Ain Shams University
Faculty of Education
Department of Chemistry

Synthesis and biological evaluations of some novel phosphorus compounds containing chromene ring

A thesis submitted
By

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For in partial fulfillment for requirements of MSc Degree of
Teacher's Preparation in Science (Organic Chemistry)

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Ain Shams University
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Approval Sheet

Synthesis and biological evaluations of some novel phosphorus compounds containing chromene ring

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The thesis was approved — Approval date / / 2018

Approved by Council of Faculty — Approved by Council of University

Date / / 2018 — Date / / 2018

بسم الله الرحمن الرحيم

((قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ
وَالَّذِينَ لَا يَعْلَمُونَ ۗ إِنَّمَا يَتَذَكَّرُ
أُولُو الْأَلْبَابِ))

الزمر 9

Dedication

To my parent

To my husband

To my children

And

To my lovers

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Noha M. Hassanin

The candidate has successfully passed examinations in the following topics in the post graduate studies

I) Topics of General Diploma for Teacher's Preparation in Science (Chemistry):

Organic Chemistry 1

(A) Natural Products

(B) Polymer Chemistry

Organic Chemistry 2

(A) Reaction Mechanism

(B) Stereochemistry

Physical Chemistry 1

(A) Catalysis Chemistry

(B) Electrochemistry

Physical Chemistry 2

Quantum Chemistry

Inorganic Chemistry 1

Polarography

Inorganic Chemistry 2

Organometallic Compounds

Inorganic Chemistry 3

Solutions

Inorganic Chemistry 4

Metal Chelates

مقرر تربوي 1

مقرر تربوي 2

English Language

II) Topics of Special Diploma for Teacher's Preparation in Science (Organic Chemistry)

Organic Chemistry 1

Spectroscopy I: IR, UV and Mass Spectrometry

Organic Chemistry 2

Spectroscopy II: NMR Spectrometry

Organic Chemistry 3

Heterocyclic Chemistry

Organic Chemistry 4

Selected Topics: Aromaticity, Delocalized Chemical bonding, and Aromatic Nucleophilic Substitution

Organic Chemistry 5

Stereochemistry

Organic Chemistry 6

Organic Reactions

Organic Chemistry 7

Free Radicals Reactions

Organic Chemistry 8

(A) Sulfur and Phosphorous Compounds

(B) Organic Analytical Chemistry

Organic Chemistry 9

Review Article

مقرر تربوي 1

مقرر تربوي 2

English Language

III) Topics of Master for Teacher's Preparation in Science (Organic Chemistry)

Organic Chemistry 1

Physical-organic chemistry

Organic Chemistry 2

(A) Microanalysis

(B) Modern organic Synthesis

Organic Chemistry 3

Advanced Organic Spectroscopy

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Pericyclic reactions

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كفاءة لغوية

English Language

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