

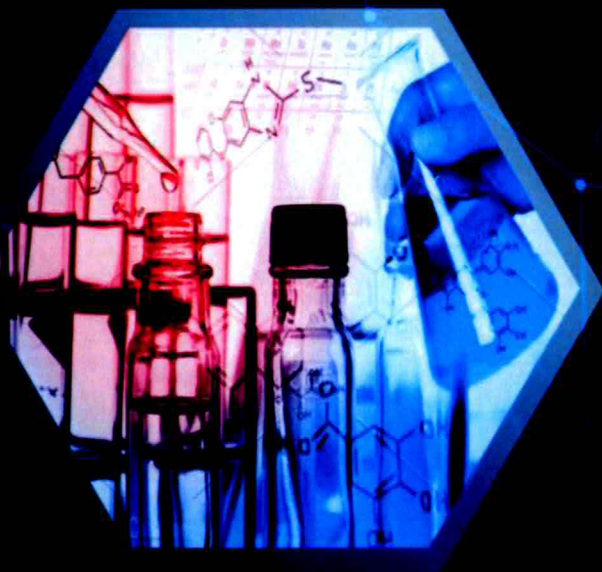
Proceedings of National Conference On

# INNOVATIVE RESEARCH IN MEDICAL CHEMISTRY



*Edited By*

*Dr.J.Jani Matilda*



10<sup>th</sup> FEBRUARY 2023, FRIDAY



*Organized By*

**DEPARTMENT OF CHEMISTRY**

**MUSLIM ARTS COLLEGE**

**THIRUVITHANCODE - 629167, KANYAKUAMRI DIST**

**TAMIL NADU - INDIA**



Cept of Chemistry  
Muslim Arts College

# **INNOVATIVE RESEARCH IN MEDICINAL CHEMISTRY**

**National Conference Proceedings**

**IRIMC-2023**

*Edited By*

**Dr. J. Jani Matilda**



**DEPARTMENT OF CHEMISTRY**

**Muslim Arts College**

**Thiruvithancode – 629174**

**Kanyakumari District**

**Tamil Nadu, India.**

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## *Preface.....*

One Day National Conference On '**Innovative Research in Medicinal Chemistry**' (IRIMC-2023) organized by the Department of Chemistry, Muslim Arts College, Thiruvithancode on 10<sup>th</sup> February 2023. This seminar will be forum to specialize in the recent Innovation and to develop new therapeutic agents by involving synthetic organic and inorganic metal complexes in Medicinal Chemistry. We trust that this seminar would provide valuable insights to the participants to explore the deeper levels of chemistry towards the healthier life. We believe that the book of proceedings will be very useful and readable. It includes two invited talks and forty four contributed papers from research scholars, academicians and scientists. We thank all authors for their contributory papers. We look forward to a productive and successful seminar.

I take this opportunity to thank the Management, the Correspondent-Secretary and Principal of Muslim arts college, Thiruvithancode, for their unstinted cooperation, help and support. I must also thank all the conference office bearers, the organizers, members of the editorial board for their dedication, commitment and involvement in rendering the event unique and memorable. My thanks are also due to all the delegates and the scholar who really make a conference a conference with their paper presentation and sharing of notes, as it were, which is the very vital element in any intellectual activity for the benefit and betterment of humanity.

Dr. J. JANI MATILDA

## ***About the conference***

The Conference aims to provide a platform to the students, researchers and faculties of various nearby colleges and departments and also researchers from other institutes to come together and share their findings in various branches of chemistry. This conference will be one of the national meetings exclusively dedicated to medicinal chemistry. The national conference on innovative research in medicinal chemistry explores the deeper levels of chemistry towards a healthier life. The scientific session comprises research areas of Medicinal Chemistry, Bio Chemistry, Inorganic and Organic Materials, Coordination Chemistry, Polymer Chemistry, Nanoscience & Materials, Photo Chemistry, Environmental Chemistry etc. The very attractive speaker of the conference provides a unique opportunity to the participants to listen, interact and benefit from the invited talks and discussions.

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## GREEN SYNTHESIS OF NANOPARTICLES USING IXORA COCCINEA PLANT EXTRACT

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### Abstract

Green particles manufacturing has several applications in the environmental and medical fields. Green synthesis, aims to decrease the usage of harmful chemicals, This chapter covers the greensynthesis of lead nano particles using ixoracoccinea plant extract. These lead nano particles were investigated by UV, XRD and characterized by sem and anti microbial activity.

**Key words:** Ixoracoccinea, lead nitrate, lead nano particles and scanning electron microscope.

### Introduction

In recent years there is an emerging interest to synthesize magnetic NPs of Fe, Co, and Ni due to their superior magnetic properties and potential uses in many fields including catalysis, memory storage devices, and sensors. In the field of medicine they are used for magnetically controlled drug delivery, magnetic resonance imaging, and hyperthermia treatment of cancer cells [1-3]. Bio-nanotechnology synthesize NPs by using biological systems including bacteria, fungi, yeast, plants, and naturally occurring small molecule such as vitamins, protein peptides, and reducing sugars [4-6].

Herein, we review the work done in the field of green synthesis of lead NPs and discuss the role of reaction parameters on the structural properties of formed lead NPs. We also present a comparative overview of influence of chemical synthesis and green synthesis on the lead NPS structural properties and biological properties.

### Methods and Materials

#### Synthesis of lead nanoparticles:

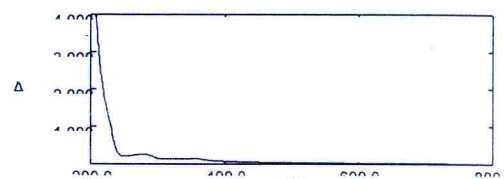
5mL of Ixoracoccinea leaf extract was treated to 10 mL of 0.1M aqueous solution of Leadnitrate then stirring continued for 1 minute at room temperature. The solution was changed from yellow to dark fellow which indicates the formation of Lead nanoparticles.

### Result and Discussion

#### UV-Visible spectrum of Lead nanoparticle:

The reduction of lead nitrate to pure lead nanoparticle was maintained by using UV-Vis spectrometer. The absorption spectrum of dirty green nanoparticle to form a broad peak. The absorption was recorded from 200 to 800

nanometer. The obtained result depict the higher absorbance peak at 285nm and the spectra is shown Fig.



Wavelength (nm)

**Fig.UV-Visible Spectrum of Lead Nanoparticle**

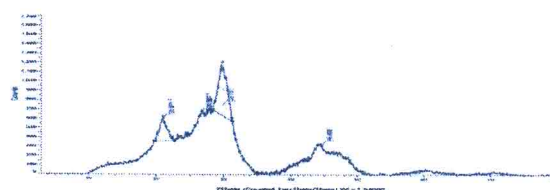
#### SEM analysis:

The lead nanoparticles are rectangular, trigonal and spherical in shap with uniform distribution. However the average size of an individual particle is estimated to be 500 nm, 1  $\mu$ m the lead nanoparticle. Show the absorbtion peaks of higher counts.



Fig. SEM image for lead nanoparticle-500 nm

#### XRD ANALYSIS:



### Fig.XRD Pattern for lead nanoparticles

Fig. shows XRD patterns of ixoracoccinea extract capped lead nanoparticle. Two main diffraction peaks for lead were observed at  $2\theta = 20.971, 29.781$  respectively. In general, the diffraction peaks of XRD patterns are related to crystallite size lead nanoparticle.

#### Antibacterial Activity:

##### Antibacterial activity of the Ixoracoccinea:

The aqueous extract of *Ixoracoccinea* showed potent antibacterial activity and the zone of inhibition was 12mm, 16mm.

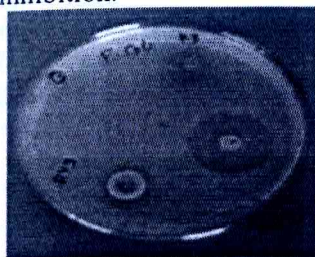


Fig. Antibacterial activity of leaf extract and final solution

From the Fig. Antibacterial activity of *Ixoracoccinea* extract against *E. coli*. 20  $\mu$ l of crude extract was loaded into the well and antimicrobial activity was assayed.  $C_{s1} = 29$ mm,  $V_1 = 12$ mm, 16mm.

#### Conclusion

The rapid synthesis of Lead nanoparticles using leaf extract of *Ixoracoccinea* provides an environmental friendly, simple and efficient route for synthesis of nanoparticles. In this report the synthesis of nanoparticles using plant extract is traditional method of chemical synthesis. Formation of lead nanoparticles has been determined by different methods. The UV-VIS absorption spectroscopy was used for

determining. The SEM analysis obtained as a value of 500 nm. The X-ray diffraction (XRD) analysed. Antibacterial activity was taken for this determination.

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## DEPARTMENT OF CHEMISTRY

National Conference On

### INNOVATIVE RESEARCH IN MEDICINAL CHEMISTRY [ IRIMC-2023 ]

## Certificate

This is to certify that **MR/MS/MRS/DR. Dr. RATHIKA, Asst. Professor, Muslim Arts College** has participated in the National Conference on

**Thiruvithancode** Innovative Research in Medicinal Chemistry (IRIMC-2023) organized by the Department of Chemistry,

Muslim Arts College, Thiruvithancode, Kanyakumari District on 10<sup>th</sup> February 2023.

He/She has presented a paper Oral/Poster entitled **Green Synthesis of Nanoparticles**

Using **Tea** **Leaves** **Plant** **Extract**

From: Dr. H. Mohammed Ali

Secretary

Dr. G. Edwin Sheela

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