

Studies on the Isotherm, Kinetics and Thermodynamic Aspects of Dye Adsorption from Aqueous Solution by Using Layered Double Hydroxide Based Sorbents

**A Thesis**

Submitted to Bodoland University for the Degree of Doctor of Philosophy in the Department of Chemistry under the Faculty of Science and Technology



**Submitted by**  
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**2025**

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## Declaration

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I, **Deepmoni Brahma**, do hereby, declare that the thesis entitled *Studies on the Isotherm, Kinetics and Thermodynamic Aspects of Dye Adsorption from Aqueous Solution by Using Layered Double Hydroxide Based Sorbents* is the result of my own research work, which has been carried out under the supervision of Dr. Hemaprobha Saikia, Assistant Professor, Department of Chemistry, Bodoland University. Also, I would like to declare that neither the thesis nor any part thereof has been submitted to any other University/Institution for a research degree/ diploma.

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*Certificate*

This is certified that Mr. Deepmoni Brahma, a research scholar at Department of Chemistry, Bodoland University, has carried out this research work, entitled **“Studies on the Isotherm, Kinetics and Thermodynamic Aspects of Dye Adsorption from Aqueous Solution by Using Layered Double Hydroxide Based Sorbents”** for his Doctor of Philosophy degree under my supervision.

To the best of my knowledge, this work in the present form or in part in any other form has not been submitted anywhere for an award of any degree.

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## *Dedication*

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This research work is dedicated to my family members, whose unconditional love and support served as the motivating force behind my academic endeavours. His/her encouragement and faith in me have been a continuous source of motivation and inspiration, and I will be eternally grateful for his or her advice and expertise.

I would also like to dedicate this work to my mentor, professors and colleagues, whose expertise and assistance have helped shape my research abilities and knowledge. His or her guidance has been crucial to my career and educational growth.

Finally, I would like to devote my research to everyone who has been influenced by the subject of this study. I believe that this work will help to increase knowledge and understanding of this research field, resulting in positive change and progress.

Lastly, we appreciate you all for your continuous support and encouragement during this research work.

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