Background	1
I.2 Objectives	4
I.3 Advantages	5
CHAPTER II LITERATURE REVIEW AND HYPOTHESIS	6
II.1 Literature Review	6
II.2 Formulation of Hypothesis and Research Framework	14
II.2.1 Hypothesis formulation	14
II.2.2 Experimental design	14
CHAPTER III EXPERIMENTAL METHOD	15
III.1 Materials	15
III.2 Equipment and Instrument	15
III.3 Procedures	15
III.3.1 Synthesis of Fe ₃ O ₄	15
III.3.2 Synthesis of TiO ₂ -Ni	16
III.3.3 Synthesis of Fe ₃ O ₄ /TiO ₂ -Ni composite	16
III.3.4 Characterization of composite	16
III.3.5 Photocatalytic Activity Test	17
CHAPTER IV RESULT AND DISCUSSION	18
IV.1 Synthesis of Composites	19
IV.2.1. Magnetite (Fe ₃ O ₄)	19
IV.2.2. TiO ₂	21
IV.2.3. TiO ₂ -Ni	24
IV.2.4. Fe ₃ O ₄ /TiO ₂ -Ni	27
IV.2 Photocatalytic Activity	35
CHAPTER V CONCLUSION	44
V.1 Conclusion	44
V.2 Suggestion	44
REFERENCES	45
APPENDIXES	49