



Department : Chemistry		
Academic Year : 2019-20		
Sr. No.	Programme Code	Name of the Programme
01.	104	B. Sc. (Hons)

Following students have carried out their Project work/ Internship/
Field Project/Industrial Training for the academic session 2019-20

Si.No.	Name of the Students	Page No To
1.	Kiran Kumari	2-7
2.	Malwika Baghel	8-13
3.	Shubham Mahto	14-19

अध्यक्ष/Head
Signature of the Head
Deptt. of Chemistry
गुरु घासीदास विश्वविद्यालय,
Guru Ghasidas Vishwavidyalaya,
बिलासपुर 495009 (छ.ग.)
Bilaspur 495009 (C.G.)



GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

(A Central University Established by the Central Universities Act, 2009 No.25 of 2009)

DEPARTMENT OF CHEMISTRY

A

Project

ON

“STUDY OF RECEPTORS AND ITS RECOGNITION PROPERTIES”

BACHELOR OF SCIENCE (VI SEM)

(Session: 2019-20)

GUIDED BY:-

Dr NEERAJ KUMARI

Assistant professor

Department Of Chemistry

Guru Ghasidas Central University

Bilaspur (C.G.)

SUBMITTED BY :-

Ms. KIRAN KUMARI

ROLL NO:- 17210247

B.Sc VI SEM



Department of chemistry

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

(A Central University Established By Central Universities Act 2009
No. 25 of 2009)

Forwarding Certificate

This is to certify that Ms. Kiran Kumari has carried out the project in the department of chemistry, Gru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) on the topic “Study of receptors and it’s recognition properties”. This project is submitted for the patrial fulfillment of requirements for the degree of B.Sc. in Chemistry. I wish her every success in her life.

मुख्य/Head
रसायन शास्त्र विभाग
Dept. of Chemistry
गुरु घासीदास विश्वविद्यालय,
Guru Ghasidas Vishwavidyalaya,
बिलासपुर 495009 (छ.ग.)
Bilaspur 495009 (C.G.)

Dr. Tanmay Ghorai

Head of Department

Department of Chemistry

Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)



Department of chemistry

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

(A Central University Established By Central Universities Act 2009 No. 25 of 2009)

Certificate from the supervisor

This is to certify that Ms. Kiran Kumari has carried out the project on the topic "Study of receptors and it's recognition prperties" in the Department of chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur , (C.G.) under my supervision.

She has worked diligently, meticulously and methodically and collected the literature. To the best of my knowledge the work presented in this project has been performed solely by the candidate. I wish her all the success in life.

Neeraj Kumar

Dr. NEERAJ LUMARI

Assistant professor

Department of Chemistry

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.) - 495009



Department of chemistry

Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

(A Central University Established By Central Universities Act 2009 No. 25 of 2009)

Declaration

*I hereby declare that the work present in the project entitled “**Study of receptors and recognition properties**” submitted as partial fulfillment of B.Sc. Chemistry has been performed in the Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Dr. Neeraj Kumari** Assistant Professor, Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).*

The work presented in this project dissertation is performed by me in the Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

Date:

place: Bilaspur, C.G.

kiran kumari

Ms. KIRAN KUMARI

Department of Chemistry

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.) - 495009



ACKNOWLEDGEMENT

Completion of the project work which start with initial planning , literature search from various libraries (websites) than reading , understanding and compilation of material into the present project from is definitely a herculean task.

*It is my great pleasure to express my sincere gratitude to my esteem supervisor **Dr. Neeraj Kumari** , Assistant Professor, Department of Chemistry ,Guru Ghasidas Vishwavidyalaya , Bilaspur (C.G.) under whose guidance , the present project work has been brought to completion my leaps up in Thankfulness for the benevolent , time , constant help and valuable suggestions throughout the project .*

*I wish to acknowledge **Dr. Tanmay Ghorai** (Head, Department of Chemistry, Guru Ghasidas Vishwavidyalaya) who gave me opportunity to undergo project work and her valuable suggestion during my B.Sc. In Chemistry course.*

I would also like to Thank all the faculty members of the Department ,The librarian , Clerk and lab assistants and Heartily big Thanks to all my dear friends who are directly and indirectly helped me in my completion of project works.

Finally, I would also express my deep sense gratitude to my parents and family members for their encouragement and support throughout, which always inspired me .

kiran kumari

Ms. KIRAN KUMARI

Department of Chemistry

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.)-495009



CONTENT

➤ INTRODUCTION	(07-09)
➤ RECEPTORS	(09-10)
➤ TYPES OF RECEPTORS	(11-17)
➤ RECOGNATION PROPERTIES OF RECEPTORS	(17-19)
➤ DRUG RECEPTORS	(19-20)
➤ MALFUNCTIONING OF RECEPTORS	(20-23)
➤ CONCLUSION & REFERENCE	(23-24)



Department of Chemistry
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) India
(A central University Established by the Central Universities Act 2009 No. 25 of 2009)

A
Project Report
On
“ ORGANOMETALLIC COMPOUNDS ”

Submitted for
Partial Fulfillment of the requirement for the Degree of

Bachelor of Science
in
CHEMISTRY

Under the Guidance
Dr. Suryabhan Singh

Assistant Professor
Department of Chemistry
Guru Ghasidas Vishwavidyalaya,
Bilaspur (C.G.), 495009, INDIA

Submitted by
Malwika Baghel

B.Sc. (Chemistry) VI Semester
Roll No. - 16210127
Enrollment No.- GGV/16/7090

Session: 2019-20



Department of Chemistry
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) India
(A central University Established by the Central Universities Act 2009 No. 25 of 2009)

DECLARATION

I hereby declare that the work presented in the project entitled “**ORGANOMETALLIC COMPOUNDS**” submitted to the partial fulfillment of Bachelor of Science (Hon’s) in Electronic has been performed in the Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), 495009 under the Guidance of **Dr. SURYABHAN SINGH** is truly carried out by me.

The work presented in this project is original and remain intellectual property of Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), 495009, INDIA.

MALwika Baghel
Malwika Baghel

Date:

B.Sc. (Chemistry) VI Semester
Roll No. – 16210127
Enrollment No. – GGV/16/7090



Department of Chemistry
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) India
(A central University Established by the Central Universities Act 2009 No. 25 of 2009)

CERTIFICATE

This is to certify that the thesis entitled, “**ORGANOMETALLIC COMPOUND**” submitted by **MALWIKA BAGHEL** in the partial fulfillment for the requirements for the award of Bachelor of Science Degree in Chemistry at Department of Chemistry, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.), 495009, INDIA is an authentic work carried out by her under my supervision and guidance.

Date: 01/07/2020.

Dr. SURYABHAN SINGH
Assistant Professor
Department of Chemistry



Department of Chemistry
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) India
(A central University Established by the Central Universities Act 2009 No. 25 of 2009)

APPROVAL CERTIFICATE

This is the certify that the project entitled “ **ORGANOMETALLIC COMPOUND** ”
submitted by **MALWIKA BAGHEL** is approved for the award of Bachelor of Science
(Hon's) in Chemistry.

Date:

Prof. TANMAY GHORAI
Head
रासायन विभाग
Department of Chemistry
Deptt. of Chemistry
Guru Ghasidas Vishwavidyalaya, Bilaspur
(C.G.), 495009, IN-17A
Guru Ghasidas Vishwavidyalaya.
बिलासपुर 495009 (छ.ग.)
Bilaspur 495009 (C G.)



ACKNOWLEDGEMENT

Completion of the project work which start with initial planning literature search from various libraries (website) then reading, understanding and completion of material into the present project from is definitely task, which doesn't semesters to be possible without grace of God.

I wish to express my deep sense of gratitude and indebtedness to **Dr. SURYABHAN SINGH, Assistant professor** and of department of Chemistry, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) for introducing the present topic and for his inspiring guidance, constructive criticism and valuable suggestion throughout this project work.

I would like to express my gratitude to **Prof. TANMAY GHORAI** (Head of Department) for his constant support and encouragement. I am also thankful to all staff members of Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur.

I big thank to my dear friends who are directly and indirectly helped me in completion of my project works. Finally my deep appreciation goes to my parents and family members for their encouragement and support throughout, which always inspired me.

MALWIKHA BAGHEL

MALWIKA BAGHEL



CONTENTS

- INTRODUCTION
- HISTORICAL DEVELOPMENTS
- STRUCTURE
- DEFINING CHARACTERISTICS
- PROPERTIES
- IMPORTANCE
- CONCEPT And TECHNIQUES
- ORGANOMETALLIC COMPOUNDS And REACTION
- STABILITY And REACTIVITY
- S And P BLOCK ORGANOMETALLIC COMPOUNDS
- D And F BLOCK ORGANOMETALLIC COMPOUNDS
- APPLICATIONS
- CONCLUSION
- REFERENCES

गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर - 495009 (छ.ग.)



Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur - 495009 (C.G.)



GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

(A Central University Established by the Central Universities Act, 2009 No.25 of 2009)

DEPARTMENT OF CHEMISTRY

A

Project

ON

“METALLORECEPTORS”

BACHELOR OF SCIENCE (VI Sem)

(Session: 2020-21)

Guided by :

Dr. NEERAJ KUMARI

Assistant professor

Department Of Chemistry

Guru Ghasidas Central University

Bilaspur (C.G.)

Submitted by :

Mr. SHUBHAM MAHTO

Roll No. :- 17210263

B.Sc VI, SEM



Department of chemistry

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

(A Central University Established by the Central Universities Act, 2009 No.25 of 2009)

Forwarding Certificate

This is to certify that **Mr. Shubham Mahto** has carried out the project
in the department of chemistry,
Guru Ghasidas Vishwavidyalaya

(A Central University), Bilaspur (C.G.) on the topic

“Study of metelloreceptors and their properties”

This project is submitted for the partial fulfillment of requirements
for the degree of B.Sc. in Chemistry and forwarded to examiner for
evolution. I wish him every success in his life.

शुभम/Head
रसायन शास्त्र विभाग
Deptt. of Chemistry
गुरु घासीदास विश्वविद्यालय,
Guru Ghasidas Vishwavidyalaya,
बिलासपुर 495009 (छ.ग.)
Bilaspur 495009 (C.G.)

Dr. Tanmay Ghorai
Head of Department
Department of Chemistry
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.)



Department of chemistry

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

(A Central University Established by the Central Universities Act, 2009 No.25 of 2009)

Certificate from the supervisor

This is to certify that **Mr. Shubham Mahto** has carried out the project on the topic **“Study of metalloreceptors and their properties”** in the Department of chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur , (C.G.) under my supervision.

He has worked diligently, meticulously and methodically and collected the literature very sincerely and carefully. To the best of our knowledge the work presented in this project has been performed solely by the candidate. I recommended the project report to be forwarded to the respective examiner for evaluation. I wish him all the success in his carrier and life.

Neeraj Kumar

Dr. NEERAJ KUMARI
Assistant professor
Department of Chemistry
Guru Ghasidas Vishwavidyalaya
Bilaspur (C.G.) - 495009



Department of chemistry

GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR

(A Central University Established by the Central Universities Act, 2009 No.25 of 2009)

Declaration

I hereby declare that the work present in the project entitled “Study of metalloreceptors and their properties” submitted as partial fulfillment of B.Sc. Chemistry has been performed in the Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur under the supervision of **Dr. Neeraj Kumari** Assistant Professor, Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

The work presented in this project dissertation is performed by me in the Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

shubham mahto

Date :

Place: Bilaspur, C.G.

Mr. SHUBHAM MAHTO

Department of Chemistry

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.) - 495009



ACKNOWLEDGEMENT

Completion of the project work which start with initial planning, literature search from various libraries (websites) than reading, understanding and compilation of material into the present project from is definitely a herculean task.

It is my great pleasure to express my sincere gratitude to my esteem supervisor **Dr. Neeraj Kumari**, Assistant Professor, Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) under whose guidance, the present project work has been brought to completion my leaps up in Thankfulness for the benevolent , time , constant help and valuable suggestions throughout the project.

I wish to acknowledge **Dr. Tanmay Ghorai** (Head, Department of Chemistry, Guru Ghasidas Vishwavidyalaya) who gave me opportunity to undergo project work and her valuable suggestion during my B.Sc. In Chemistry course.

I would also like to Thank all the faculty members of the Department, the librarian, Clerk and lab assistants and heartily big thanks to all my dear friends who are directly and indirectly helped me in my completion of project works.

Finally, I would also express my deep sense gratitude to my parents and family members for their encouragement and support throughout, which always inspired me.

Date :

Place: Bilaspur, C.G.

shubham mahto

Mr. SHUBHAM MAHTO

Department of Chemistry

Guru Ghasidas Vishwavidyalaya

Bilaspur (C.G.) - 495009



CONTENT

- INTRODUCTION
- METALLO-RECEPTORS
- METALLOHOSTS AND MOLECULAR RECOGNITION
- CATION BINDING
- ANION BINDING
- MOLECULAR RECOGNITION BY METALLOCYCLIC SUPRAMOLECULES VIA NON-COVALENT INTERACTIONS
- CONCLUSION & REFERENCE