

**Title of the Event:** Exposure visit and hands on training in analytical and clinical diagnostic techniques.

**Venue:** d-Midas Diagnostics, Nalbari, Assam - 781335

**Date:** 28/04/2022

**Program/event coordinator:** Dr. Purabi Sarmah, Assistant Professor, Department of Chemistry, Nalbari College, Nalbari.

**Nature of participant:** Undergraduate students of Department of Chemistry, Nalbari College, Nalbari.

### **Activity carried out/Detailed description of the event:**

This report outlines the activities and outcomes of the exposure visit and hands-on training program for undergraduate chemistry students at Nalbari College. The program, held at d-MidasDiagnostics, aimed to enhance students' practical skills, and understanding of modern analytical and clinical diagnostic techniques.

- To provide real-world exposure to clinical laboratory environments.
- To offer hands-on training with advanced diagnostic equipment and methodologies.
- To bridge the gap between theoretical knowledge and practical application in the field of diagnostics.

### **Activities Conducted**

#### **1. Laboratory Tour**

- **Introduction to Laboratory Setup:** Students were given a comprehensive tour of the d-Midas Diagnostics facility. They observed the organization of different laboratory sections, including hematology, biochemistry, microbiology, and molecular diagnostics.
- **Workflow Demonstration:** Demonstrations of the workflow for various diagnostic tests, from sample collection and preparation to analysis and reporting.

#### **2. Hands-On Training Sessions**

##### **Analytical Techniques:**

**Spectrophotometry:** Training on the use of spectrophotometers for quantitative analysis of biochemical substances.

**Chromatography:** Practical sessions on thin-layer chromatography (TLC) and high-performance liquid chromatography (HPLC) techniques.

**Electrophoresis:** Demonstrations and hands-on practice with gel electrophoresis for the separation and analysis of proteins and nucleic acids.

##### **Clinical Diagnostic Techniques:**

**Blood Tests:** Training on complete blood count (CBC) using automated hematology analyzers.

**Urinalysis:** Practical sessions on urine sample analysis, including dipstick testing and microscopic examination.

**Microbiological Cultures:** Techniques for culturing and identifying microorganisms from clinical samples.

### **Advanced Diagnostic Equipment:**

**PCR Machines:** Introduction to polymerase chain reaction (PCR) techniques for DNA amplification and hands-on practice.

**Automated Analyzers:** Training on the operation of automated biochemical analyzers for various clinical tests.





**Memorandum of Understanding  
between  
DEPARTMENT OF CHEMISTRY, NALBARI COLLEGE  
P.O. - NALBARI, DIST. - NALBARI, ASSAM, INDIA, PIN - 781335  
AND  
d-MidasDIAGNOSTICS, NALBARI, ASSAM, INDIA, PIN - 781335.**

This memorandum of understanding is made and executed on 10/03/2022 for 05 years from 10/03/2022 to 09/03/2027 between the Department of Chemistry, Nalbari college, P.O. Nalbari, Dist. Nalbari, Assam, India, PIN - 781335 and the d-Midas Diagnostics, Nalbari, Assam, India, PIN - 781335.

**Preamble**

Nalbari College, Nalbari is one of the premier higher educational institutions in Assam. The institution is established in pre-independent India on 4<sup>th</sup> July 1945. From its establishment onwards, the college has taken a pioneering role in shaping and promoting higher education in the entire lower Brahmaputra valley. The Department of Chemistry is one of the oldest departments of the institute. This is one of the premier departments of the college that consistently demonstrated excellence in academic and research pursuits.

d-Midas Diagnostics in Nalbari is one of the leading businesses in the Radiology, Microbiology, and Pathology Labs and diagnostics centre. The centre plays a crucial role in healthcare by providing essential diagnostic information that guides treatment and preventive measures in lower Assam.

Both parties have been working on applied research in life science and health care. The Chemistry department of Nalbari College, Nalbari and d-MidasDiagnostics, Nalbari would be mutually supportive in the clinical diagnostic based research work.

Department of Chemistry, Nalbari College, and d-MidasDiagnostics, Nalbari, hereinafter collectively referred to as the parties/institutions, and individually as party/institution.

**Objectives**

1. Incorporate practical, hands-on training for chemistry students in analytical and clinical diagnostic techniques and laboratory procedures.
2. Collaborate on updating and enhancing the curriculum to include contemporary diagnostic methodologies and technologies.
3. Facilitate internship programs for chemistry students at the clinical diagnostic laboratory to gain practical experience and industry exposure.
4. Offer training sessions, workshops, and seminars by laboratory professionals to students and faculty to keep them abreast of the latest advancements in clinical diagnostics.

There will be no financial obligations on both parties under this agreement.

**General Coordinators:**