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شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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بالرسالة صفحات لم ترد بالأصل



STUDIES ON THE SYNTHESIS OF SOME HETEROCYCLIC NITROGEN COMPOUNDS

A THESIS

Submitted In Partial Fulfilment Of The Requirements
For The Master Degree Of Science

BY

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(1996)

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بِسْمِ
اللّٰهِ
الرَّحْمٰنِ
الرَّحِیْمِ

وَقُلْ رَبِّ زِدْنِيْ عِلْمًا

صَدَقَ اللّٰهُ الْعَظِيْمُ

سورة طه : من آیه ١٤٤

Dedicated

to



My Parents

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NOTE

Beside the work carried out in this thesis, the candidate has attended postgraduate courses for one year in Organic Chemistry including the following topics :

- 1- Spectroscopy (U.V., I.R., NMR and M.S.).
- 2- Mechanism of Organic Reactions.
- 3- Types of Organic Reactions.
- 4- Heterocyclic Compounds.
- 5- Microanalysis of Organic Compounds.
- 6- Physical Methods for Identification of the Organic Compounds.
- 7- Natural Products.
- 8- Polymers.
- 9- German Language.

He also successfully passed a written examination in these topics.

Prof. Dr. M. El-Garby

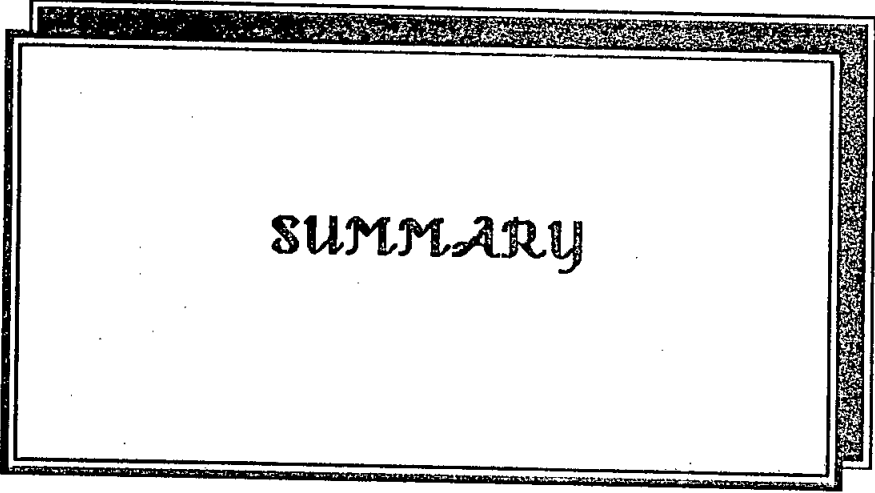
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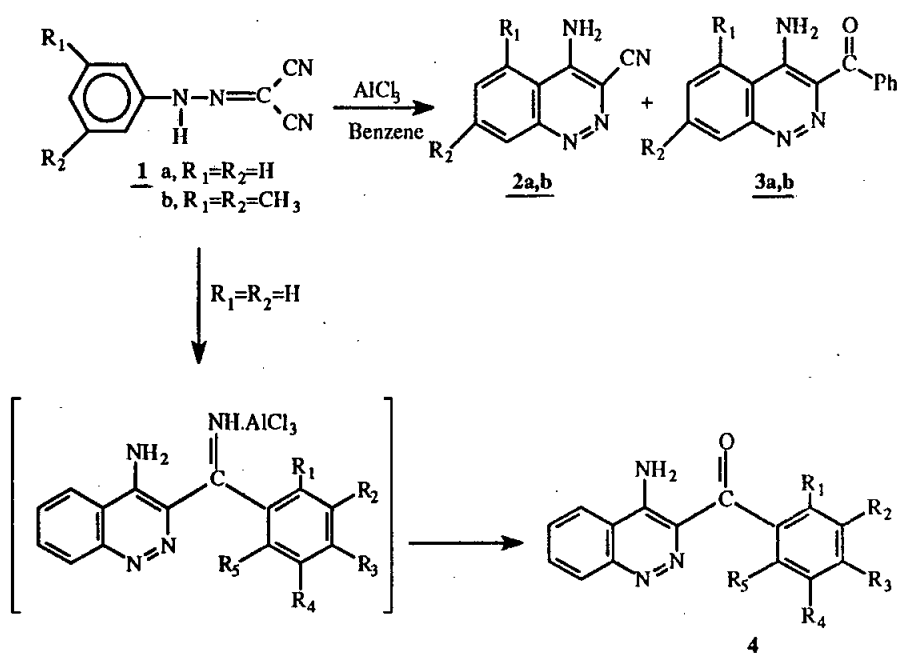
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SUMMARY

SUMMARY OF THE ORIGINAL WORK

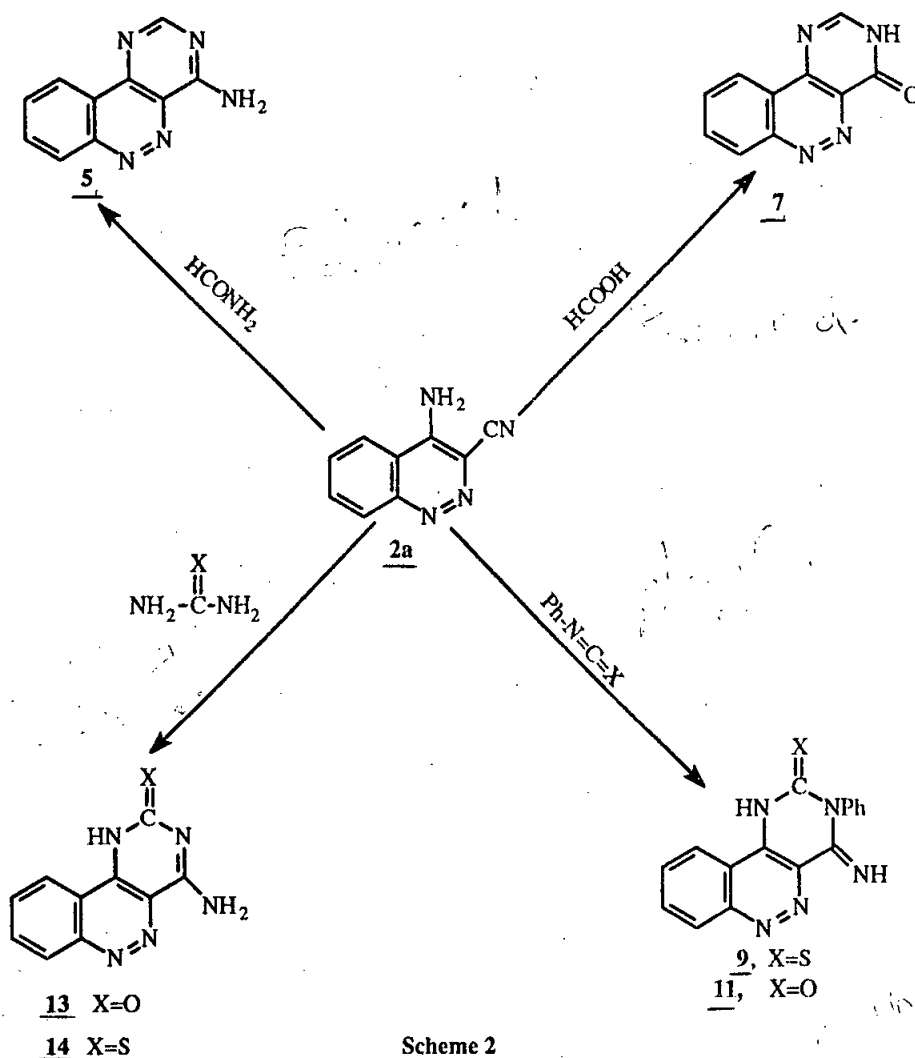
In summary, it has been found that 4-amino-3-cyanocinnolines 2a,b and (4-amino-3-cinnolinyl)(phenyl) ketone 3a,b are readily obtained via intramolecular cyclization of arylhydrazonomalononitrile 1a,b in the presence of AlCl_3 and benzene. Other solvents instead of benzene such as toluene, ethylbenzene, o-xylene, m-xylene, p-xylene and 1,3,5-trimethylbenzene under the same condition convert 1a to compounds 4a-f respectively in excellent yield.



4	R ¹	R ²	R ³	R ⁴	R ⁵
a	H	H	CH ₃	H	H
b	H	H	C ₂ H ₅	H	H
c	CH ₃	H	CH ₃	H	H
d	CH ₃	H	H	CH ₃	H
e	H	CH ₃	CH ₃	H	H
f	CH ₃	H	CH ₃	H	CH ₃

Scheme (1)

Condensation of 4-amino-3-cyanocinnoline with formamide, formic acid, phenyl isothiocyanate, phenyl isocyanate, urea, and thiourea gave the pyrimidino[5,4-c]cinnoline derivatives 5, 7, 9, 11, 13 and 14 respectively (Scheme 2).



Scheme 2

Treatment of 4-amino-5,7-dimethyl-3-cinnolinylcarbonitrile with n-hexylamine, cyclohexylamine, isopropylamine and hydrazine hydrate has been discussed.