

**GOVERNMENT GENERAL DEGREE COLLEGE,
MANGALKOTE**

IN COLLABORATION WITH

**GOVERNMENT GENERAL DEGREE COLLEGE,
KALNA-I
REPORT**

ON

**'Understanding Chemical Bonding:
From Lewis Structures to Molecular
Orbital Theory'**

**ORGANISED BY: Department of Chemistry, Government General Degree
College, Mangalkote**

DATE: 30.05.2022

TIME: 12.00 noon – 1.30 pm

VENUE: Seminar Hall, 2nd Floor



Dr. Pradip Kumar Dasu
GOVERNMENT GENERAL DEGREE COLLEGE,
MANGALKOTE
Dist. Purba Medinipur, West Bengal - 751132

OBJECTIVE OF THE SEMINAR:

The seminar aimed to enhance the understanding of chemical bonding among students by exploring the concepts from Lewis structures to molecular orbital theory. The objective was to provide a comprehensive insight into the fundamental principles of chemical bonding, thereby enriching the students' theoretical knowledge and practical applications in chemistry.

SPEAKER:

Dr. Parnajyoti Karmakar, Assistant Professor in Chemistry, GGDC, Kalna-I

PROCEEDINGS OF THE SEMINAR:

The seminar on 'Understanding Chemical Bonding: From Lewis Structures to Molecular Orbital Theory' was organized at GGDC Mangalkote, featuring Dr. Parnajyoti Karmakar from GGDC, Kalna-I. The program commenced with an introduction to the significance of chemical bonding in understanding the properties and behaviours of molecules.

Dr. Karmakar began by explaining Lewis structures, emphasizing the representation of valence electrons and the formation of covalent bonds. He used various examples to illustrate how Lewis structures help to predict the geometry and reactivity of molecules. The speaker then transitioned to VSEPR (Valence Shell Electron Pair Repulsion) theory, discussing how the 3D shapes of molecules are determined from the number of bond pairs/electron pairs.

The seminar advanced to hybridization, where Dr. Karmakar explained the concept of mixing atomic orbitals to form new hybrid orbitals. He provided detailed explanations of sp , sp^2 , sp^3 , sp^3d and sp^3d^2 hybridizations, supported by examples of molecules like methane, ethene, acetylene, PCl_5 and SF_6 . This section highlighted how hybridization is crucial for understanding molecular geometry and bonding properties.

The final segment of the seminar was dedicated to molecular orbital theory. Dr. Karmakar elaborated on the formation of molecular orbitals through the Linear Combination of Atomic Orbitals (LCAO method). He explained bonding and antibonding orbitals and their significance in determining the stability of molecules. The speaker used diagrams and expressions to illustrate how molecular orbital theory provides a deeper understanding of bonding compared to Lewis structures and VSEPR theory.



Throughout the seminar, Dr. Karmakar encouraged interactive discussions, allowing students to ask questions and clarify their doubts. He also included real-life examples and applications of chemical bonding principles, making the session highly engaging and informative.

PARTICIPANT DETAILS:

NO. OF STUDENTS REGISTERED FOR THE SEMINAR: 32

NO. OF STUDENTS ATTENDED THE SEMINAR: 32

OUTCOME OF THE SEMINAR:

The seminar was highly successful in achieving its objectives. Students gained a thorough understanding of chemical bonding concepts, from basic Lewis structures to the advanced molecular orbital theory. The comprehensive approach adopted by Dr. Karmakar enriched the students' knowledge and sparked their interest in further exploring the field of chemistry. The interactive nature of the seminar ensured that students could actively participate and engage with the content, leading to a more profound learning experience. The program significantly enhanced the students' theoretical foundation and practical understanding, preparing them for advanced studies and applications in chemistry.



Dr. Pradip Kumar Basku
OFFICER IN CHARGE, A.B.E.S.
Central Board of Secondary Education
Dr. Purna Chandra, West Bengal - 711132

GLIMPSES FROM THE SEMINAR



PIC.1: THE SPEAKER WITH HIS PRESENTATION



PIC.2: THE SPEAKER DELIVERING HIS LECTURE

Dr. Pradip Kumar Basu



Dr. Pradip Kumar Basu
GOVERNMENT COLLEGE, HALDIA
GOVERNMENT COLLEGE, HALDIA
Dr. Pradip Kumar Basu, West Bengal - 711132

DATE: 30/05/2022

Topic: 'Understanding Chemical Bonding: From Lewis Structures to Molecular Orbital Theory'
Organized by: Department of Chemistry, Government General Degree College, Mangalkote
Speaker: Dr. Parnajyoti Karmakar, Asst. Professor, GGDC, Kalna I,

SL NO	NAME OF THE REGISTERED STUDENT	SEMESTER	SIGNATURE
1	ARIJIT DUTTA	II	Arijit Dutta
2	ARUNIMA JASH	II	Arunima Jash
3	ASRAFUNNESH Khatun	II	Asrafunnesh Khatun
4	BILLAL SK	II	Billal Sk
5	DEBABRATA DAS	II	Debabrata Das
6	DEBABRATA GHOSH	II	Debabrata Ghosh
7	NASIMA AFROJ	II	Nasima Afroj
8	NAZMA KHATUN	II	Nazma Khatun
9	NIVEDITA GHOSH	II	Nivedita Ghosh
10	RUBI KHATUN	II	Rubi Khatun
11	SATYAM DEWASIN	II	Satyam Dewasin
12	SHRABANI PAL	II	Shrabani Pal
13	SK REJOYANUL KERIM	II	SK Rejoyanul Kerim
14	SUSHOVAN KUNDU	II	Sushovan Kundu
15	TANUSHREE DEY	II	Tanushree Dey
16	ARITRA DUTTA	IV	Aritra Dutta
17	DEBKANTA PAL	IV	Debkanta Pal
18	DIPANNITA CHOWDHURY	IV	Dipannita Chowdhury
19	MALA DAS	IV	Mala Das
20	PRIYANKA SAHA	IV	Priyanka Saha
21	RUPAM GOSWAMI	IV	Rupam Goswami
22	SONIA JASH	IV	Sonia Sonia Jash
23	SOUMYA MALLICK	IV	Soumya Mallick
24	TANUJA KHATUN	IV	Tanuja Khatun
25	ABHRODIP SINGHA ROY	VI	Abhrodip Singha Roy
26	ABIDA SULTANA	VI	Abida Sultana
27	ARPITA GHOSH	VI	Arpita Ghosh
28	IMTAJ KHAN	VI	Imtaj Khan
29	SAMPAD MONDAL	VI	Sampad Mondal
30	SUBHECHHA CHAKRABORTY	VI	Subhechha Chakraborty
31	SUCHISMITA DEY	VI	Suchismita Dey
32	SUDRISHNA GHOSH	VI	Sudrishna Ghosh

PIC.3: ATTENDANCE SHEET





Government of West Bengal
Government General Degree College, Kalna I
Muragacha, Medgachi, Purba Bardhaman-713405
Website : www.ggdck.ac.in, E-mail : govt.collegekalna1@gmail.com
Office of the Principal

No. :

Date : 10/03/2022

MEMORANDUM OF UNDERSTANDING
BY AND BETWEEN

GOVERNMENT GENERAL DEGREE COLLEGE, KALNA-I
PURBA BARDHAMAN – 713405

AND

GOVERNMENT GENERAL DEGREE COLLEGE,
MANGALKOTE
PURBA BARDHAMAN -713132



Dr. Pradipta Kumar Basu
OFFICER IN CHARGE, W.B.E.S.
Government General Degree College, Mangalkota
Dt. Purba Bardhaman, West Bengal- 713132



Government of West Bengal
Government General Degree College, Kalna I
Muragacha, Medgachi, Purba Bardhaman-713405
Website : www.ggdck.ac.in, E-mail : govt.collegekalna1@gmail.com
Office of the Principal

No. :

Date : 10/03/2022

The Memorandum of Understanding (hereinafter called the MOU) is entered into on this the 10th Day of March 2022 (Two Thousand Twenty Two)

By and Between

GOVERNMENT GENERAL DEGREE COLLEGE, KALNA-I, The First Party represented herein by its Principal as Representative and Competent Authority (Hereinafter referred as "First Party", the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors – in office, administrators and assigns)

GOVERNMENT GENERAL DEGREE COLLEGE, MANGALKOTE The Second party and represented herein by the Officer-in-Charge/Principal as Representative and Competent Authority (Hereinafter represented as "Second Party", the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors – in office, administrators and assigns)

(First Party and Second Party are hereinafter jointly referred to as 'Parties' and individually as 'Party')

WHEREAS

A) FIRST PARTY is a Government Higher Educational Institution named:

i) Government General Degree college, Kalna-I, Purba Bardhaman-713405

B) First Party and Second Party believe that collaboration and cooperation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The parties intent to cooperate and focus their efforts in cooperation within the area of Higher Education, Research and Development, provide opportunity for global experience, and to facilitate advancement of knowledge on the basis of reciprocity, best effort, mutual benefit, and frequent interactions.

D) Both Parties being legal entities in themselves desire to sign this MOU for advancing their mutual interests.

E) Government General Degree College, Mangalkote, Block Mangalkote, Katwa, Purba Bardhaman 713132, the Second Party is a Government Higher educational Institute of West Bengal under the aegis of the Department of Higher Education, Government of West Bengal and is engaged in imparting higher education by running under graduate Honours programmes in various Biological Sciences and Arts streams along General programme in Arts at present with rights, possibility and extension thereafter.

F) The Second Party presently functions from its own campus at Panchanantala, Khudrun Dighi, P.O. Majhigram, Block Mangalkote, Sub Division Katwa, Purba Bardhaman, West Bengal, PIN -713132 and will continue to do so until further order from the Department of Higher Education, Government of West Bengal. It has no other branch, wing, subsidiaries or extensions existing at present.



Dr. Pradipta Kumar Basu
OFFICER IN CHARGE, W.B.E.S.
Government General Degree College, Mangalkote
Dr. Purba Bardhaman, West Bengal- 713132



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Office of the Principal

No. :

Date : 10/03/2022

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISE SET FORTH IN THIS MOU, THE PARTIES HERE TO AGREE AS FOLLOWS:

Clause-I
CO-OPERATION

1.1 Both the Parties are united by common interest and objectives, and they shall establish channels of communication and co-operation that will promote and advance -

- Joint research projects and publications, including work by undergraduate and post graduate students at the partner institutions;
- Faculty and student exchanges based on reciprocity;
- Reciprocal placement of students and co-ops, when possible;
- Team taught courses, including online courses;
- Visits by faculty, professional staff and students;
- Exchange of information on teaching, learning material and other literature relevant to their educational and research programmes;
- Joint organization of short-term continuing education programmes on topics of mutual interest and to invite each other's faculty to participate therein;
- Joint organization of seminars, conferences, or workshops on topics of mutual interest and to invite each other's faculty to participate therein; and
- Any other joint venture for academic enrichment of both the colleges on prior agreement of the Principals of both the Colleges;
within the Institution and its related wings.

1.2 Both the Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.

1.3 First Party and Second Party must respect each other's to intellectual property and the disputes if any, relating to any aspect of academic cooperation, Principals of both the College will jointly resolve the dispute in a spirit of independence, mutual respect, and shared responsibility.

1.5 Both the Parties mutually agreed not to include any financial transaction during the execution of this MOU.

1.6 Neither Party shall be held responsible for non-fulfillment of their respective obligation under this MOU due to circumstances beyond their control but not limited to pandemic, war, flood etc. If such condition continues beyond six months, the parties shall then mutually decide about the future course of action.



Dr. Pradipta Kumar Basu
OFFICER IN CHARGE, W.B.E.S.
Government General Degree College, Muragacha
D. Purba Bardhaman, West Bengal- 713132



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No. :

Date : 10/03/2022

1.7 Nothing in this MOU shall be constructed to make either party a partner, an agent or legal representative of the other for any purpose. Now onwards both the party may mention the name and LOGO of the other in their documents as "COLLABORATOR" for purpose as may be required subject to communication by the user to the other party in writing beforehand.


1.8 This MOU unless terminated by mutual written agreement will continue for 5 years after the effective date specified in the opening paragraph and can be renewed through mutual interest. Either Party shall have the right to unilaterally terminate this MOU upon 90 days prior written notice to the other party.

Agreed:

For
Government General Degree College, Kalna-I
Purba Bardhaman-713405

For
Government General Degree College, Mangalkote
Mangalkote, West Bengal-713132



Principal
Government General Degree College
Kalna-I
Authorized Signatory
Government General Degree College, Kalna-I
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Witness - 1


Rakhi Bhattacharya
Assistant Professor
Govt. General Degree College, Kalna-I

Witness - 2


Pinaki Roy
Assistant Professor, (WBES)
Department of Sociology
Govt. Gen. Degree College
Panchantala, Khudrun Digh
Mangalkote Burdwa - 713132




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Dt. Purba Bardhaman, West Bengal-713132



सत्यमेव जयते

Government of West Bengal

Office of the Principal

GOVERNMENT GENERAL DEGREE COLLEGE AT MANGALKOTE

PANCHANANTALA, KHUDRUN DIGHI, MANGALKOTE

P.O. - MAJHIGRAM; BLOCK - MANGALKOTE; SUB DIVISION - KATWA

DISTRICT - PURBA BARDHAMAN; WEST BENGAL; PIN CODE - 713132; INDIA

Email: ggdcmanagalkote@gmail.com; Website: <http://mangalkotegovtcollege.org>

Memo No.: 268/MGC

Dated: 27/05/2022

To,
Dr. Parnajyoti Karmakar
Assistant Professor Chemistry,
Government General Degree College, Kalana I
Purba Bardhaman, W.B.

Sub: Invitation to deliver a lecture in the Departmental Seminar organized by the Department of Chemistry, Govt. Gen. Degree College, Mangalkote

Sir,

With reference to the MoU signed between Government General Degree College, Mangalkote and Govt. Gen. Degree College, Kalna I, on 10th March, 2022, the undersigned likes to invite you to deliver a lecture on "**Understanding Chemical Bonding: From Lewis Structures to Molecular Orbital Theory**" on 30th May, 2022, at 12 noon, in the Departmental Seminar organized by the Department of Chemistry, Government General Degree College, Mangalkote, Purba Bardhaman-713132, West Bengal.

We hope it will be an enriching experience for the students and faculty members to listen to your interesting and thought-provoking deliberation. The tentative duration of the talk is 45 (40+5) minutes.

We shall be obliged if you kindly accept our invitation.

Thanking you,



With regards,


OFFICER IN CHARGE, W.B.E.S.
Government General Degree College, Mangalkote
Dt. Purba Bardhaman, West Bengal-713132
Officer-In-Charge
GGDC, Mangalkote




Dr. Pradip Kumar Bera
OFFICER IN CHARGE, W.B.E.S.
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Email: ggdc mangalkote@gmail.com; Website: <https://mangalkotegovtcollege.org>

Certificate of Appreciation

The undersigned expresses his gratitude to **Dr. Parnajyoti Karmakar**, Assistant Professor of Chemistry (WBES), Government General Degree College, Kalna-I, Purba Bardhaman, West Bengal for delivering a lecture on **"Understanding Chemical Bonding: From Lewis Structures to Molecular Orbital Theory"** in the Departmental Seminar organized by the Department of Chemistry, Government General Degree College, Mangalkote, Purba Bardhaman-713132, West Bengal on 30th May, 2022.




30/05/22
Officer-in-Charge
GGDC, Mangalkote

OFFICER IN CHARGE, W.B.E.S.
Government General Degree College, Mangalkote
Dt. Purba Bardhaman, West Bengal- 713132





Dr. Pradyota Kumar Bhowmik
OFFICER IN CHARGE, W.B.E.S.
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