Foreword by **Dr Tunji Alausa**
Honourable Minister of Education

NATIONAL UNIVERSITIES COMMISSION

Africa Centres of Excellence

KEY ACHIEVEMENTS AND IMPACTS OF THE AFRICA CENTRES OF EXCELLENCE (ACE) PROJECT IN NIGERIA

Volume 4

Directory of Equipment in ACE Centres in Nigeria

Compiled by
Professor Abdullahi Yusufu Ribadu
Executive Secretary, National Universities Commission
and
Dr. Joshua A Atah
National Coordinator, Africa Centres of Excellence

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National Universities Commission
Abuja

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26 Aguiyi Ironsi Street
Abuja.
www.nuc.edu.ng
www.ace.edu.ng

ISBN: 978-978-698-137-6



HIS EXCELLENCY

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INTRODUCTION

It is with immense pride that I present Volume 4 of our landmark publication series, "*Key Achievements and Impacts of the Africa Centres of Excellence (ACE) Project in Nigeria*," which is a Directory of Equipment in Nigeria's ACEs. This edition provides a comprehensive inventory of the state-of-the-art equipment and facilities that have been instrumental in transforming Nigeria's higher education and research landscape under the ACE Project.

Since its launch, the ACE Project, which is an initiative supported by the World Bank (and co-funded by the Agence Francaise de Developpement in its second phase) and the Federal Government of Nigeria, has prioritised the modernisation of research infrastructure as a cornerstone for achieving excellence in science, technology, engineering, mathematics, education, health, agriculture, and other critical sectors. By equipping our Centres of Excellence with cutting-edge tools and technologies, we have not only enhanced the quality of teaching and research but also positioned Nigeria as a regional hub for innovation and specialised knowledge.

This volume serves as a detailed catalogue of the advanced equipment available across Nigeria's ACEs, detailing their locations and the contact information of the host universities. It also highlights:

- High-impact technologies enabling groundbreaking research in fields such as genomics of infectious diseases, renewable energy, biomedical sciences, and environmental sustainability, among others.
- Shared facilities that promote collaboration among researchers, industries, and institutions, optimising resource utilisation and fostering interdisciplinary innovation.
- Capacity-building tools that empower students and faculty to develop technical expertise and compete globally.

The investments documented in this directory underscore the ACE Project's commitment to bridging the infrastructure gap in African higher education. By providing researchers with the tools they need to excel, we are catalysing discoveries that address local and global challenges, from infectious diseases to climate change.

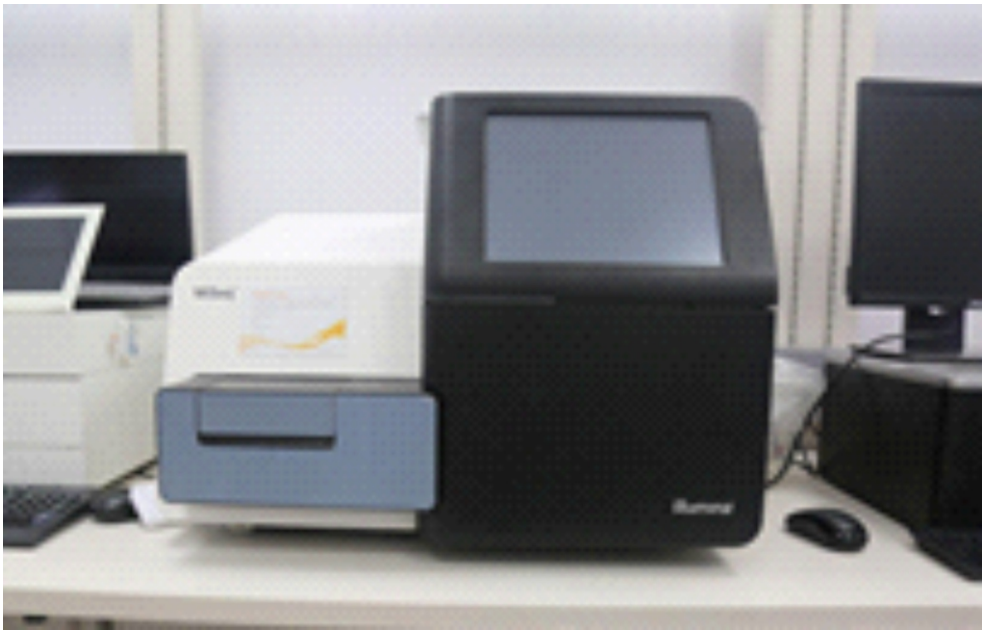
I extend my deepest gratitude to the Federal Government of Nigeria and the National Universities Commission (NUC), our donors, World Bank and AFD, and the leadership of our ACE Centres and host institutions for their unwavering support in acquiring and maintaining these vital resources. Special recognition goes to the technical teams and facility managers within the ACEs whose dedication ensures these equipment serve their full potential.

As we look to the future, this directory will serve as a valuable resource for policymakers, researchers, and international partners seeking to leverage Nigeria's research capabilities. It is a testament to what strategic investment in education and infrastructure can achieve - propelling Nigeria and Africa toward a knowledge-driven future.

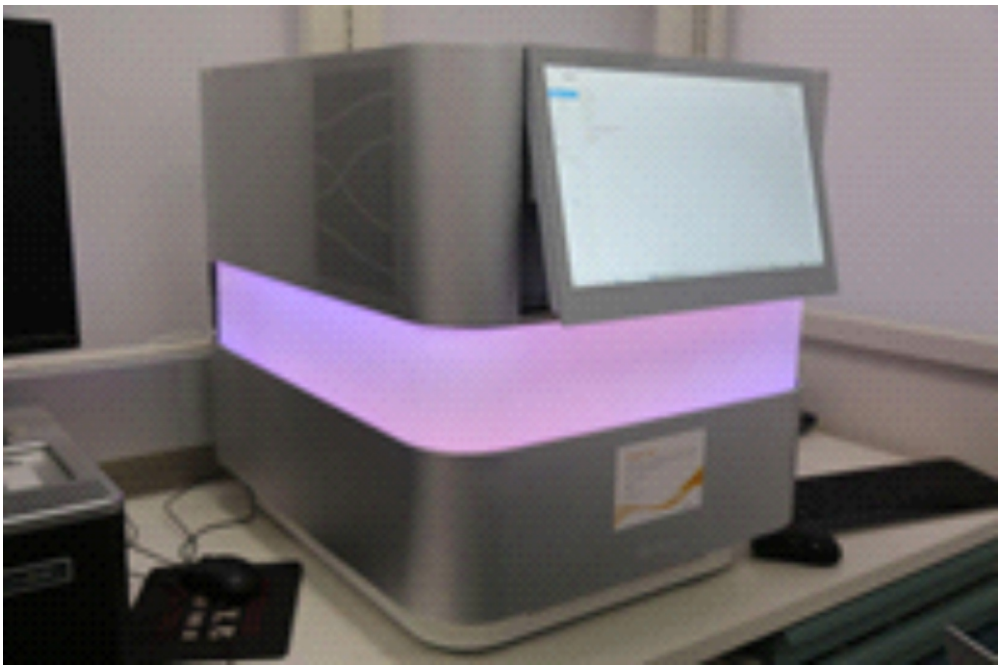
Dr Joshua Atah
National Project Coordinator/Focal Point
ACE Project, Nigeria

REDEEMERS UNIVERSITY

CENTRE OF EXCELLENCE FOR GENOMICS OF INFECTIOUS DISEASES (ACEGID)



Illumina Miseq Sequencing system
High throughput next generation sequencing system



Illumina Nextseq2000 Sequencing system
High throughput next generation sequencing system



Illumina NovaseqX Plus Sequencing system
High throughput next generation sequencing system



Hamilton Automation System
High throughput liquid handling for PCR and library preparation



PacBio Sequel Ile Sequencing System
High throughput Long read Sequencing



ONT GridIon
Long read sequencing



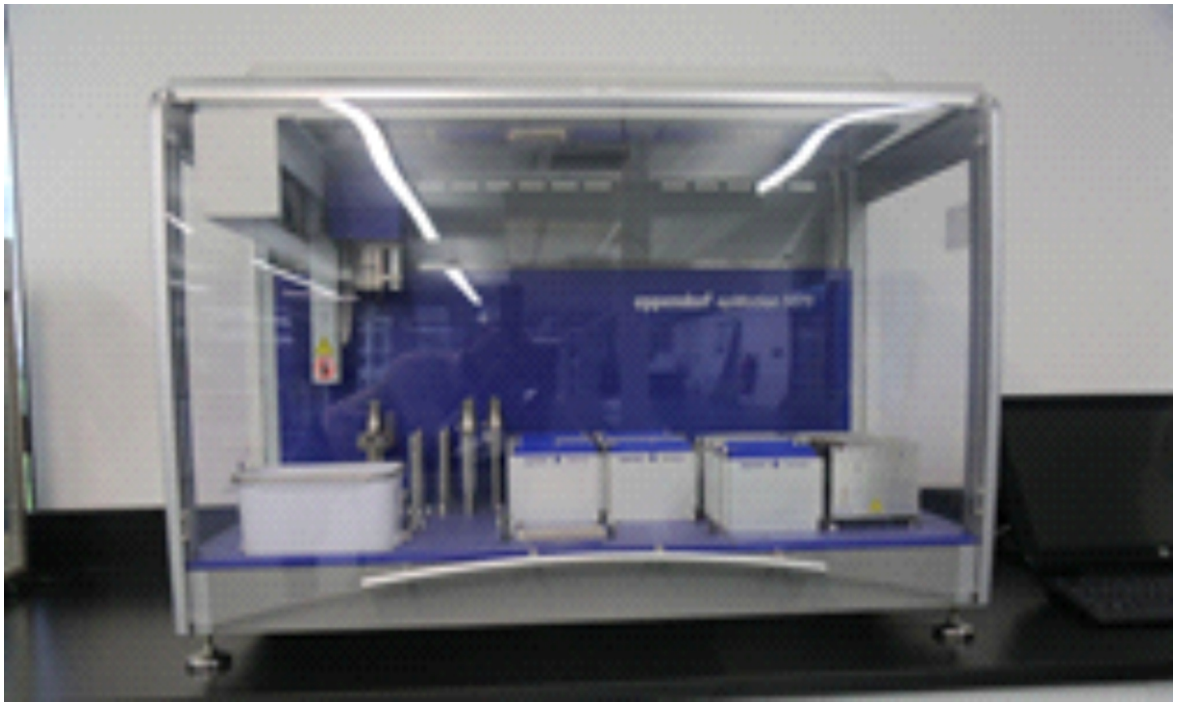
Applied Biosystems Genetic Analyser
For DNA amplicon sequencing



Thermal Cyclers
For Nucleic Acid Amplification



MIC PCR system
For quantitative amplification of nucleic acid



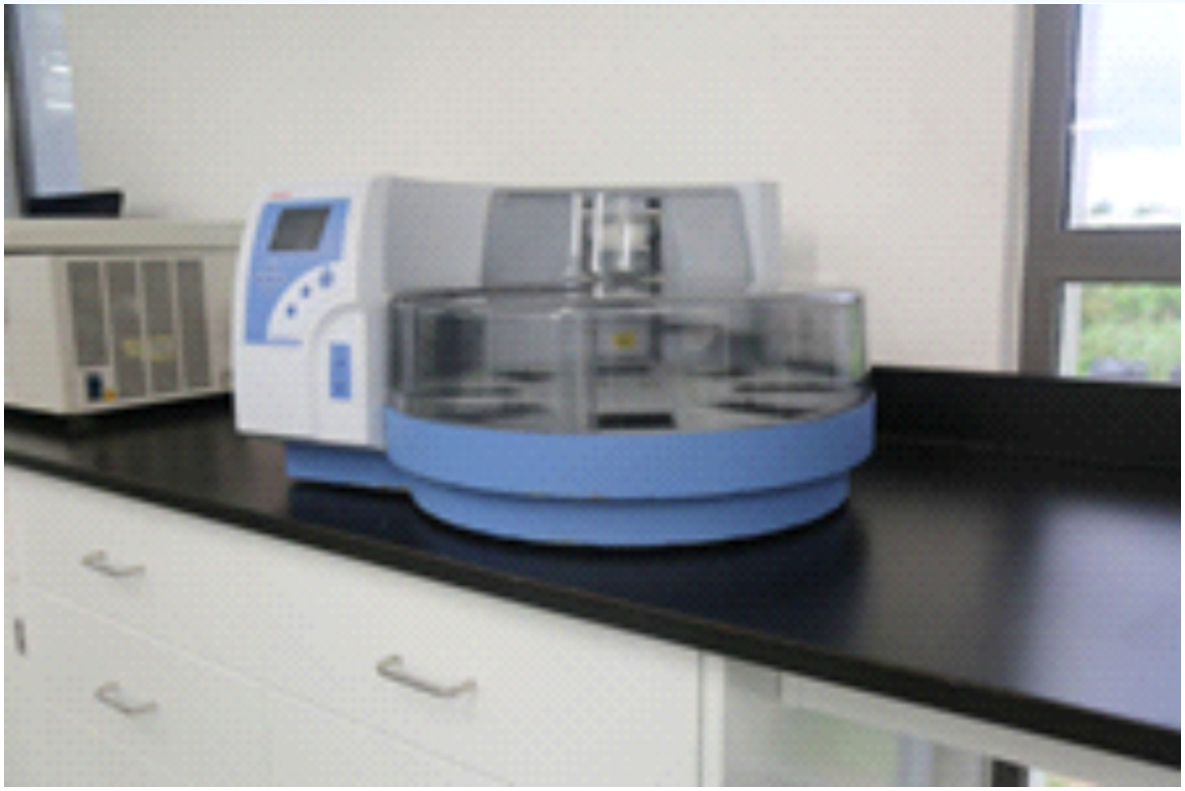
epMotion liquid handling
for handling liquid for the nucleic acid extraction, amplification and library preparation for sequencing.



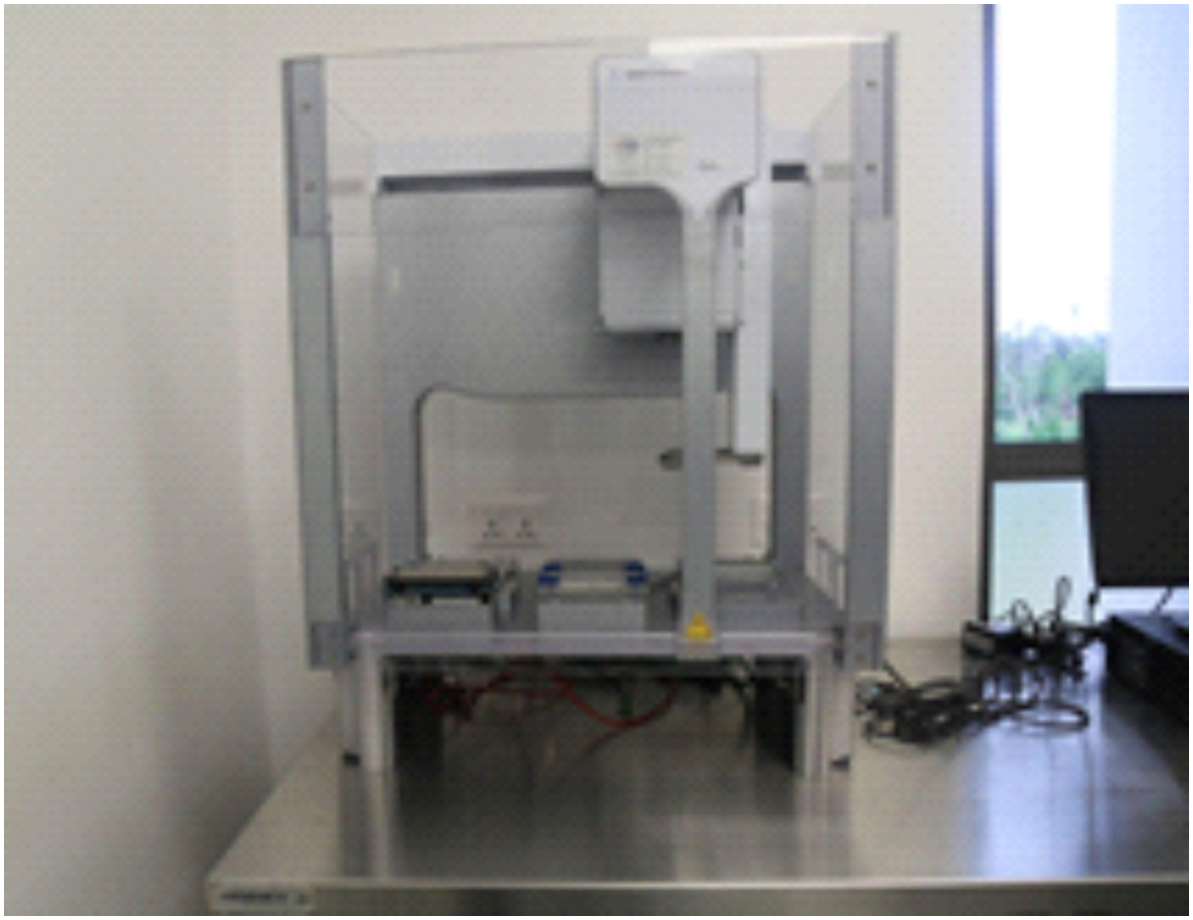
Chromium 10X Genomics system
For single cell sequencing



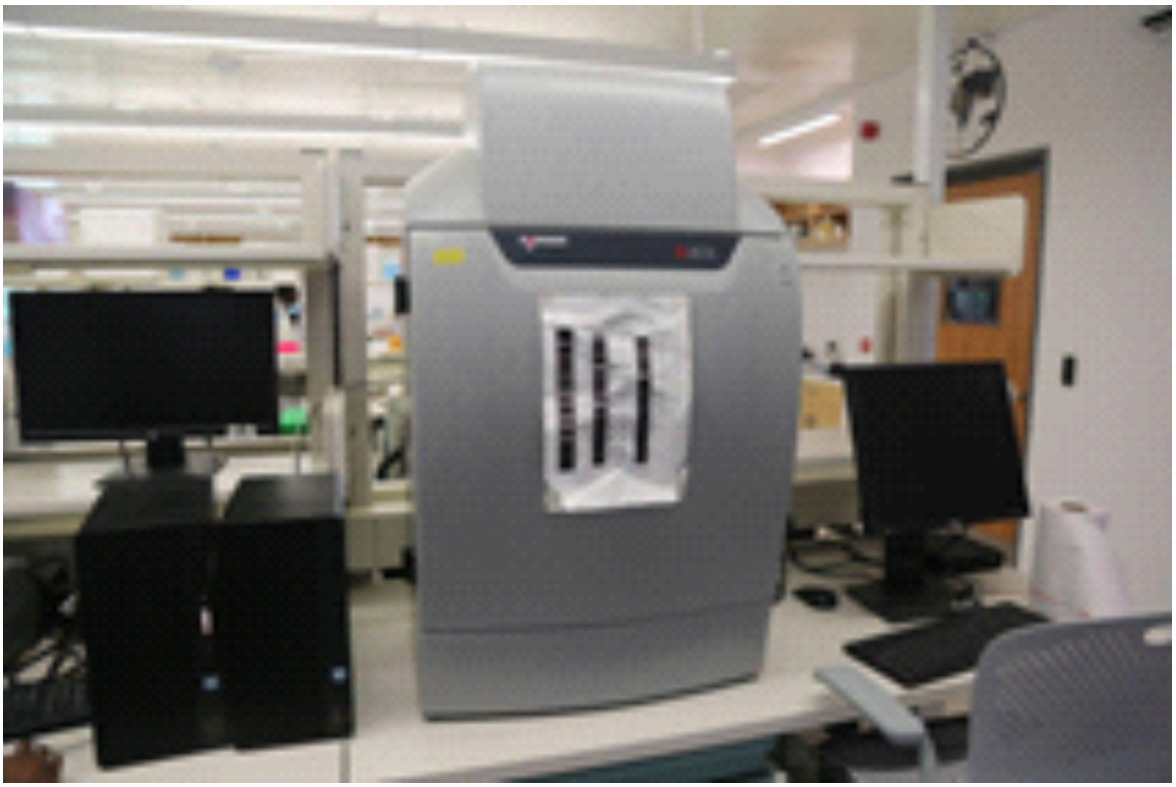
Luminex's xMAP Technology
To perform multiplex immunoassays



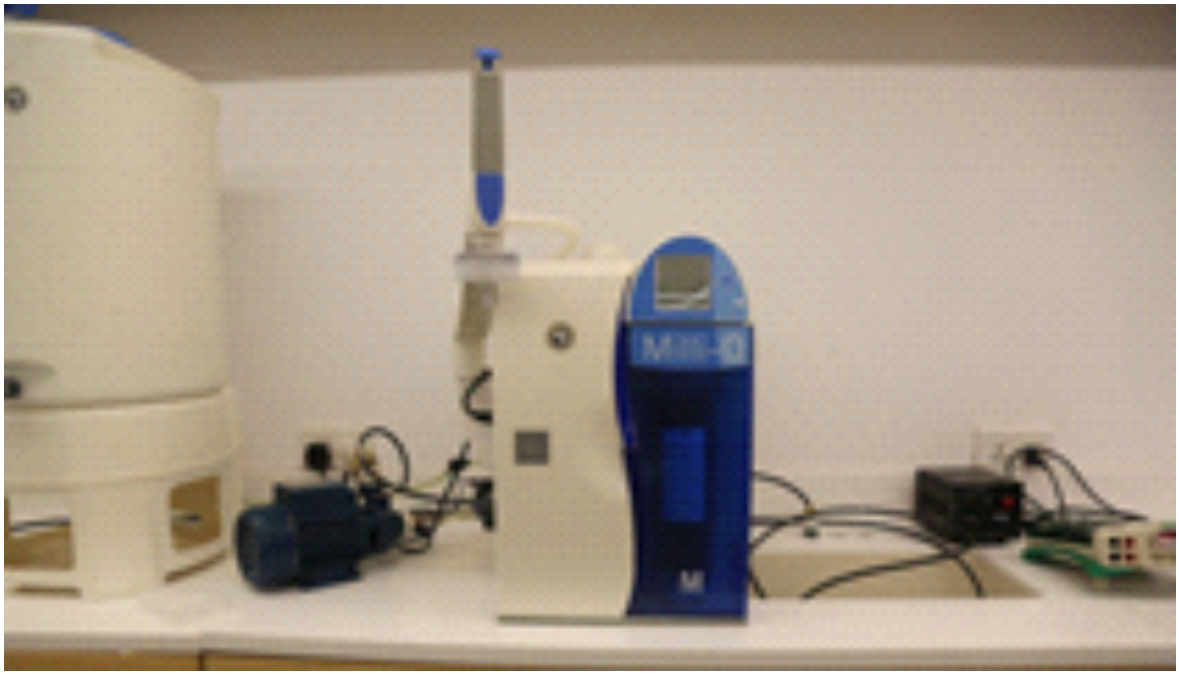
King Fisher automation system
Robot for liquid handling for high throughput processes



Agilent Bravo system
Robot for liquid handling for high throughput processes



G-Box documentation Device
Gel documentation system



MilliQ water purification system
Water purification system suitable for molecular analysis

AHMADU BELLO UNIVERSITY

CENTRE OF EXCELLENCE FOR NEGLECTED TROPICAL DISEASES AND FORENSIC BIOTECHNOLOGY (ACENTDFB)



Power Source For Electrophorisis
NANOPAC 300P
Cleaver Scientific
General Lab, CBRT, ABU Zaria



Electrophoresis tank
Cleaver Scientific
Seperation of Nucleic Acid
General Lab, CBRT, ABU Zaria



Nano Drop one
Thermo Scientific
Quantification of Nucleic Acid
General Lab, CBRT, ABU Zaria

10



Haematospin
Hawkley
Determine Red Cell Pack Volume
General Lab, CBRT, ABU Zaria



Benchtop meter
Sper Scientific
Determine Turbidity
General Lab, CBRT, ABU Zaria



Spectrophotometer
Lamotte
Measures Light Absorption
General Lab, CBRT, ABU Zaria



Weighing balance
Ohaus
Measures Wieght
General Lab, CBRT, ABU Zaria



Centrifuge
Ohaus
Separate Substances By Density
General Lab, CBRT, ABU Zaria



Gel Documentation Chamber
Vilber
Gel Visualization
General Lab, CBRT, ABU Zaria



Thermal Cycler
Multigene
Ampilication of Nucleic Acids
General Lab, CBRT, ABU Zaria



Thermal Cycler
Cleaver
Ampilication of Nucleic Acids
General Lab, CBRT, ABU Zaria



Centrifuge
KJLC
Ampilication of Nucleic Acids
General Lab, CBRT, ABU Zaria



Orbital incubator
Stuart
Growing Microbial Cultures
General Lab, CBRT, ABU Zaria



Laminar Flow
Biobase
Creates Contaminats Work Free Enviroment
General Lab, CBRT, ABU Zaria



Mini Spin
Corning
Separate Substances By Density
COVID Lab, CBRT, ABU Zaria





Autoclave
Tuttnauer
For Sterilization
COVID Lab, CBRT, ABU Zaria



Centrifuge
Ohaus
Separate Substances By Density
COVID Lab, CBRT, ABU Zaria



Digital vortex mixer
Phoenix
Mixes Small Volumes of Liquid
COVID Lab, CBRT, ABU Zaria



Class 11 cabinet
BIOBASE
Creates Contaminats Work Free Enviroment
COVID Lab, CBRT, ABU Zaria



Sample Heating
Dry bath
Covet
COVID Lab, CBRT, ABU Zaria



PCR workstation
Creates Contaminats Work Free Enviroment
COVID Lab, CBRT, ABU Zaria



QPCR with system
Biorad
Ampilication of Nucleic Acids
COVID Lab, CBRT, ABU Zaria



Ultra-low freezer
Haier
For Safe Storage of Samples
COVID Lab, CBRT, ABU Zaria



Freezer
Newcastle
For Safe Storage of Samples
COVID Lab, CBRT, ABU Zaria



Creates Contaminats Work Free Enviroment
Class II BSC ESCO
COVID Lab, CBRT, ABU Zaria



For Safe Storage of Samples
Freezer
Scan frost
COVID Lab, CBRT, ABU Zaria



Microscope
Labomed
Magnification of Objects
Diagnostic Lab, CBRT, ABU Zaria





Microscope
ZEISS Primovert
Magnification of Objects
Diagnostic Lab, CBRT, ABU Zaria



Eporator
Eppendorf
Electroporation of Bacteria
Diagnostic Lab, CBRT, ABU Zaria



Sigma
Centrifuge
Separate Substances By Density
Diagnostic Lab, CBRT, ABU Zaria



Tissue lyser
Shanghai indust ltd
Disruption of Biological Samples
Diagnostic Lab, CBRT, ABU Zaria



Fridge
samsung
For Safe Storage of Samples
Diagnostic Lab, CBRT, ABU Zaria



Elisa plate Reader
Global Diagnostics B
Detect And Qauntify Substances
Diagnostic Lab, CBRT, ABU Zaria



Elisa plate washer
Global Diagnostics B
Washing Elisa Plates
Diagnostic Lab, CBRT, ABU Zaria



Biochemistry analyser
Global Diagnostics B
Analyze Copounds in Biological Samples
Diagnostic Lab, CBRT, ABU Zaria



Freezer
Scan frost
For Safe Storage of Samples
Diagnostic Lab, CBRT, ABU Zaria



Microwave Oven
Hisense
For Heating Samples
Diagnostic Lab, CBRT, ABU Zaria



PCR
multigene
Ampilication of Nucleic Acids
Diagnostic Lab, CBRT, ABU Zaria



PCR (gradient)
Eppendorf
Ampilication of Nucleic Acids
Diagnostic Lab, CBRT, ABU Zaria



Milliplex
Xmap tech
Used For Miltiplex Immunoassays
Diagnostic Lab, CBRT, ABU Zaria



Heating block
Ziath
Sample Heating
P3 Lab, CBRT, ABU Zaria



Votexer
Phoenix
Mixes Small Volumes of Liquid
P3 Lab, CBRT, ABU Zaria



Neuation
mini centrifuge
Separate Substances By Density
P3 Lab, CBRT, ABU Zaria



P3 Lab, CBRT, ABU Zaria
Real time PCR
Bider
Ampilication of Nucleic Acids



class II BSC
ESCO
Creates Contaminats Work Free Enviroment
P3 Lab, CBRT, ABU Zaria



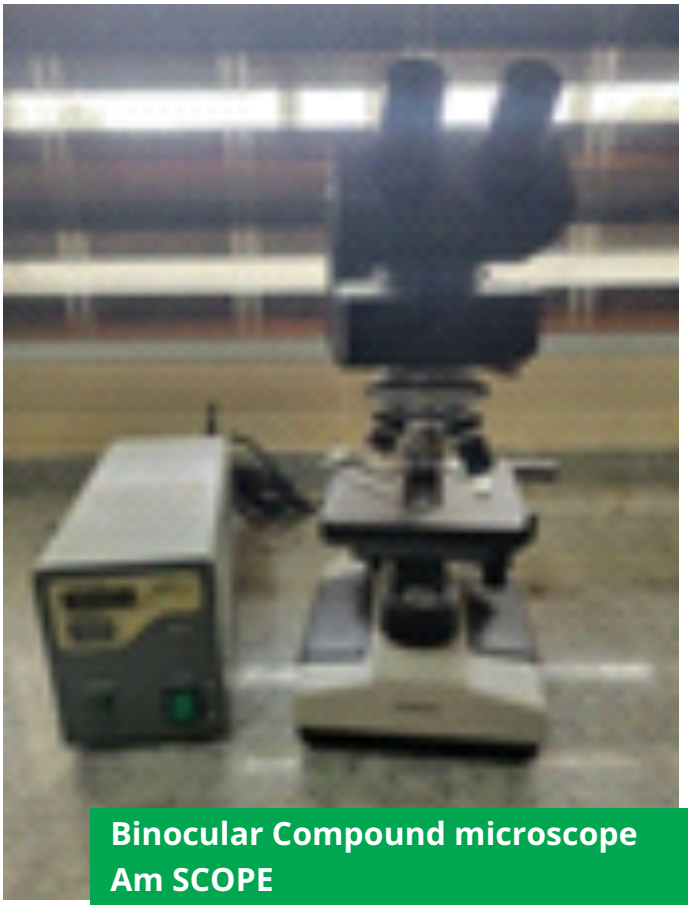
DNA/RNA UV-Cleaner
Biosan
Creates Contaminats Work Free Enviroment
P3 Lab, CBRT, ABU Zaria



Class III BSC
ESCO
Creates Contaminats Work Free Enviroment
P3 Lab, CBRT, ABU Zaria



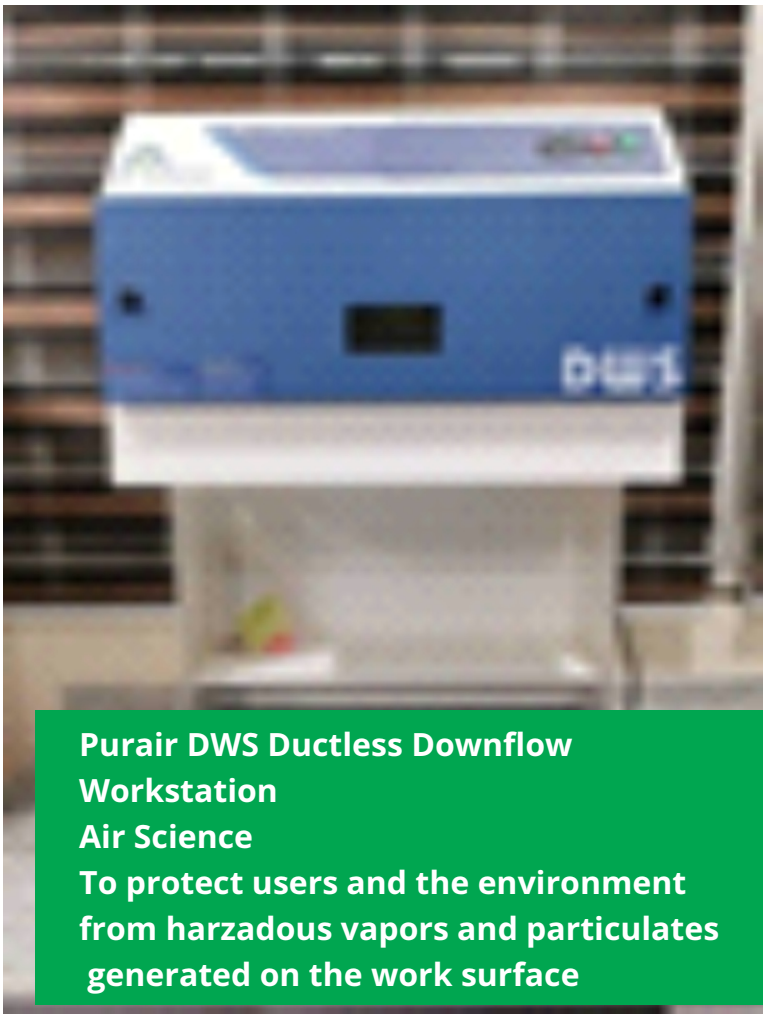
Forensic Lab, ACENTDFB, ABU Zaria
Ballistic comparison microscope
BestScope
Analysis of Ballistic Evidence



Binocular Compound microscope
Am SCOPE
Magnification of Objects
Forensic Lab, ACENTDFB, ABU Zaria



SafeFUME Cyanoacrylate Fume chambers with stand
Air Science
To safely develop latent fingerprints using methylcyanoacrylate vapor in a controlled environment
Forensic Lab, ACENTDFB, ABU Zaria



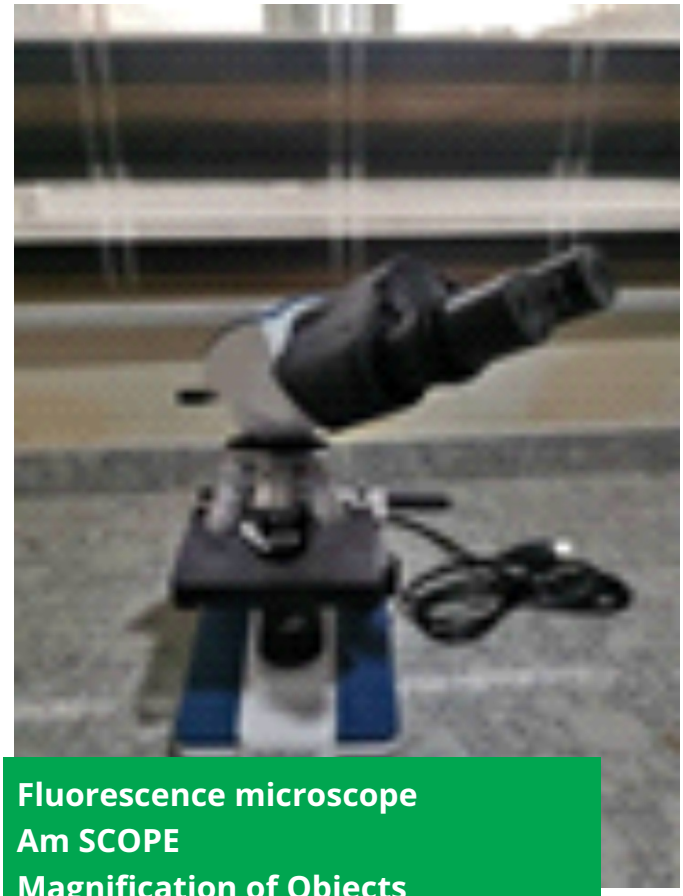
Purair DWS Ductless Downflow Workstation
Air Science
To protect users and the environment from harzadous vapors and particulates generated on the work surface



Bench top centrifuge
Fisherbrand
Separate Substances By Density
Forensic Lab, ACENTDFB, ABU Zaria



Evidence drying cabinet
Air Science
Storage And Drying Evidence
Forensic Lab, ACENTDFB, ABU Zaria



Fluorescence microscope
Am SCOPE
Magnification of Objects
Forensic Lab, ACENTDFB, ABU Zaria



Compound Microscope
Am SCOPE
Magnification of Objects
Forensic Lab, ACENTDFB, ABU Zaria



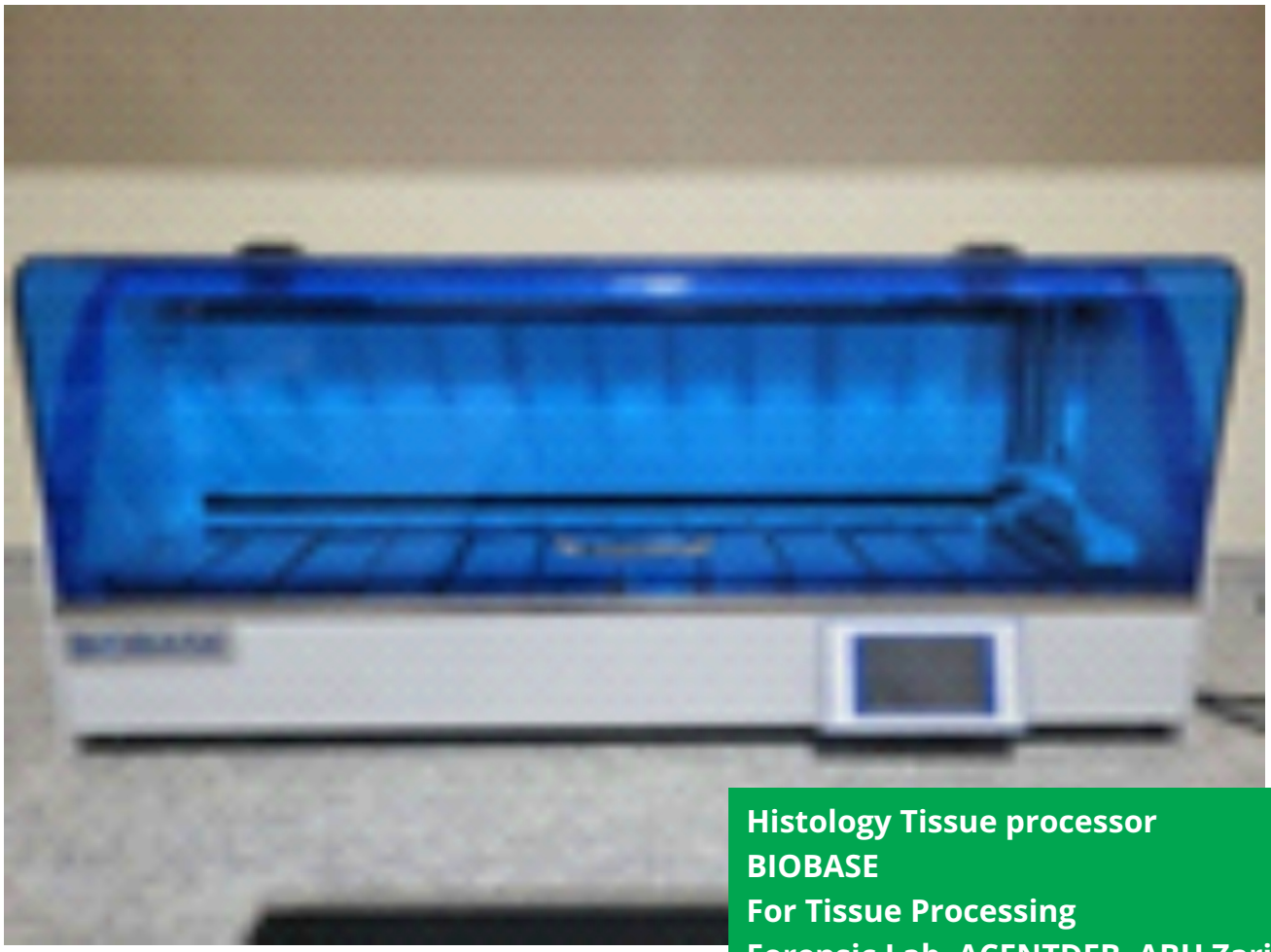
Evidence Detection
Forensic light source
HD international
Forensic Lab, ACENTDFB, ABU Zaria



Footwear/tire tract, Milu L10 plus
HD international
Tracking Foot/Tire
Forensic Lab, ACENTDFB, ABU Zaria



BIOBASE
Hematocrit centrifuge
Deternmine Red Cell Pack Volume
Forensic Lab, ACENTDFB, ABU Zaria



Histology Tissue processor
BIOBASE
For Tissue Processing
Forensic Lab, ACENTDFB, ABU Zaria



Kolari Forensics
Forensic photography
Documentation of Crime Scene
Forensic Lab, ACENTDFB, ABU Zaria



Automated Nucleic Acid Extractor
Life River
Extraction of Nucleic Acids
Forensic Lab, ACENTDFB, ABU Zaria



Forensic Lab, ACENTDFB, ABU Zaria
Ultra-low freezer
Eppendorf
For Safe Storage of Samples



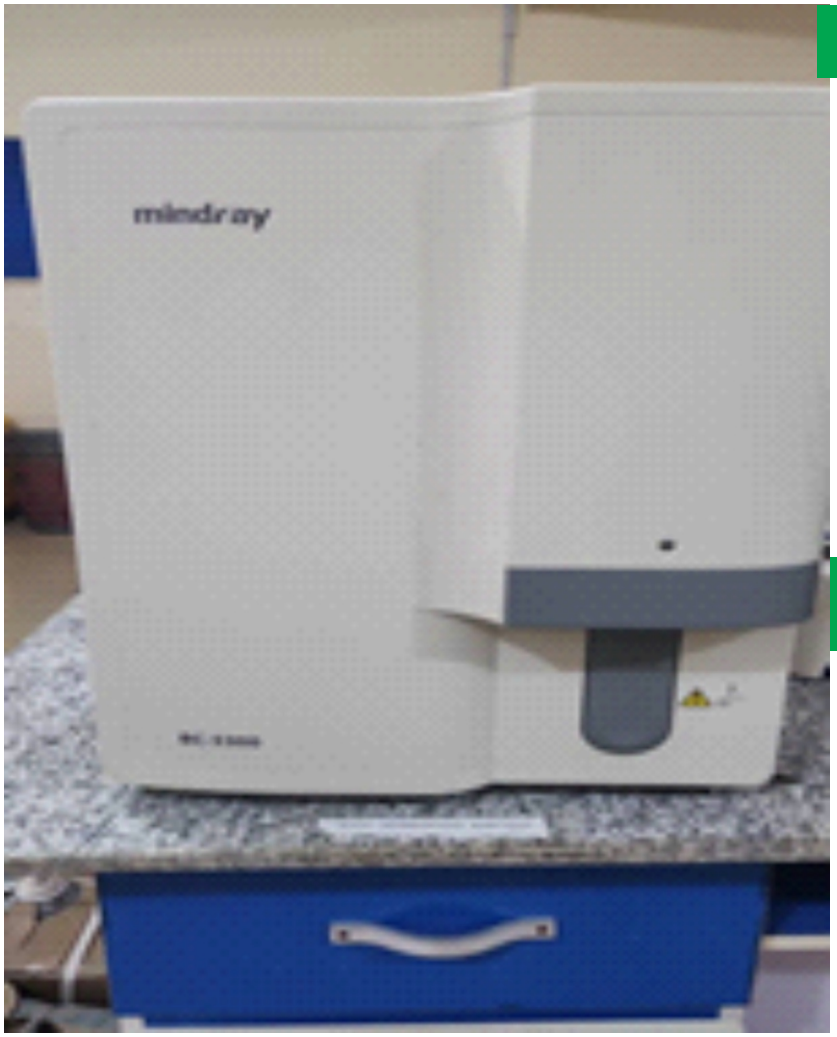
1 Super Desktop Computer
AMD Ryzen 9 Processor, 64GB RAM, 2TB SSD + 2TB HDD, NVIDIA RTX 3050
As a server for bioinformatics-related researches
Computer Lab, ACENTDFB, ABU Zaria



AMD Ryzen 7 Processor, 32GB RAM, 1TB SSD+ 1TB HDD, NVIDIA RTX 3060
5 Super Desktop Computers
As clients for bioinformatics-related researches
Computer Lab, ACENTDFB, ABU Zaria

UNIVERSITY OF BENIN, BENIN-CITY

CENTRE OF EXCELLENCE FOR REPRODUCTIVE HEALTH INNOVATION (CERHI) CERHI, UNIBEN EQUIPMENT LIST



AUTO HEMATOLOGY ANALYZER

CERHI BIOCHEMICAL LABORATORY

An **Auto Hematology Analyzer** is an advanced diagnostic instrument used to **perform complete blood counts (CBCs)** and other hematologic tests automatically. It provides **quantitative and qualitative analysis** of blood components such as **red blood cells (RBCs), white blood cells (WBCs), hemoglobin (HGB), platelets (PLT),** and various cell indices.

ELECTROTHERMAL INCUBATOR



An **Auto Electrothermal Incubator** is a laboratory device used to **create and maintain a controlled environment** of constant temperature to promote **biological or chemical reactions,** commonly for the incubation of **microbial cultures, biochemical reactions, or tissue samples.** It utilizes **electrical heating elements** (electrothermal system) for precise thermal regulation.

Applications in the Biochemical Laboratory:

- Incubation of **microorganisms** for identification and sensitivity testing
- **Enzymatic and biochemical reactions** require stable temperatures
- Cultivation of **bacteria, fungi, and cell lines**
- Incubation of reagents and media for **diagnostic assays**
- Use in **stability testing** and temperature-sensitive experiments

ELECTROTHERMAL OVEN



An Electrothermal Oven is a laboratory heating device that uses electric resistance heating elements to produce and maintain elevated temperatures for various drying, sterilizing, or thermal processing tasks. It is an essential piece of equipment in biochemical, microbiological, pharmaceutical, and research laboratories.

Unlike incubators, which operate at lower temperatures for biological reactions, electrothermal ovens are designed for higher temperature applications, usually in the range of ambient +10°C to 250–300°C**.**

Applications in the Biochemical Laboratory:

- Drying glassware and laboratory instruments after washing
- Sterilization of non-heat-sensitive materials (e.g., metal instruments, glass)
- Dehydration of samples (plant, soil, or biochemical)
- Evaporation of solvents or concentration of samples
- Heat treatments or preheating of chemicals for biochemical experiments
- Curing or annealing materials in experimental procedures



FLOW-CYTOMETRE

A flow cytometer is an advanced analytical instrument used in biochemical laboratories for cell counting, cell sorting, biomarker detection, and protein engineering, by suspending cells in a stream of fluid and passing them by an electronic detection system. Below is a detailed description of a typical flow cytometer**,** including its components, working principles, applications**,** and specifications.

Applications in the Biochemical Laboratory

- **Immunophenotyping** – Classification of immune cells (e.g., T-cells, B-cells).
- **Apoptosis analysis** – Detecting early and late apoptotic cells.
- **Cell cycle analysis** – Determining DNA content to assess cell proliferation.
- **Intracellular cytokine staining** – Measuring cytokine expression.
- **Microbial analysis** – Differentiating bacterial populations.
- **Stem cell research** – Identifying and sorting stem/progenitor cells.
- **Clinical diagnostics** – Leukemia, HIV, and immunodeficiency disorders.

ISOTEMP BASIC



Isotemp General Purpose Water Baths are rugged, high-performance baths that are designed to maintain water temperature from ambient to 100°C.

Ideal for a wide range of lab applications, capacities range from 2 L to 28 L, including shallow models.

Over-temperature safety circuitry is designed to prevent thermal runaway, while the new auto-off timer allows you to optimize operation schedules.

Benefit from outstanding chemical and corrosion resistance with epoxy powder-coated exterior, and easily clean the chamber with its seamless stainless-steel interior.

Removable cover lifts to 90° stay-open position or can be removed completely by a quick release to accommodate large glassware.

Each bath includes a diffuser tray and a polycarbonate lid (Stainless steel covers are available as accessories for all models).



LABORATORY CENTRIFUGE

A laboratory centrifuge is a fundamental device in biochemical, clinical, and research laboratories used to separate components of a mixture based on density by spinning samples at high speeds. Here is a comprehensive and detailed description of a laboratory centrifuge used in a biochemical laboratory.

Applications in the Biochemical Laboratory

- **Cell harvesting** – Isolating cells from culture media.
- **Protein precipitation** – Separating proteins from solution.
- **Nucleic acid purification** – Spinning DNA or RNA from lysates.
- **Organelle isolation** – Mitochondria, lysosomes, and nuclei separation.
- **Blood component separation** – Plasma, serum, and buffy coat isolation.
- **Virus purification** – Especially using ultracentrifuges.



MICROPLATE READER

A **microplate reader** (also called a **plate reader or ELISA reader**) is an essential analytical instrument in biochemical laboratories used for **quantitative detection of biological, chemical, or physical events in microplate format (96-well, 384-well, etc.).** It automates and streamlines assays such as ELISA, protein quantification, enzyme kinetics, nucleic acid quantification, and cell viability.

Applications in the Biochemical LaboratoryApplicationPurposeELISA (enzyme-linked immunosorbent assay) Quantifying proteins, hormones, antibodies, and antigens**Protein concentration (Bradford, BCA)**Measuring total protein**Nucleic acid quantification**DNA/RNA concentration via absorbance**Enzyme kinetics**Time-dependent reaction monitoring**Cell proliferation/cytotoxicity**MTT, XTT, and AlamarBlue assays**Reporter gene assays**Luciferase, β-galactosidase activity**Binding assays**Receptor-ligand interactions**Pathogen detection**Through colorimetric or fluorescent assays



MICROSCOPE

In a biochemical laboratory, **microscopes** are essential tools for observing small-scale biological and chemical processes, such as cellular structures, microorganisms, protein crystals, and subcellular components.
A light microscope uses visible light and a series of lenses to magnify samples. It's the most common type of microscope in biochemical labs, especially for observing stained tissue samples, cells, and microorganisms.



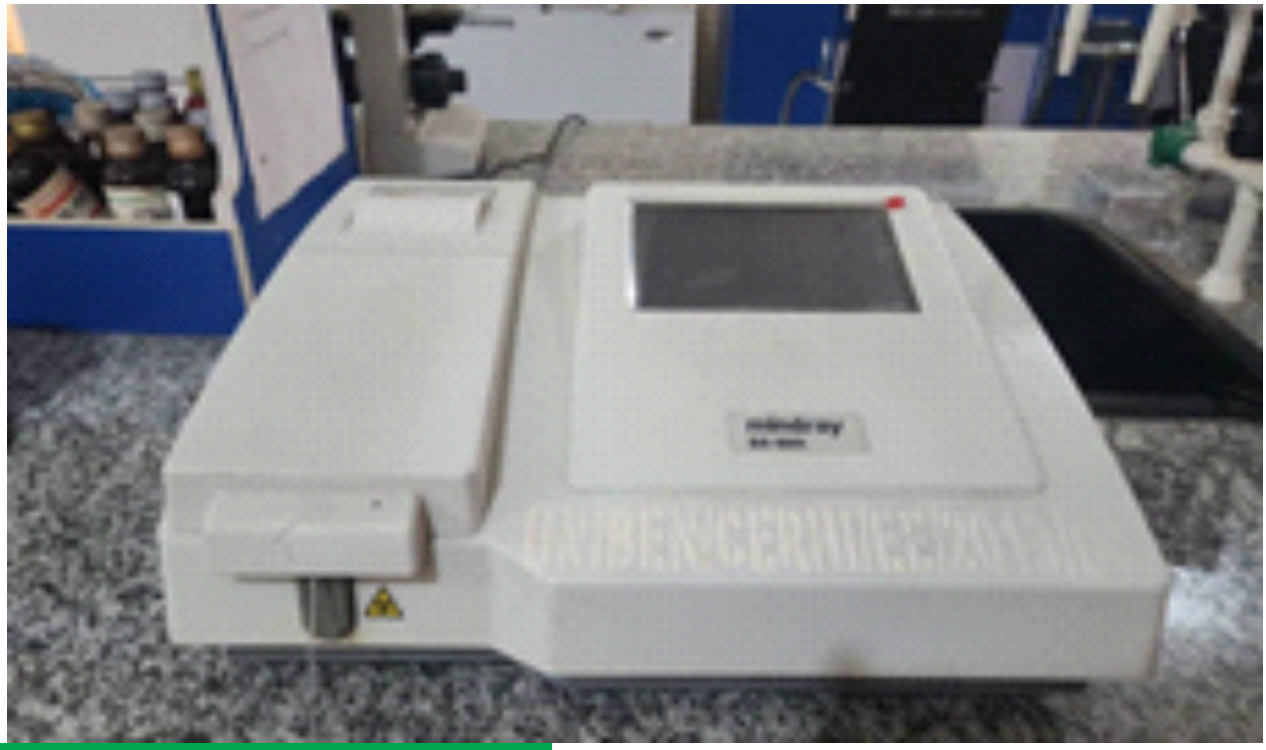
REFRIGERATOR

In a biochemical laboratory, a **refrigerator** plays a critical role in maintaining the integrity, stability, and viability of various biological samples and reagents. Unlike domestic refrigerators, laboratory refrigerators are specially designed for scientific use, offering precise temperature control, enhanced safety features, and proper storage conditions for sensitive materials.

Purpose and Applications

The laboratory refrigerator is used to store:

- Enzymes and antibodies
- Nucleic acids (DNA/RNA)
- Cell culture media and reagents
- Biological samples (blood, plasma, tissues, etc.)
- Pharmaceuticals and vaccines
- Chemicals requiring cool storage (e.g., temperature-sensitive buffers)



SEMI AUTO ANALYZER

A **Semi-Automatic Biochemistry Analyzer**, commonly referred to as a **Semi Auto Analyzer**, is an essential instrument in many biochemical and clinical laboratories. It is used for analyzing blood and other body fluids to assess various biochemical parameters such as glucose, cholesterol, liver enzymes, kidney function markers, and more.
It performs quantitative analysis of biochemical substances using colorimetric methods. It requires manual sample loading but automates the reading and calculation of results based on absorbance measurements.

Working Principle

The analyzer is based on the **Beer-Lambert Law**, which states that absorbance is directly proportional to the concentration of the analyte.

Basic Steps:

1. **Sample Preparation**: Blood serum or plasma is usually mixed manually with reagents.
2. **Loading**: The prepared sample-reagent mixture is placed in a cuvette.
3. **Measurement**: Light at a specific wavelength passes through the sample.
4. **Detection**: The photodetector measures the amount of transmitted light.
5. **Calculation**: Absorbance is calculated, and concentration is determined using a calibration curve or factor.



SPECTROMETER MASS

A mass spectrometer used in a biochemical laboratory is a highly sensitive analytical instrument designed to identify and quantify molecules based on their mass-to-charge ratio (m/z). It plays a crucial role in proteomics, metabolomics, drug development, and various biochemical analyses.

Applications in Biochemical Laboratories

1. **Proteomics**
    - Protein identification and quantification
    - Post-translational modification analysis
    - Protein–protein interaction mapping
2. **Metabolomics**
    - Profiling of small molecules
    - Disease biomarker discovery
    - Drug metabolism studies
3. **Lipidomics**
    - Analysis of lipid classes and species
    - Cellular lipid pathway elucidation
4. **Pharmacokinetics / Drug Discovery**
    - Tracking drug metabolites
    - Quantifying drug concentrations in biological matrices
5. **Genomics / Nucleic Acid Analysis**
    - Mass analysis of oligonucleotides and modified DNA/RNA



VARIOSKAN FLASH

The **Varioskan Flash** is a **multimode microplate reader** commonly used in **biochemical, molecular biology, and pharmaceutical laboratories** for high-throughput analysis. Manufactured by **Thermo Fisher Scientific**, it offers a wide range of detection technologies in one instrument, making it suitable for various biochemical assays.

Applications in the Biochemical Laboratory

- **Enzyme kinetics**
- **ELISA and immunoassays**
- **Nucleic acid and protein quantification**
- **Cell viability and cytotoxicity assays**
- **Reporter gene assays (e.g., luciferase, GFP)**
- **Receptor-ligand binding**

Drug screening and pharmacology



WATER BATH

A water bath is a fundamental piece of equipment in a biochemical laboratory, widely used for incubating samples at a constant temperature over time. It provides a controlled environment ideal for many biochemical reactions and processes.

Common Laboratory Applications

1. **Enzyme Reactions**
    - **Ideal for incubating enzymes at optimal temperature**
2. **Sample Incubation**
    - **For tubes, flasks, bottles requiring stable heat**
3. **Thawing/Rewarming Biological Samples**
    - **Safe, gentle thawing of DNA, RNA, proteins, cell cultures**
4. **Melting/Aggregation Studies**
    - **Useful in protein or nucleic acid melting temperature analysis**
5. **Media and Buffer Preparation**
    - **Dissolving and heating buffers or agar-based media**
6. **BOD (Biochemical Oxygen Demand) Tests**
    - **Used in environmental biochemistry labs**



WATER DISTILLER

A **water distiller** is a critical piece of equipment in a **biochemical laboratory**, used to produce **high-purity distilled water** by removing dissolved salts, organic matter, and other impurities through the process of **distillation.**
It is a laboratory instrument that **purifies water** by **boiling it**, then **condensing the steam** into a clean container, leaving **impurities and contaminants behind**. The result is **distilled water**, which is essential for sensitive biochemical experiments where impurities in tap water would interfere with results.

Applications in Biochemical Laboratories

1. **Reagent Preparation**
    - Prevents contamination in chemical and biochemical reagents
2. **Buffer and Media Preparation**
    - Ensures pH stability and accuracy of media components
3. **Cleaning of Glassware and Instruments**
    - Leaves no residue or ionic contamination on surfaces
4. **Sample Dilution**
    - Maintains consistency and avoids unwanted reactions
5. **Spectrophotometric and Analytical Work**
    - High-purity water is crucial for absorbance-based assays
6. **Autoclave Supply**
    - Used as feedwater for autoclaves to prevent scaling

BAYERO UNIVERSITY KANO

CENTRE OF EXCELLENCE FOR DRY LAND AGRICULTURE (CDA)

1. NEAR INFRARED SPECTROPHOTOMETER
2. MID INFRARED
3. LIQUID CHROMATOGRAPHY
4. ION EXCHANGE CHROMATOGRAPHY
5. X-RAY FLORESCENCE
6. CHNSO ANALYZER (ORGANIC ANALYZER)
7. MICROWAVE DIGESTER
8. PH AND CONDUCTIVITY METER
9. PH METER
10. WATER BATH
11. VACUUM OVEN
12. DOUBLE DISTILLER
13. DRYING CABINET
14. MICROPLATE READER
15. DESSICATOR
16. COMBUSTION CALORIMETER
17. FOSS HYDROTEC
18. FOSS SOXTEC EXTRACTION UNIT
19. CYCLOTEC (GRINDER)
20. FOSS FIBRETEC
21. FOSS KNIFETEC (GRINDER)
22. MOISTURE ANALYZER
23. SCOTSMAN ICE MAKER
24. POLYMERASE CHAIN REACTION
25. ELECTROPHORESIS SET UP
26. GEL DOCUMENTATION SYSTEM:
27. NANOSPECTROPHOTOMETER
28. COLONY COUNTER
29. REFRIGERATED CENTRIFUGE
30. CENTRIFUGE
31. DRY BATH
32. STIRING WATER BATH
33. BioCold -45°C FREEZER
34. BMS MICROSCOPE
35. BIOSAFETY CABINET
36. INCUBATOR SHAKER
37. AUTOCLAVE
38. BIOSAFETY CABINET
39. BIOREACTOR
40. ANALYTICAL BALANCE

41. PH METER
42. MAGNETIC STIRER
43. ANALYTIC WEIGH BALANCE
44. SONICATOR
45. BioCOLD FREEZER
46. AUTOMATED AUTOCLAVE
47. SEMI-AUTOMATIC AUTOCLAVE
48. DRYING CABINET
49. DISTILLER
50. MANUAL AUTOCLAVE
51. ORBITAL SHAKER

1.0 CENTRAL AND INSTRUMENTATION LAB



1.1 NEAR INFRARED SPECTROPHOTOMETER

DESCRIPTION: An analytical instrument that measures the absorption or reflection of light in the near-infrared region of the electromagnetic spectrum (typically 780 nm to 2500 nm). NIR light interacts with molecular bonds (especially C-H, O-H, N-H) and is used for rapid, non-destructive, and quantitative analysis of organic compounds.

APPLICATION: Widely used in agriculture (moisture, protein, fat in grains), food processing, pharmaceuticals, and petrochemicals for quality control, composition analysis, and process monitoring.



2.2 MID INFRARED

DESCRIPTION: An analytical instrument that measures the absorption of infrared light in the mid-infrared region (typically 2500 nm to 25,000 nm). MIR light excites molecular vibrations, producing a unique "fingerprint" spectrum for each compound.

APPLICATION: Used for identification of organic and some inorganic compounds, functional group analysis, quality control, and detection of contaminants in various samples (polymers, pharmaceuticals, chemicals, food).



1.3LIQUID CHROMATOGRAPHY

DESCRIPTION: A separation technique used to separate components in a liquid mixture based on their differential partitioning between a stationary phase and a mobile phase (liquid solvent).

APPLICATION: Used for separation, identification, and quantification of various compounds in pharmaceutical, environmental, food, and clinical samples.



1.4 ION EXCHANGE CHROMATOGRAPHY

DESCRIPTION: A specific type of liquid chromatography that separates molecules based on their net charge. The stationary phase contains charged functional groups that bind oppositely charged molecules from the sample. Molecules are then eluted by changing the ionic strength or pH of the mobile phase.

APPLICATION: Commonly used for the separation and purification of proteins, amino acids, nucleotides, and other charged biomolecules.



1.5 X-RAY FLORESCENCE

DESCRIPTION: A non-destructive analytical technique used for elemental analysis of materials. When a sample is irradiated with X-rays, elements in the sample emit characteristic secondary X-rays (fluorescence) whose energy and intensity are unique to each element.

APPLICATION: Used for qualitative and quantitative elemental analysis in geology, metallurgy, environmental monitoring, art conservation, and quality control in various industries.



1.6 CHNSO ANALYZER (ORGANIC ANALYZER)

DESCRIPTION: An elemental analyzer that quantifies the percentage of Carbon (C), Hydrogen (H), Nitrogen (N), Sulfur (S), and Oxygen (O) in organic and some inorganic samples. The sample is combusted at high temperatures, and the resulting gaseous products (CO_2, H_2O, N_2, SO_2, etc.) are detected and measured.

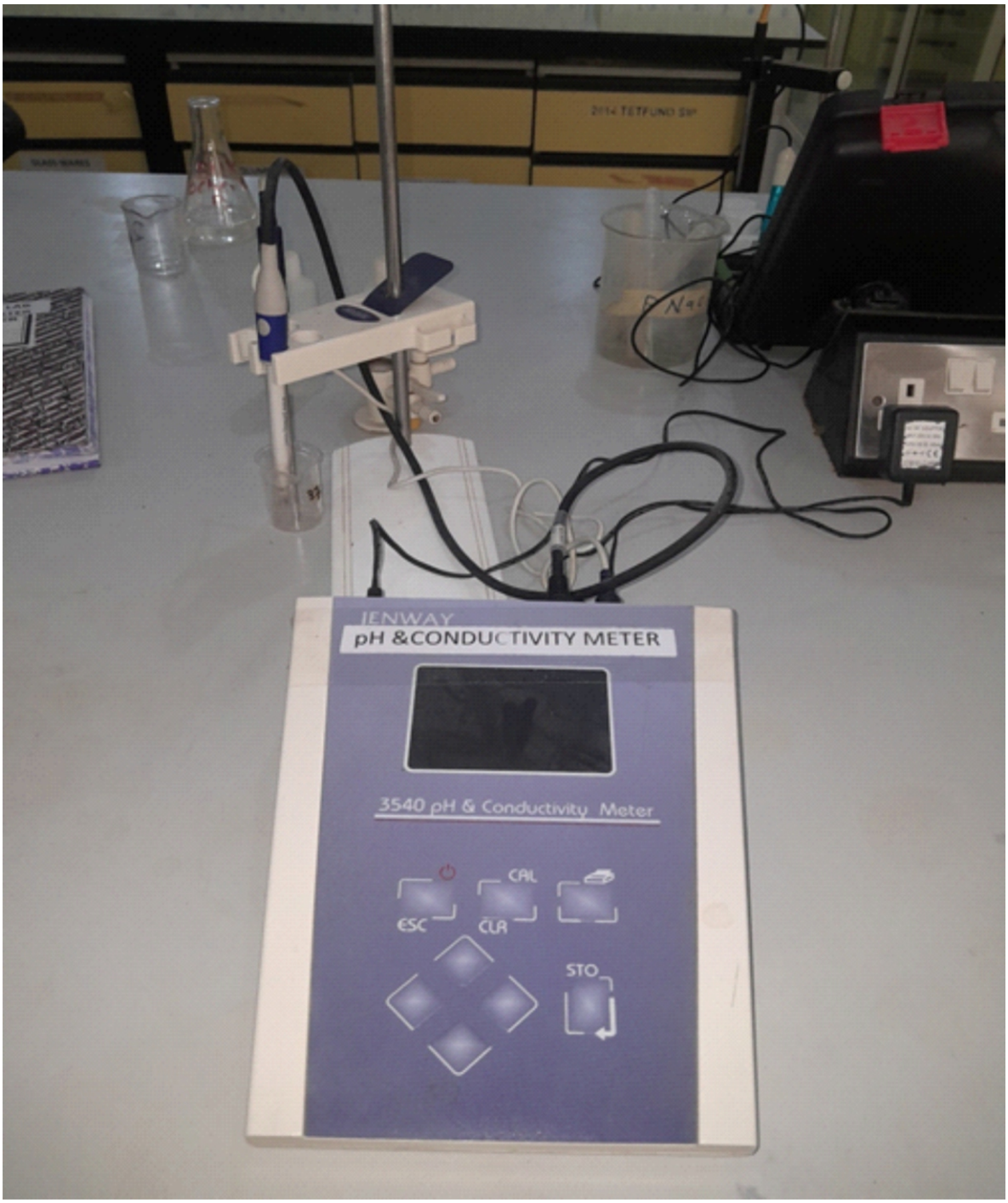
APPLICATION: Essential for determining the empirical formula, purity, and composition of organic compounds in chemical research, pharmaceuticals, environmental samples, and materials science.



1.7 MICROWAVE DIGESTER

DESCRIPTION: An instrument that uses microwave energy to rapidly heat and digest samples in sealed vessels with strong acids. This process breaks down the sample matrix, dissolving analytes into a solution suitable for elemental analysis.

APPLICATION: Preparation of solid samples (environmental, food, biological, geological) for trace element analysis, offering faster and cleaner digestion compared to traditional hot plate methods.



1.8 pH AND CONDUCTIVITY METER

DESCRIPTION: A combined instrument that measures both the pH and the electrical conductivity of a solution.

APPLICATION: Routine analysis in water quality monitoring, environmental studies, agriculture, food and beverage industry, and chemical laboratories.



1.9 pH METER

DESCRIPTION: An instrument used for measuring the pH (acidity or alkalinity) of a liquid or semi-solid substance.

APPLICATION: Essential for quality control, research, and environmental monitoring in virtually all fields involving liquids, including chemistry, biology, food science, and wastewater treatment.



1.10 WATER BATH

DESCRIPTION: An apparatus that maintains a constant temperature by heating water. It is used to incubate samples at a stable temperature, typically for biochemical reactions, enzyme assays, or warming reagents.

APPLICATION: Incubation of samples, chemical reactions, thawing frozen samples, and maintaining biological cultures at optimal temperatures.



1.11 VACUUM OVEN

DESCRIPTION: An oven that operates under reduced pressure (vacuum). This lowers the boiling point of water and other solvents, allowing for drying at lower temperatures or more rapid drying of heat-sensitive materials.

APPLICATION: Drying of heat-sensitive samples, removal of residual solvents, and vacuum embedding.



1.12 DOUBLE DISTILLER

DESCRIPTION: An apparatus that purifies water through distillation, a process involving boiling water to produce steam, which is then condensed back into liquid water, leaving impurities behind. A double distiller performs this process twice for higher purity.

APPLICATION: Production of high-purity distilled water for laboratory use, reagent preparation, and sensitive analytical techniques where mineral ions or other impurities would interfere.



1.13 DRYING CABINET

DESCRIPTION: An enclosed chamber with controlled heating and ventilation used for drying laboratory glassware, equipment, or samples. It provides a clean, dust-free environment for efficient drying.

APPLICATION: Drying of glassware, sterilization of heat-stable equipment, and drying of solid samples for analysis (moisture content determination).



1.14 MICROPLATE READER

DESCRIPTION: An instrument designed to detect and quantify biological, chemical, or physical events in microtiter plates. It can measure absorbance, fluorescence, luminescence, or other signals.

APPLICATION: High-throughput screening in drug discovery, ELISA assays, cell viability assays, enzyme kinetics, and nucleic acid quantification in molecular biology.

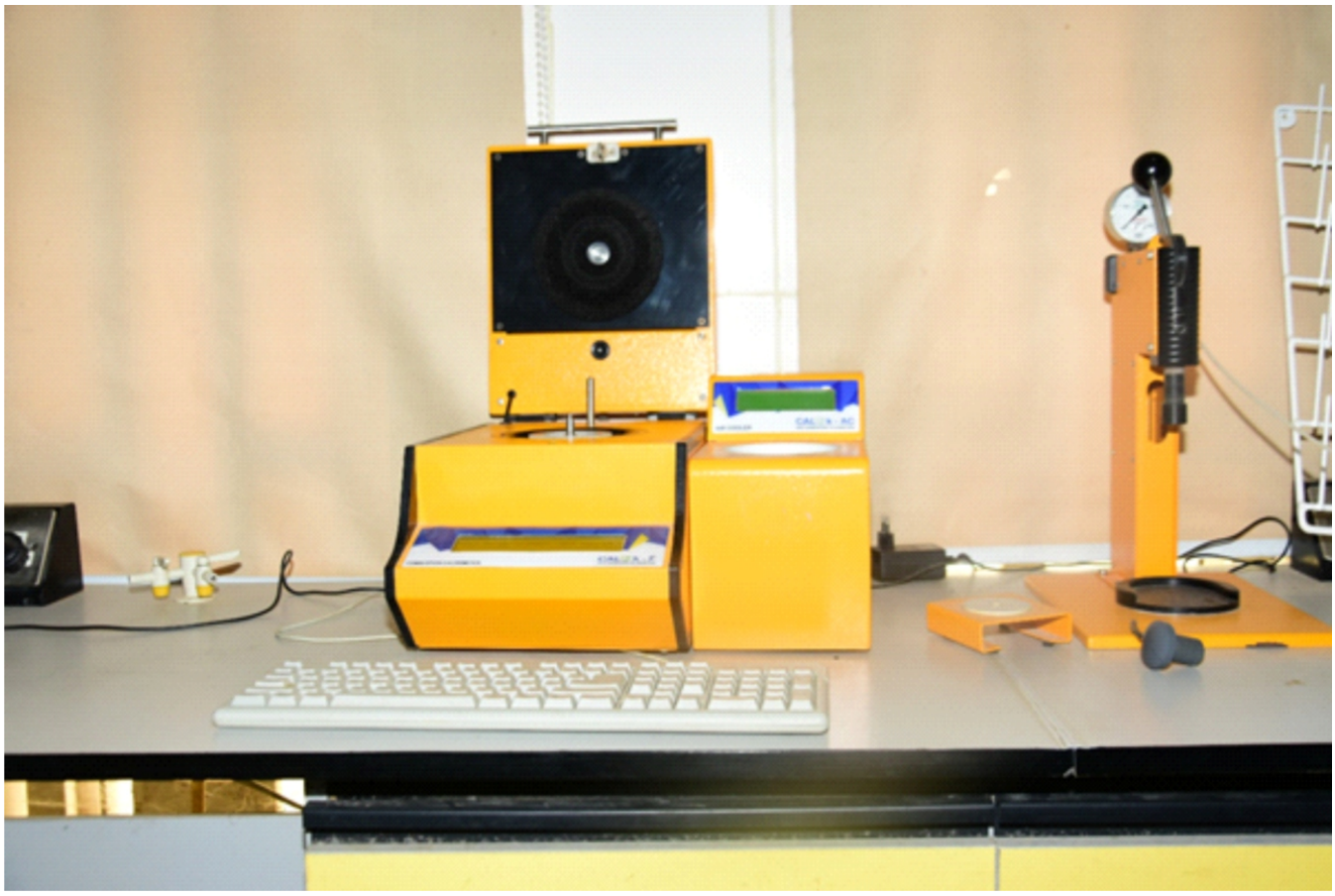
2.0 FOOD AND FEED LABORATORY



2.1 DESSICATOR

DESCRIPTION: A sealed container used to create and maintain a dry atmosphere. It typically contains a desiccant (drying agent) like silica gel to absorb moisture, protecting sensitive substances from humidity.

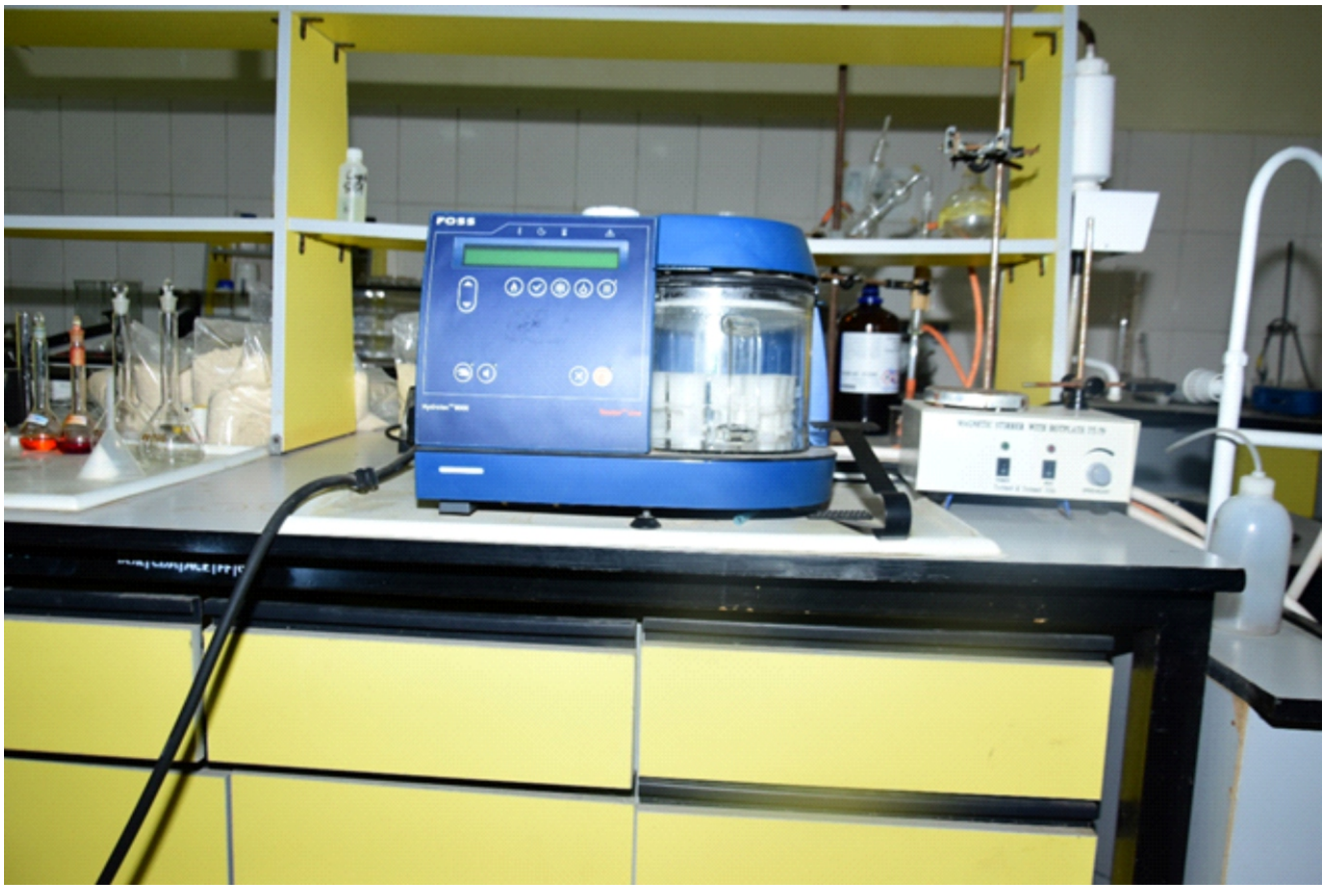
APPLICATION: Storing hygroscopic chemicals, drying samples to a constant weight, and protecting sensitive instruments from moisture.



2.2 COMBUSTION CALORIMETER

DESCRIPTION: An instrument used to measure the heat released or absorbed during a chemical reaction or physical change, specifically the heat of combustion. A sample is completely burned in a sealed chamber (bomb) filled with oxygen, and the temperature change of the surrounding water is measured.

APPLICATION: Determining the calorific value (energy content) of fuels, food, and other materials.



2.3 FOSS HYDROTEC

DESCRIPTION: A specialized automated or semi-automated system from designed for hydrolysis in the determination of total fat content in food and feed samples. It typically involves acid hydrolysis to release fat before extraction.

APPLICATION: Fat analysis in food and feed, often as a preparatory step for Soxtec extraction.



2.4 FOSS SOXTEC EXTRACTION UNIT

DESCRIPTION: A semi-automated system that performs Soxhlet extraction, a method for separating lipids (fats) from solid samples using a solvent. The solvent continuously cycles through the sample, dissolving the fat, which is then collected.

APPLICATION: Rapid and efficient determination of crude fat content in food, feed, and agricultural products.



2.5 CYCLOTEC (GRINDER)

DESCRIPTION: These are laboratory mills or grinders designed for rapid and efficient preparation of solid samples (grains, feed, plant material) by grinding them into a fine, homogeneous powder. This ensures consistent particle size for subsequent analysis.

APPLICATION: Sample preparation for various analytical methods in agriculture, food, and feed industries (for NIR analysis, fat extraction, protein determination).



2.6 FOSS FIBRETEC

DESCRIPTION: A semi-automated system used for the determination of fiber content (crude fiber, neutral detergent fiber (NDF), acid detergent fiber (ADF)) in food and feed samples. It involves sequential chemical digestions to isolate different fiber fractions.

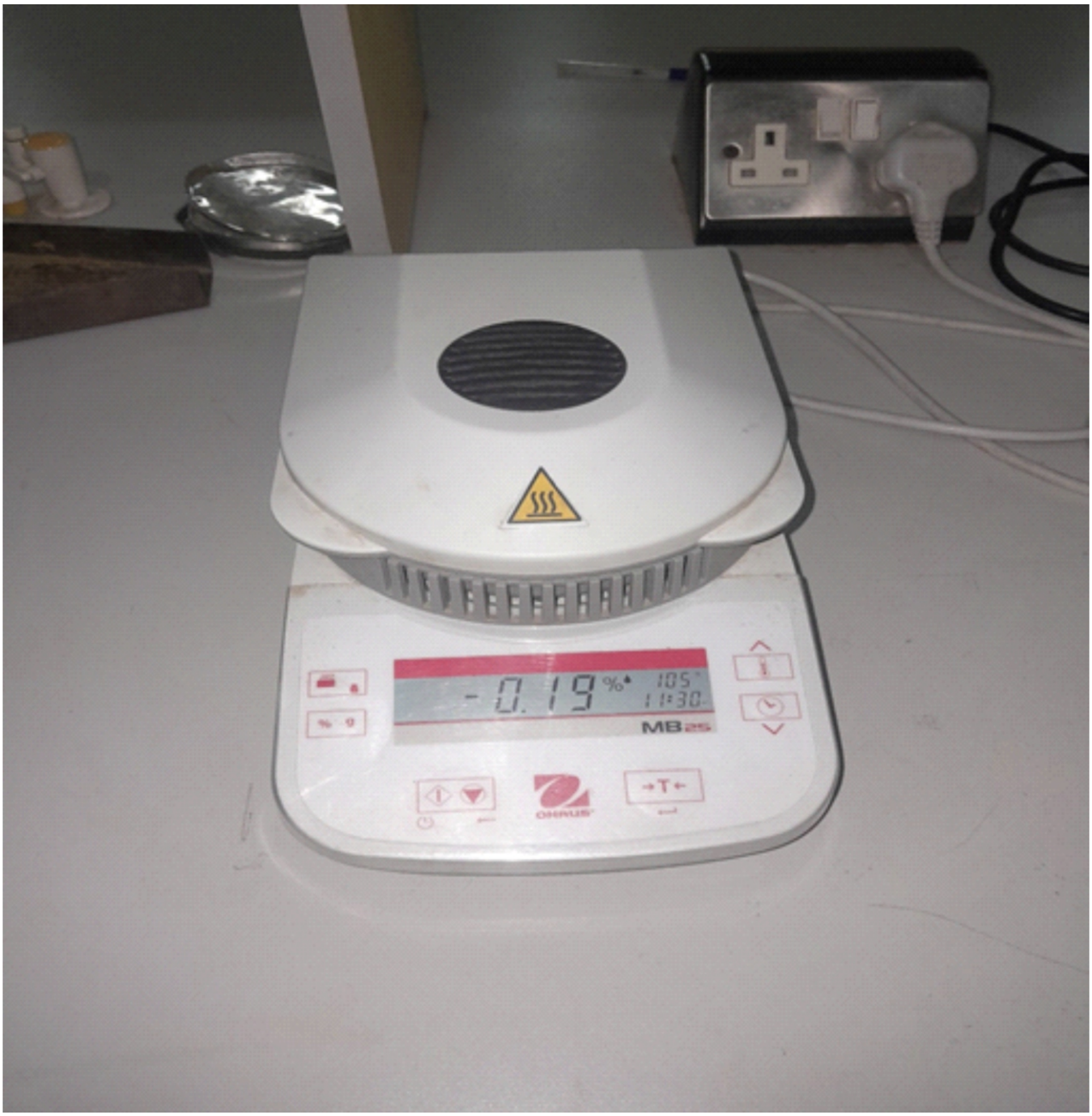
APPLICATION: Nutritional analysis of food and feed products, crucial for animal nutrition and quality control.



2.7 FOSS KNIFETEC (GRINDER)

DESCRIPTION: These are laboratory mills or grinders designed for rapid and efficient preparation of solid samples (grains, feed, plant material) by grinding them into a fine, homogeneous powder. This ensures consistent particle size for subsequent analysis.

APPLICATION: Sample preparation for various analytical methods in agriculture, food, and feed industries (for NIR analysis, fat extraction, protein determination).



2.8 MOISTURE ANALYZER

DESCRIPTION: An instrument that rapidly determines the moisture content of a sample. It typically works by heating the sample and measuring the weight loss due to evaporation of moisture. Some models use infrared or halogen heating.

APPLICATION: Quality control in food, pharmaceuticals, chemicals, and plastics industries where moisture content is a critical parameter.

3.0 MOLECULAR LABORATORY



3.1 SCOTSMAN ICE MAKER

DESCRIPTION: A laboratory appliance that produces ice (flakes) for various laboratory needs, such as RNA extraction, keeping reagents cold, cooling reactions, or storing samples.

APPLICATION: General laboratory cooling, sample preservation, and maintaining low temperatures for experiments.



3.2 POLYMERASE CHAIN REACTION

Description: A molecular biology technique machine that amplifies specific DNA sequences exponentially. It involves cycles of denaturation, primer annealing, and DNA extension by a heat-stable DNA polymerase in a thermal cycler.

Application: DNA cloning, genetic disease diagnosis, forensic analysis, pathogen detection, gene expression studies, and preparation of DNA for sequencing.



3.3 ELECTROPHORESIS SET UP

Description: A system used to separate charged molecules (like DNA, RNA, or proteins) based on their size and charge when subjected to an electric field. It typically includes a gel (agarose or polyacrylamide), an electrophoresis tank, and a power supply.

Application: Separation and analysis of nucleic acids (PCR products, restriction fragments) and proteins, crucial for molecular biology research, diagnostics, and quality control.



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Application: Separation and analysis of nucleic acids (PCR products, restriction fragments) and proteins, crucial for molecular biology research, diagnostics, and quality control.



3.4 GEL DOCUMENTATION SYSTEM

Description: An imaging system used to capture high-resolution digital images of gels (e.g., agarose gels with DNA stained with Ethidium Bromide or SYBR Safe) or other luminescent/fluorescent samples. It usually consists of a darkroom, a UV transilluminator, a camera, and image analysis software.

Application: Documentation, quantification, and analysis of DNA, RNA, and protein bands after electrophoresis.



3.5 NANOSPECTROPHOTOMETER

Description: A specialized spectrophotometer designed for measuring the concentration and purity of very small volumes (typically 1-2 µL) of nucleic acids and proteins without the need for cuvettes. It uses surface tension to hold the sample.

Application: Rapid and accurate quantification of DNA, RNA, and protein samples in molecular biology, genomics, and proteomics research, saving precious sample material.



3.6 COLONY COUNTER

Description: An instrument used to assist in counting microbial colonies growing on agar plates. It often features a magnifying glass, illumination, and a pressure-sensitive counting probe that marks colonies and records counts.

Application: Enumeration of bacteria or fungi in microbiological quality control, food safety testing, water analysis, and research.



3.7 REFRIGERATED CENTRIFUGE

DESCRIPTION: A centrifuge equipped with a refrigeration system to maintain samples at a low, controlled temperature during centrifugation. This is crucial for sensitive biological samples (proteins, enzymes, cells) that could degrade or denature at higher temperatures.

APPLICATION: Separation of temperature-sensitive biological components (cells, organelles, proteins, nucleic acids) from solutions, cell harvesting, and purification steps.



3.8 CENTRIFUGE

DESCRIPTION: A laboratory instrument that uses centrifugal force to separate components of a mixture based on their density. It spins samples at high speeds, causing denser particles to settle at the bottom of the tube.

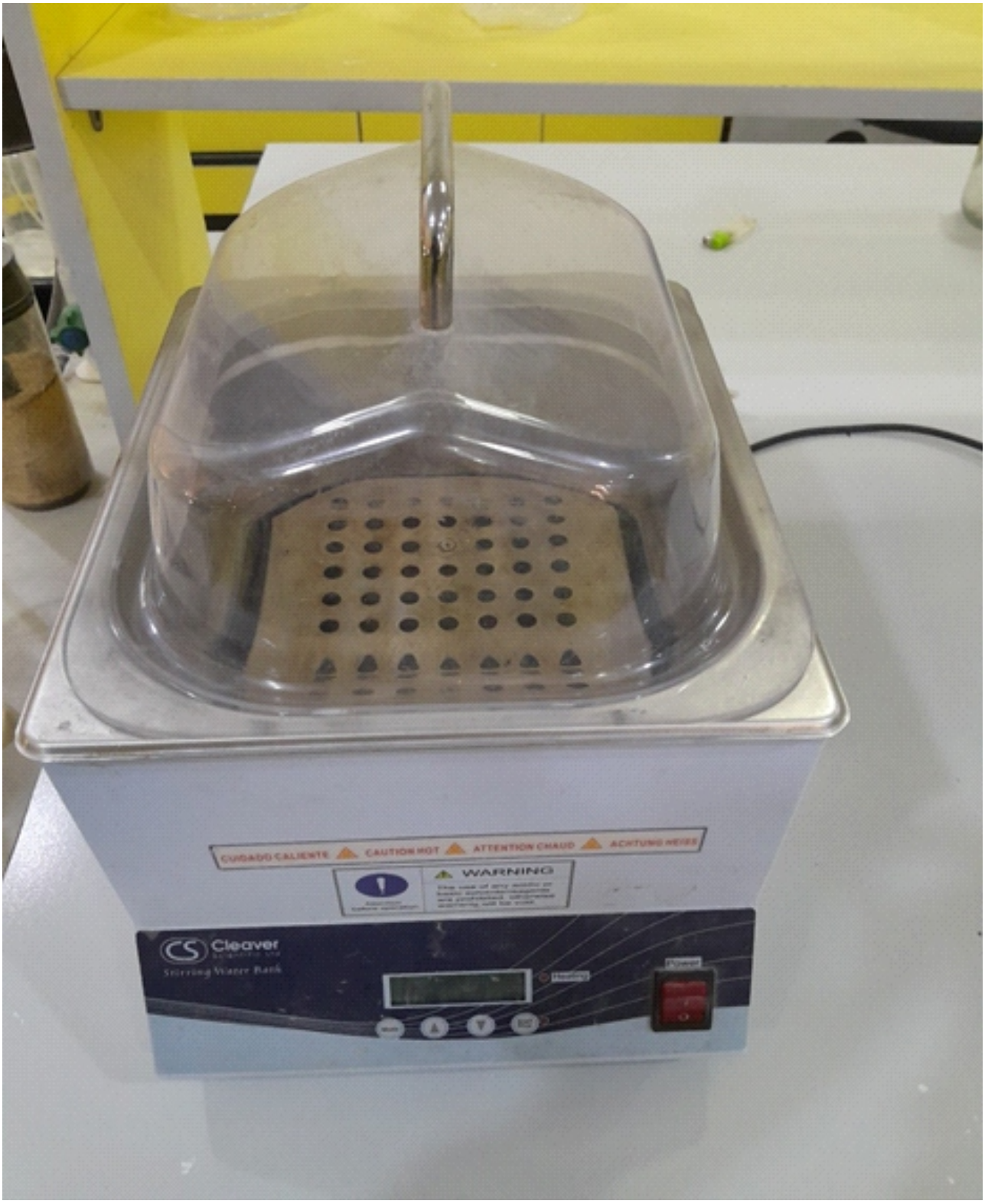
APPLICATION: Separation of cells from media, precipitates from solutions, and blood components (plasma/serum from cells).



3.9 DRY BATH

DESCRIPTION: A laboratory heating device that uses a heated metal block (instead of water) to maintain a constant temperature for samples in tubes. It offers precise temperature control and avoids the mess of water baths.

APPLICATION: Incubation of samples, enzyme reactions, denaturation of nucleic acids, and other temperature-sensitive assays where precise, dry heating is required.



3.10 STIRING WATER BATH

DESCRIPTION: A water bath that includes a stirring mechanism to ensure uniform temperature distribution throughout the water, leading to more consistent heating of samples.

APPLICATION: Applications similar to a standard water bath but with enhanced temperature uniformity, critical for sensitive biochemical reactions.



3.11 BioCold FREEZER

DESCRIPTION: Ultra-low temperature freezers designed for long-term storage of biological samples at very cold temperatures (-45°C). Provide a stable and secure environment to preserve the integrity of sensitive materials like DNA, RNA, proteins, and cell lines.

APPLICATION: Long-term preservation of biological samples in research, clinical, and pharmaceutical laboratories.



3.12 MICROSCOPE

DESCRIPTION: A compound light microscope coupled with a camera for magnifying and capturing small objects or samples (microorganisms, insects, micro algal).

APPLICATION: General biological observation, cell counting, microbial identification, tissue analysis, and educational purposes.



4.1 BIOSAFETY CABINET

DESCRIPTION: A ventilated laboratory enclosure designed to protect laboratory workers, the environment, and research materials from exposure to biohazards. It uses HEPA-filtered laminar airflow to create a sterile working environment and contain aerosols.

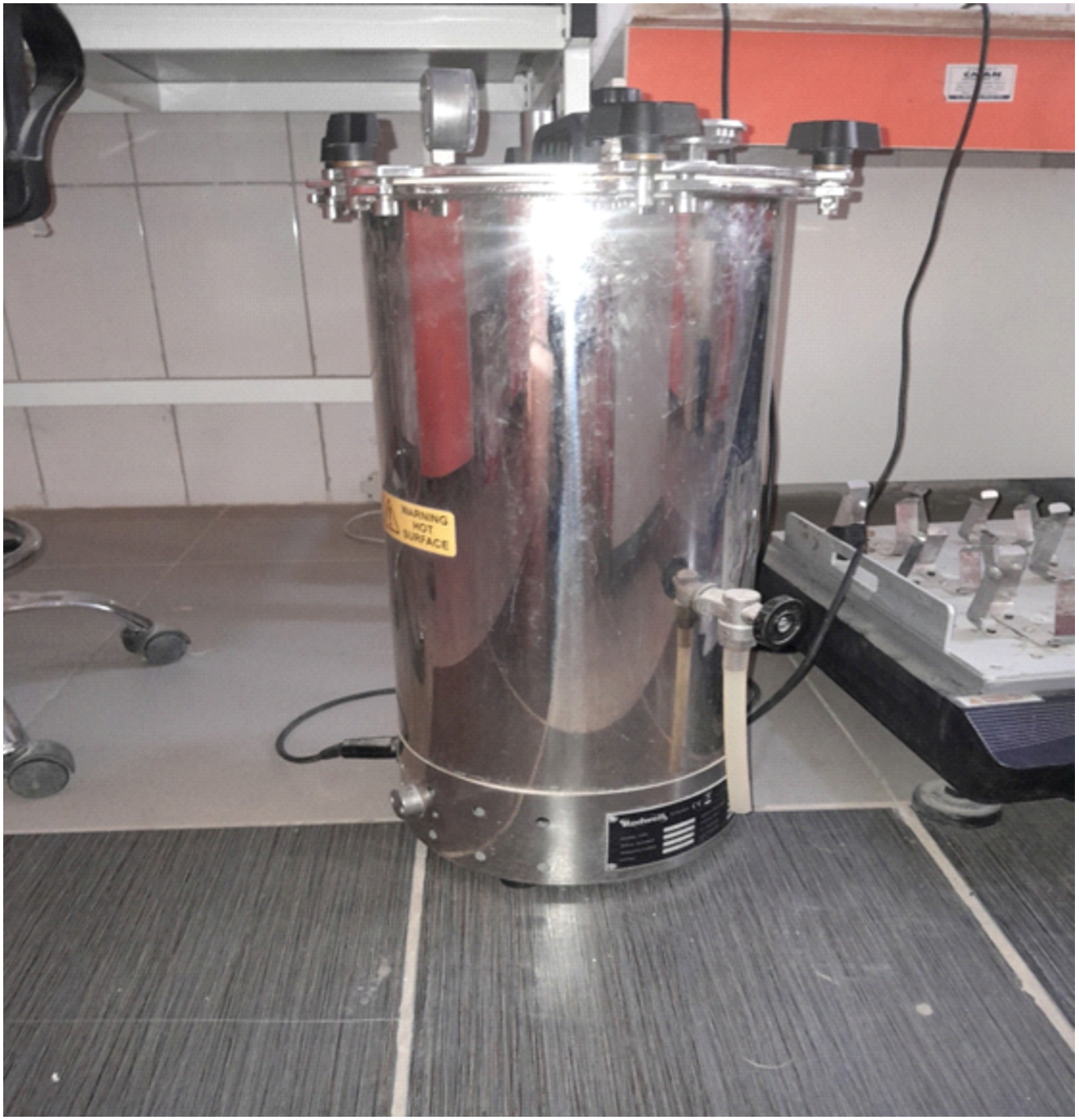
APPLICATION: Handling of pathogenic microorganisms, cell cultures, and other potentially hazardous biological materials, ensuring safety and preventing contamination.



4.2 INCUBATOR SHAKER

DESCRIPTION: An incubator that combines precise temperature control with orbital shaking. This allows for the incubation of liquid cultures (bacterial or yeast cultures) under agitation, ensuring uniform aeration and nutrient distribution for optimal growth.

APPLICATION: Culturing microorganisms, cell lines, and performing biochemical reactions requiring constant mixing and controlled temperature.



4.3 MANUAL AUTOCLAVE

DESCRIPTION: An instrument that use high-pressure saturated steam to sterilize laboratory equipment, media, and waste. The high temperature achieved under pressure effectively kills all microorganisms, including bacterial spores.

APPLICATION: Sterilization of glassware, media, instruments, and biohazardous waste in microbiology, molecular biology, and clinical laboratories.

5.0TISSU CULTURE LABORATORY



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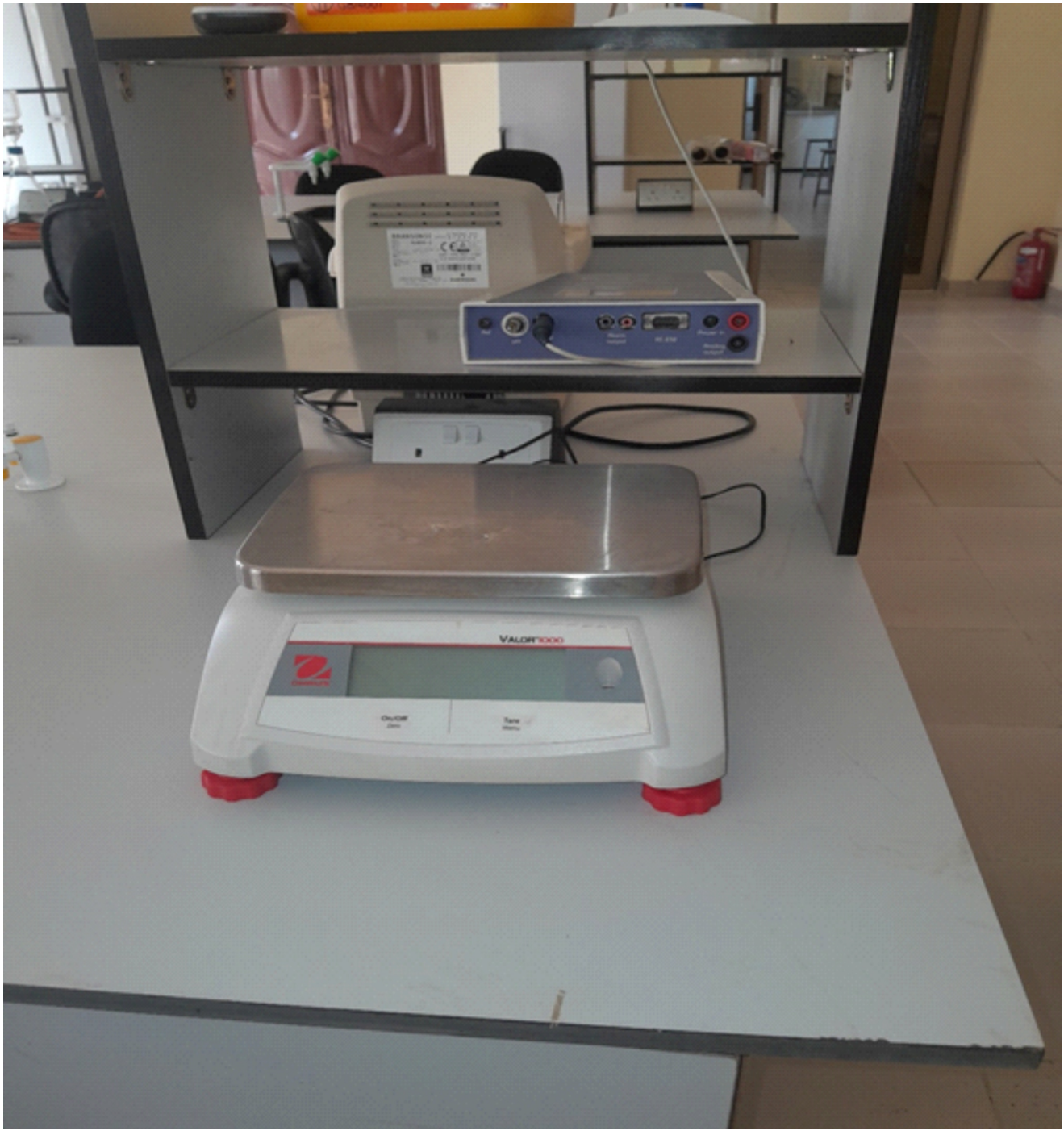
APPLICATION: Handling of pathogenic microorganisms, cell cultures, and other potentially hazardous biological materials, ensuring safety and preventing contamination.



5.2 BIOREACTOR

DESCRIPTION: A vessel (ranging from small lab scale to large industrial scale) designed to carry out a biological process under controlled environmental conditions. It provides optimal conditions (temperature, pH, aeration, agitation, nutrient supply) for the growth of cells to produce desired products (proteins, enzymes, biofuels).

APPLICATION: Fermentation for industrial production of pharmaceuticals, enzymes, biofuels, and culturing of cells for research or therapeutic purposes.



5.3 ANALYTICAL BALANCE

DESCRIPTION: Highly sensitive laboratory balances used for precise measurement of mass, typically to four or more decimal places. It is enclosed to protect against air currents.

APPLICATION: Accurate weighing of chemicals, reagents, and samples for quantitative analysis, solution preparation, and formulation in research and quality control.



5.4 PH METER

DESCRIPTION: An instrument used for measuring the pH (acidity or alkalinity) of a liquid or semi-solid substance.

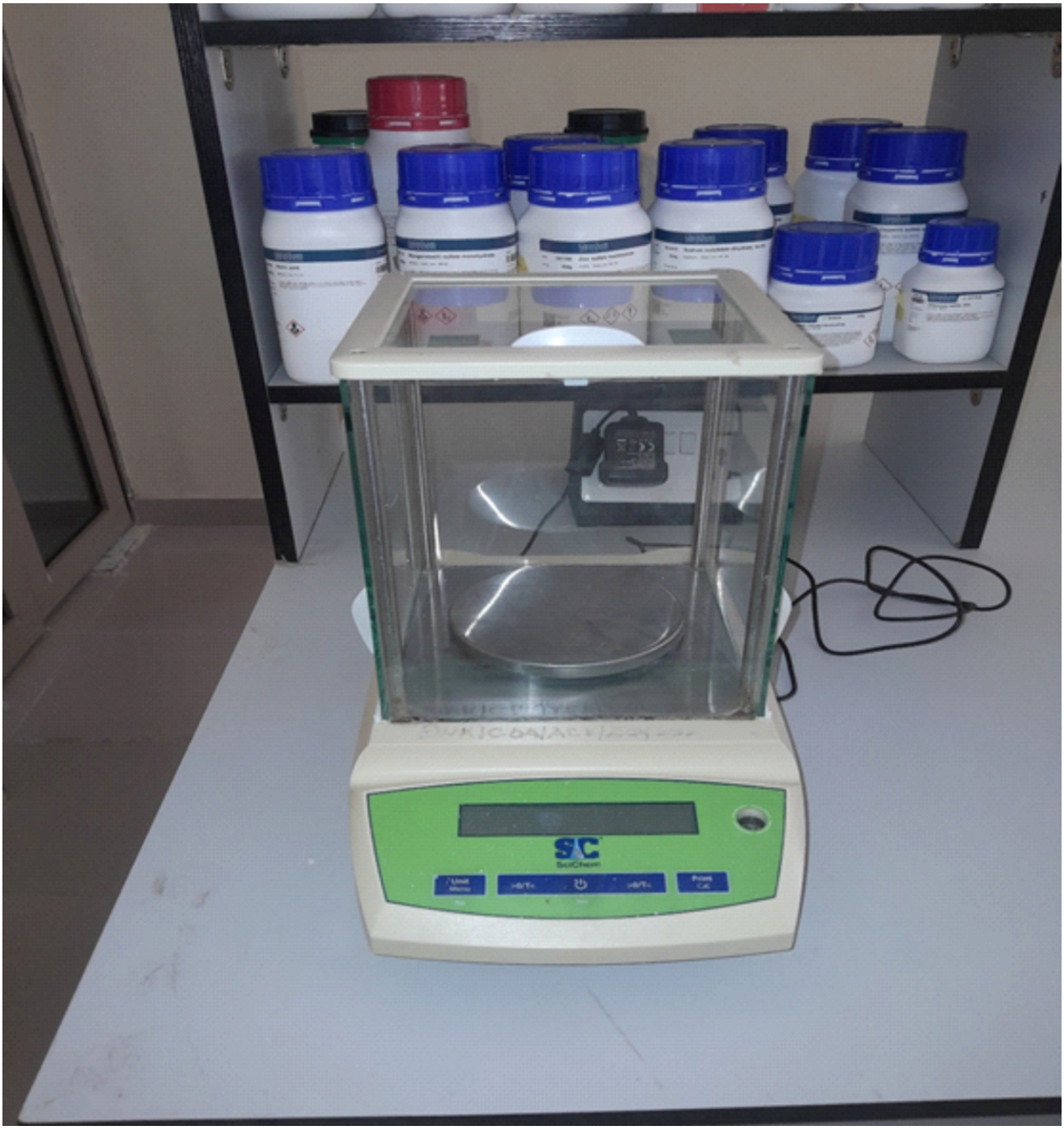
APPLICATION: Essential for quality control, research, and environmental monitoring in virtually all fields involving liquids, including chemistry, biology, food science, and wastewater treatment.



5.5 MAGNETIC STIRER

Description: A laboratory device that uses a rotating magnetic field to cause a stir bar immersed in a liquid to spin, thereby mixing the liquid.

Application: Mixing solutions, dissolving solids, and maintaining homogeneity in chemical and biological reactions.



5.6 ANALYTIC WEIGH BALANCE

DESCRIPTION: Highly sensitive laboratory balances used for precise measurement of mass, typically to four or more decimal places. It is enclosed to protect against air currents.

APPLICATION: Accurate weighing of chemicals, reagents, and samples for quantitative analysis, solution preparation, and formulation in research and quality control.



5.7 SONICATOR

DESCRIPTION: A device that uses high-frequency sound waves (ultrasound) to agitate particles in a liquid. This can be used for various purposes, including cell lysis, degassing liquids, and dispersing particles.

APPLICATION: Cell disruption (breaking open cells to extract contents), DNA shearing, emulsification, and cleaning of delicate instruments.



5.8 BioCOLD FREEZER

Description: A refrigerated and frozen storage used for storage of reagents, samples, or perishable materials at low temperatures.

Application: Large-scale storage of temperature-sensitive materials in research, pharmaceutical, and food industries.



5.9 AUTOMATED AUTOCLAVE

DESCRIPTION: An instrument that use high-pressure saturated steam to sterilize laboratory equipment, media, and waste. The high temperature achieved under pressure effectively kills all microorganisms, including bacterial spores.

APPLICATION: Sterilization of glassware, media, instruments, and biohazardous waste in microbiology, molecular biology, and clinical laboratories.



5.10 SEMI-AUTOMATIC AUTOCLAVE

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APPLICATION: Drying of glassware, sterilization of heat-stable equipment, and drying of solid samples for analysis (moisture content determination).



5.12 DISTILLER

DESCRIPTION: An apparatus that purifies water through distillation, a process involving boiling water to produce steam, which is then condensed back into liquid water, leaving impurities behind.

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APPLICATION: Culturing microorganisms, cell lines, and performing biochemical reactions requiring constant mixing and controlled temperature.

BENUE STATE UNIVERSITY, MAKURDI
CENTER OF EXCELLENCE FOR FOOD TECHNOOGY AND RESEARCH (CEFTER)





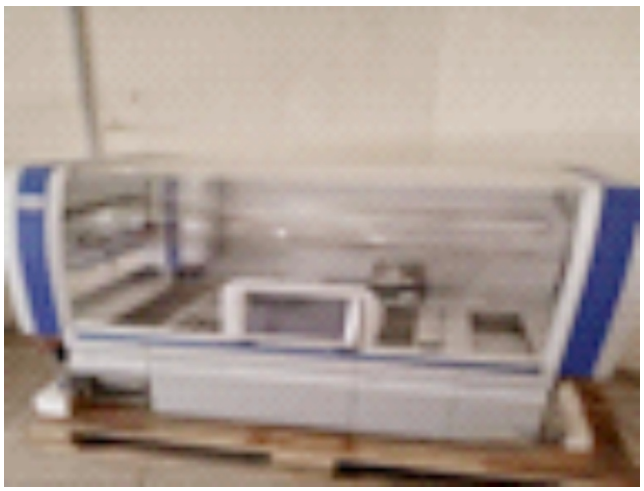
Orbit Rs



Vacuum Ovum



AKTA explorer fast protein liquid





RNA/DNA Purification



Ultrasonic Cleaners





Binocular Microscope



Tecam Liquid handling System





Millipore Water Purification System



Incubator



sothermal titration calorimeter(ITC)



Eppendorf BioFlo 320



Eppendorf BioFlo 320

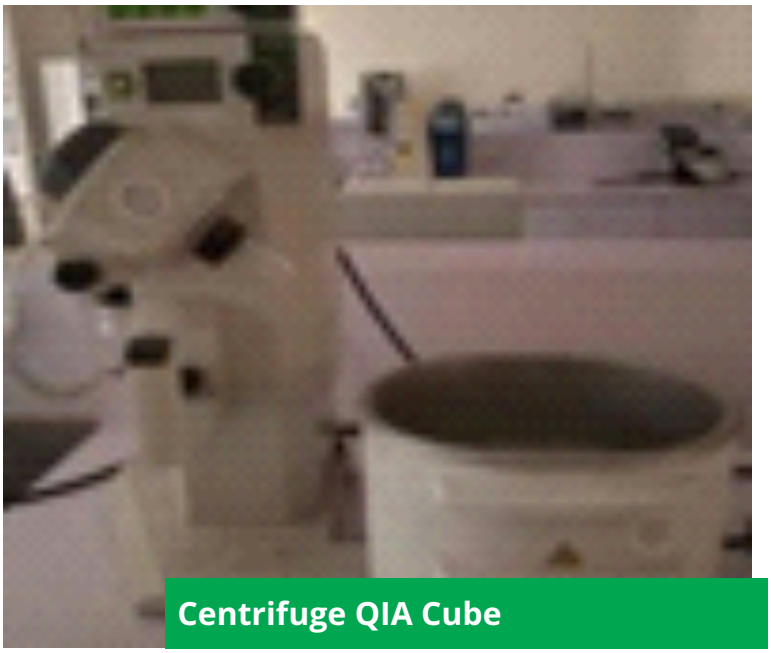


PCR Thermal Cycler



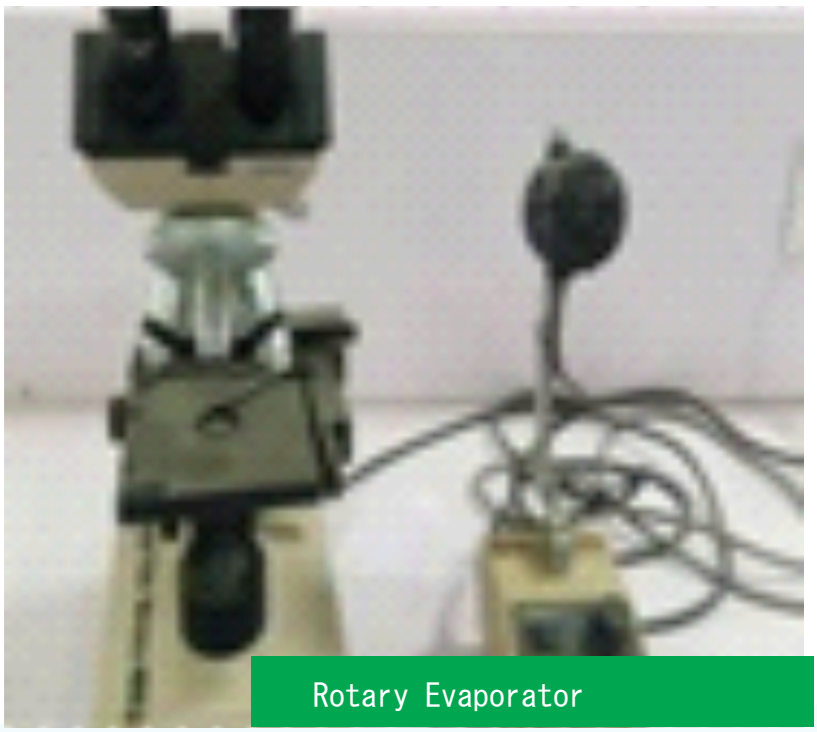


Refridgerator



Centrifuge QIA Cube

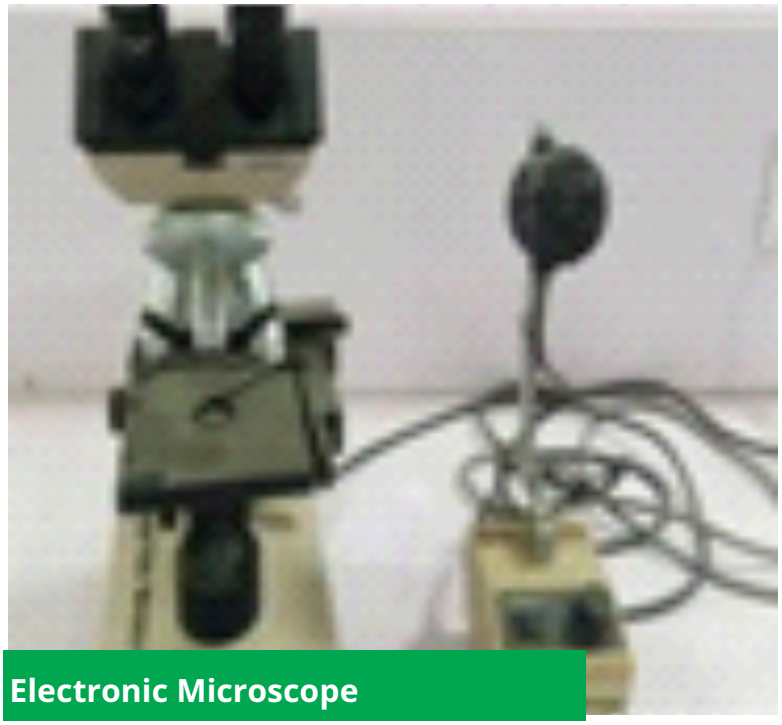




Rotary Evaporator



Water Bath



Electronic Microscope



Digital Shaker

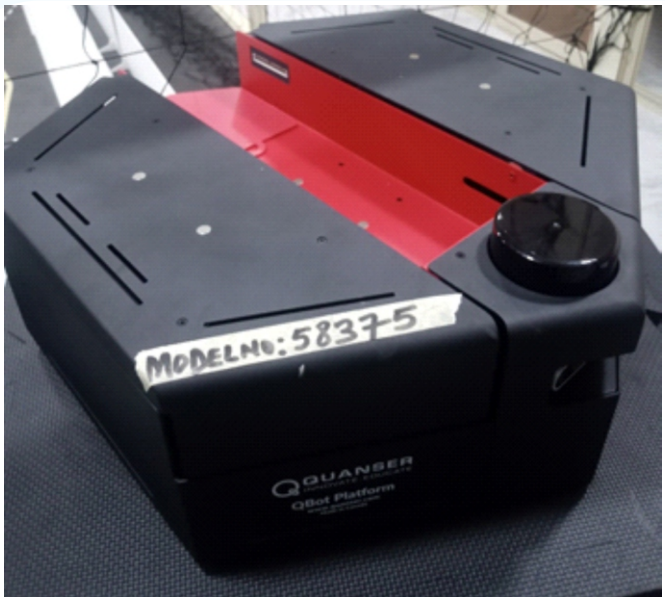


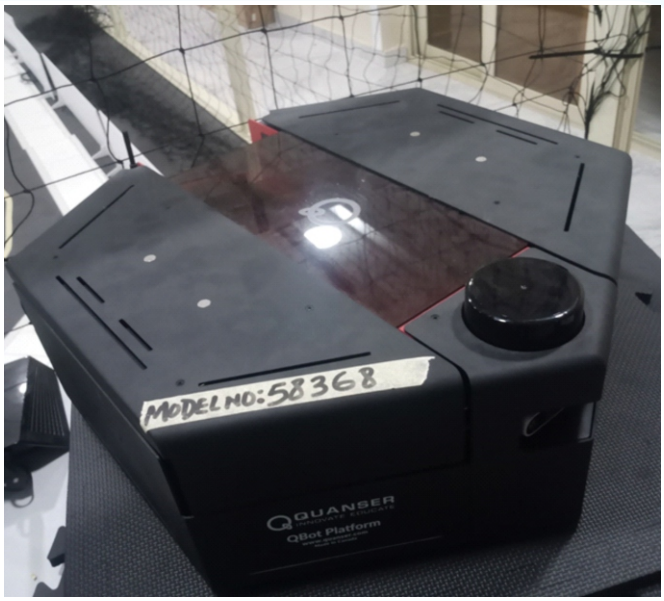
Fridge4 degree

OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE

OAU ICT-DRIVEN KNOWLEDGE PARK (OAU-OAK)

S/N	List of Equipment	Description	Location
1.	Qarm	Digital twin for Robotics Teaching Lab, part of the Robotics and Mechatronics lab solutions, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
2.	Traffic Light	Light dynamics and control for both traditional and Autonomous vehicles, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
3.	Qdrone	flight dynamics and control, multiagent applications, and vision-based application	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
4.	Qbot	Virtual twin used for the study of mobile Robotics, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
5.	Qcar	Autonomous Vehicle for self-driving Application, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
6.	Aero 2	High-fidelity sensors used to teach control system courses, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.
7.	Qube-Servo 3	Virtual twin used for Pendulum and Speed control Modelling, made by Quanser in Canada	OAU ICT - Driven Knowledge Park (OAK-Park) Design Studio @ Obafemi Awolowo University, Ile Ife.


MODEL NO: 58375
QUANSER
QBot Platform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QBot Platform


MODEL NO: 58367
QUANSER
QBot Platform




QUANSER
Aero 2
MODEL NO: 58232


QUANSER
Aero 2
MODEL NO: 58227


QUANSER
Aero 2
MODEL NO: 58225


MODEL NO: 58378
QUANSER
QBot Platform

ACE-CEFOR

UNIVERSITY OF PORT-HARCOURT
CENTRE FOR EXCELLENCE ON OILFIELDS CHEMICAL RESEARCH (CEFOR)

S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
1	ZDY Moisture Titrator ZDY-502	UPH/2023/ CEFOR/E/015	1	Water content determination



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
2	External Device Moisture Titrator ZDY-502	UPH/2023/ CEFOR/E/016	1	Water content determination



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
3	HP Desktop Computer	UPH/2023/ CEFOR/E/017	1	Monitor



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
4	Drying Cabinet FCM 240	UPH/2023/ CEFOR/E/018	1	Drying



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
5	Biological Safety Cabinet 11231 BBC 86	UPH/2023/ CEFOR/E/019	1	Respiratory safety



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
6	Amino Acid Reagent Organiser S7130	UPH/2023/ CEFOR/E/020	1	Amino acid reactor



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
7	HP Desktop Computer	UPH/2023/ CEFOR/E/021	1	Monitor



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
8	Rotary Evaporator	UPH/2023/ CEFOR/E/022	1	Distillation & Solvent recovery



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
9	Digital Water Bath RE300DB	UPH/2023/ CEFOR/E/023	1	Sample conditioning



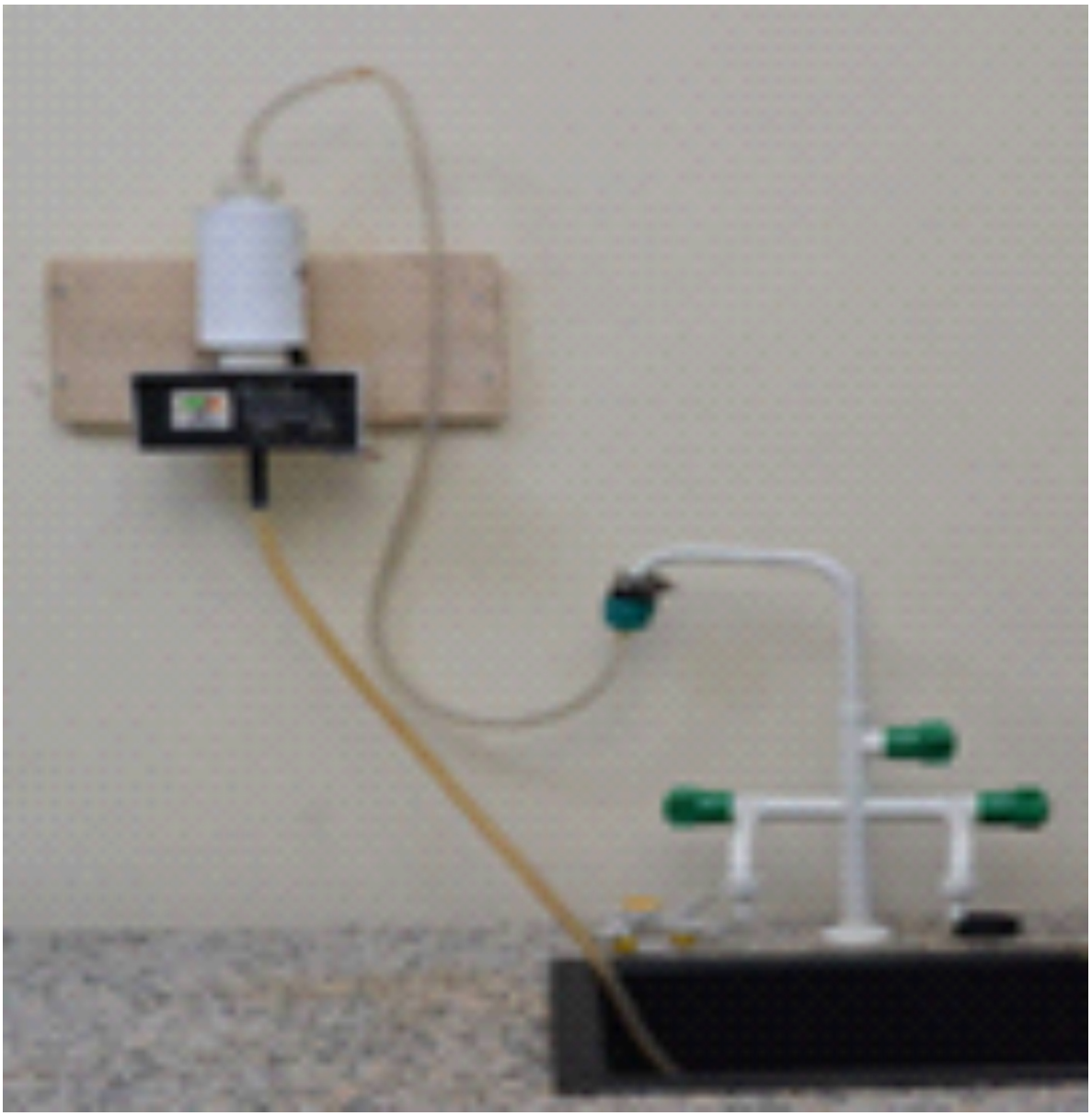
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
10	Recirculatory Chiller	UPH/2023 /CEFOR/E/024	1	Cooling and Circulating



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
11	Water Circulatory Vacuum Pump	UPH/2023/ CEFOR/E/025	1	Cooling & Circulating



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
12	Deionizer	UPH/2023/ CEFOR/E/026	1	DI water generator



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
13	UV-VIS Spectrophotomer Uv2150	UPH/2023/ CEFOR/E/028	1	Composition analyzer



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
14	Sieve Shaker Controller	UPH/2023/ CEFOR/E/029	1	Sample sizer



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
15	Sieve Shaker	UPH/2023 /CEFOR/E/030	1	Sample sizer



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
16	Flake Ice Maker FCM 20	UPH/2023/ CEFOR/E/031	1	Ice production



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
17	Flake Ice Maker FCM 20	UPH/2023/ CEFOR/E/032	1	Ice production



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
18	Microhematocrit Centrifuge	UPH/2023/ CEFOR/E/033	1	Separation and determination of volume fractions of erythrocytes



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
19	Reflectron Plus	UPH/2023/ CEFOR/E/034	1	Determination of clinical chemistry parameters



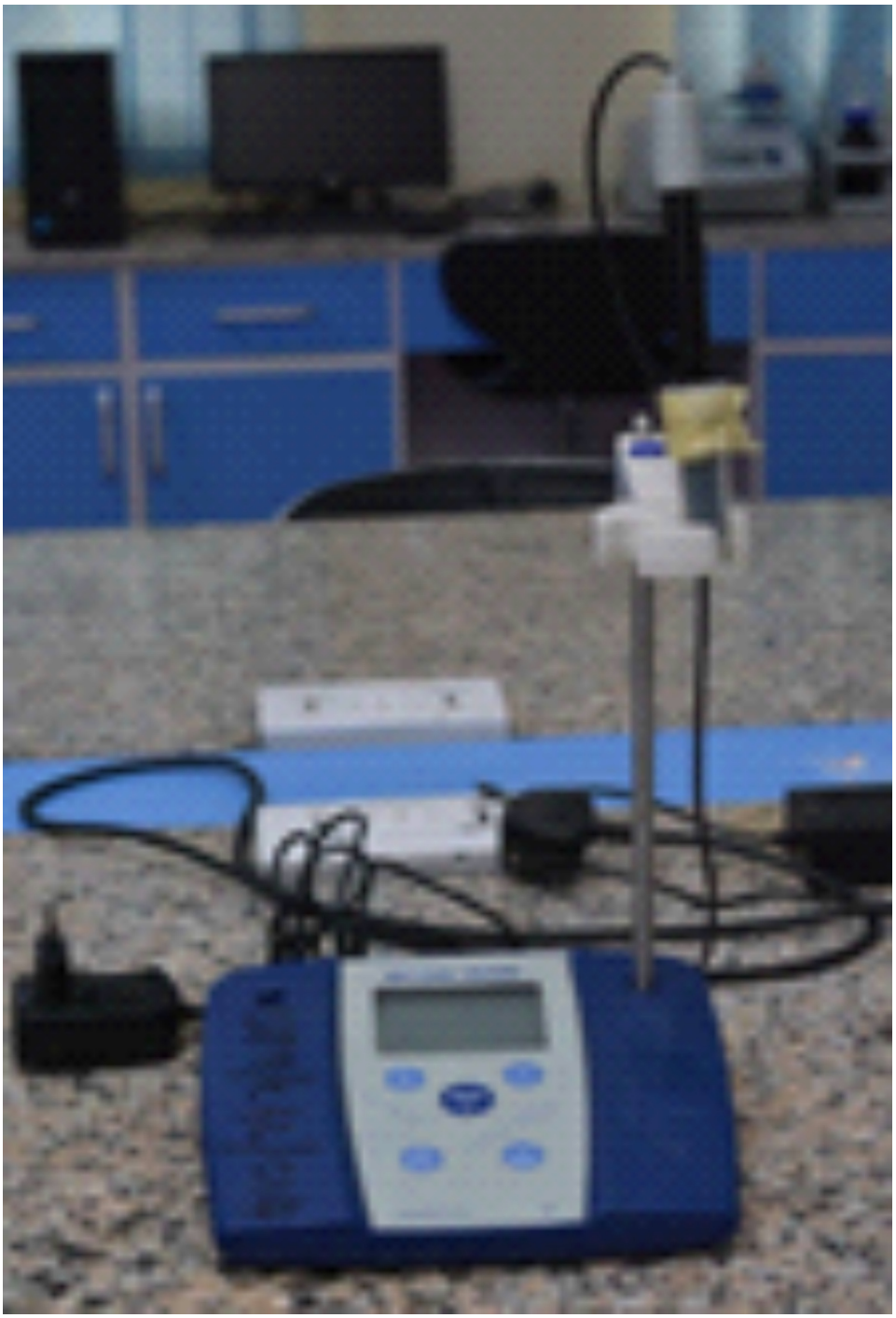
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
20	Emergency Shower / Eyewash	UPH/2023 /CEFOR/E/035	1	First Aid



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
21	EC/TDS/NaCl Meter HI-2300	UPH/2023/ CEFOR/E/036	1	Water analysis



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
22	pH Meter	UPH/2023/ CEFOR/E/037	1	Test pH



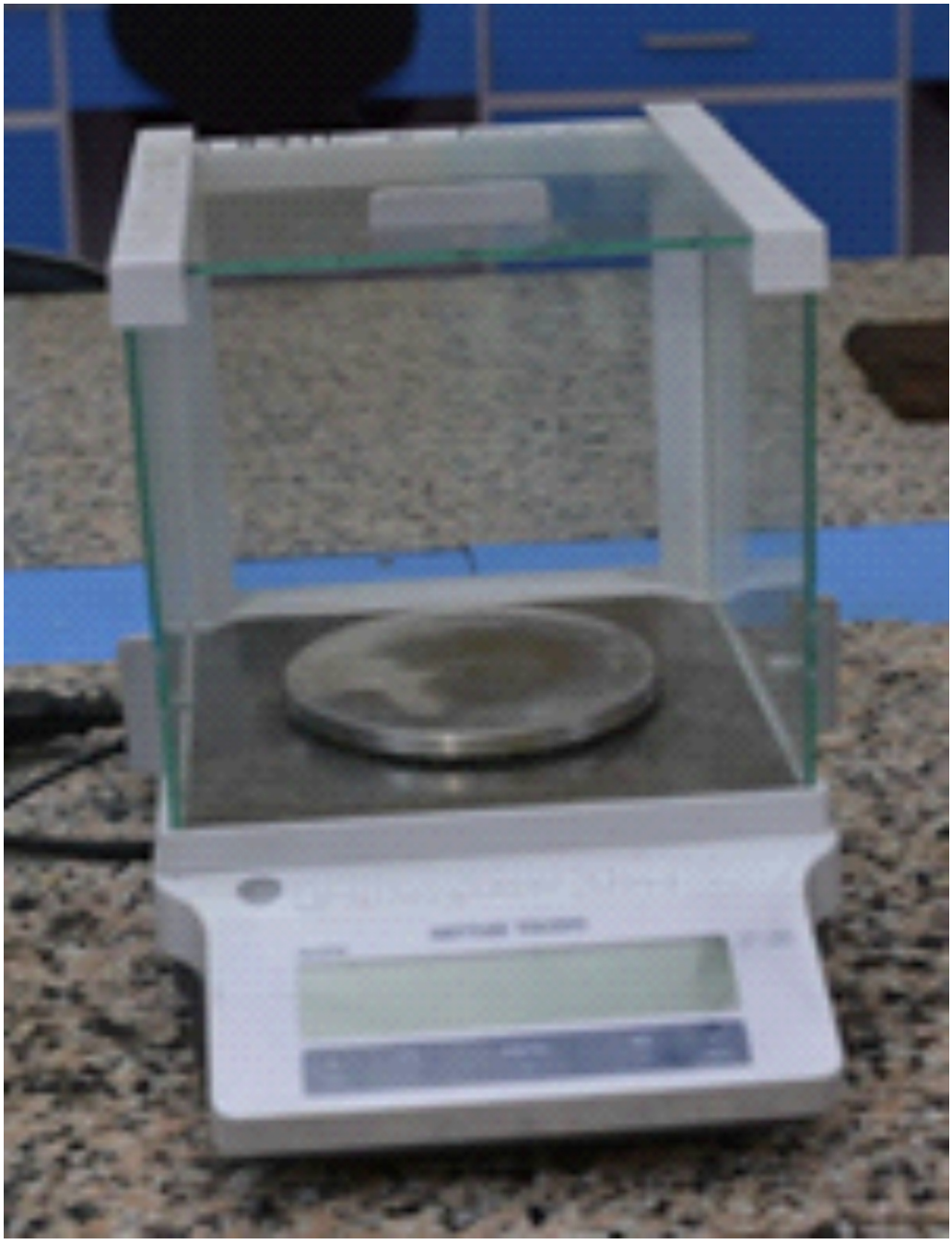
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
23	Titratable Total Alkalinity HI 84502	UPH/2023/ CEFOR/E/038	1	Alkalinity measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
24	Heating Mantle	UPH/2023/ CEFOR/E/039	1	Heating



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
25	Analytical Balance	UPH/2023/ CEFOR/E/040	1	Measurement of mass



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
26	Digital Magnetic Stirring Heating Mantle	UPH/2023/ CEFOR/E/041	1	Heating, mixing and blending



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
27	Refridgerator	UPH/2023/ CEFOR/FF/042	1	Cooling and Preservation



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
28	HPHT Filter Press ASTM A564	UPH/2022/ ACE-CEFOR/ LAB/E/001	1	Filtration loss measurement



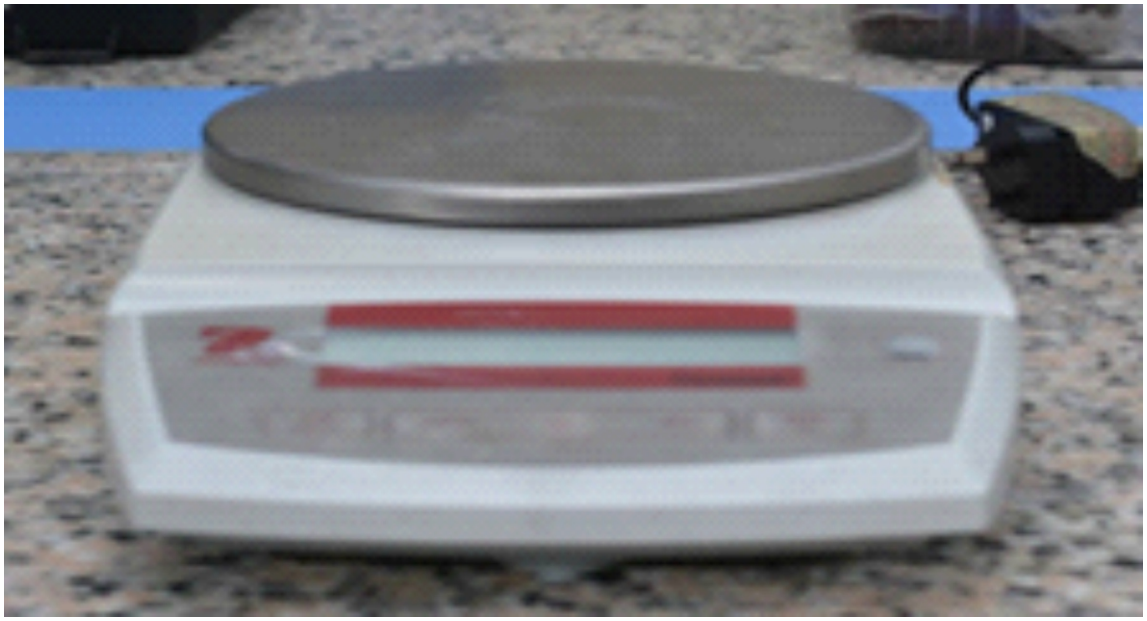
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
29	ASTM Filter Press ASTM A312	UPH/2022/ ACE-CEFOR/ LAB/E/002	1	Filtration loss measurement



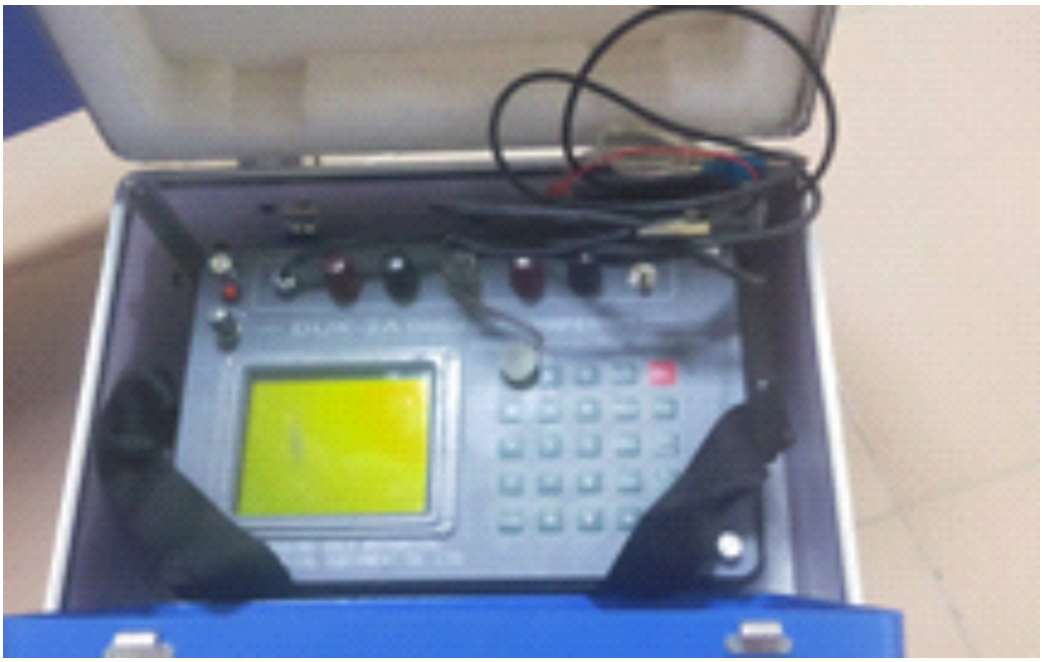
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
30	Atmospheric Mud Balance H-4790	UPH/2022/ACE-CEFOR/LAB/E/003	1	Specific Gravity



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
31	Electrical Balance Pa4102	UPH/2022/ACE-CEFOR/LAB/E/004	1	Mass measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
32	Electrical Resistivity Imaging System DUK-2A	UPH/2022/ACE-CEFOR/LAB/E/005	1	Imaging of subsurface structures



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
33	BOD Incubator TB 200/G	UPH/2022/ACE -CEFOR/LAB/ E/006	1	Measurement of amountof oxygen consumed by microorganism



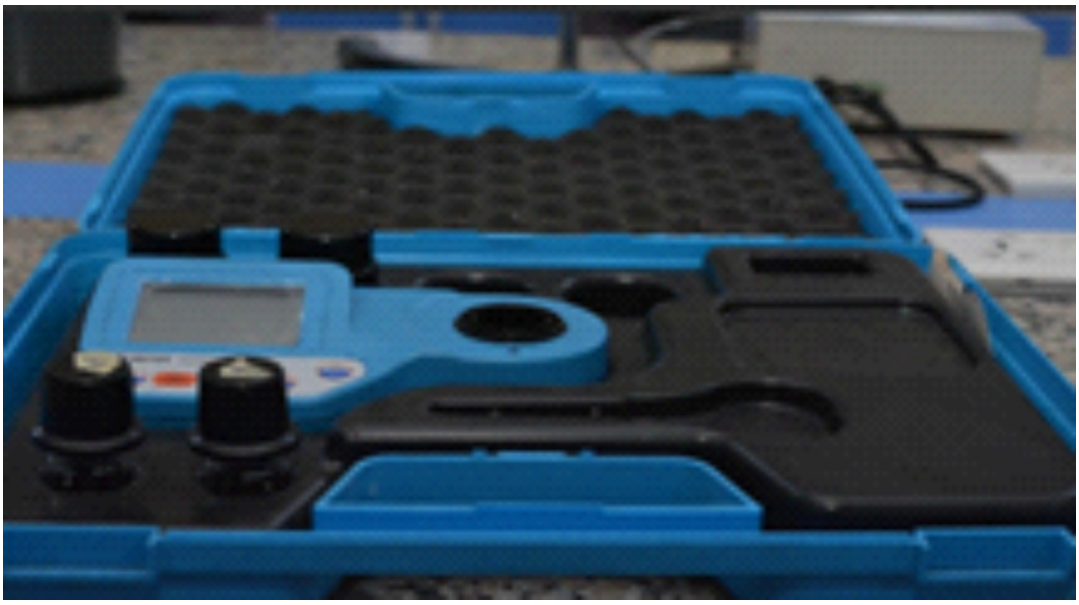
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
34	Biological Safety Cabinet 11231 BBC 86	UPH/2023/ CEFOR/E/010	1	Respiratory safety



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
35	Centrifuge 800 Speed	UPH/2022/ ACE-CEFOR /LAB/E/008	1	Fluid Separation



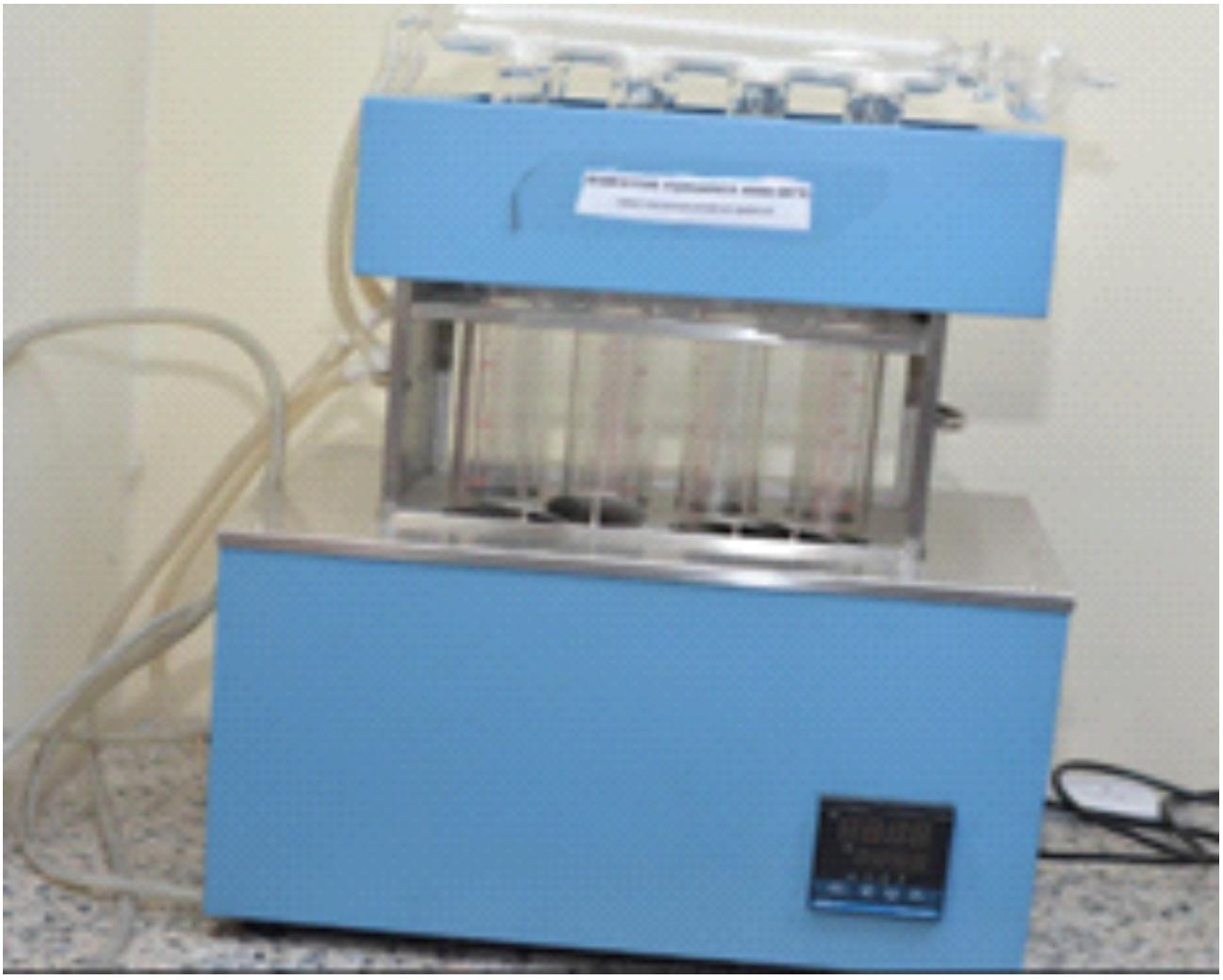
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
36	Chloride Portable Photometer	UPH/2022/ ACE-CEFOR/ LAB/E/009	1	Chloride measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
37	Double Lens Microscope i4	UPH/2022/ ACE-CEFOR /LAB/E/010	1	View magnified image of small specimen



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
38	Digestive Furnace KDN-08C	UPH/2022/ ACE-CEFOR/ LAB/E/011	1	Macroanalysis and semi-microanalysis of samples, such as nitrogen and protein content



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
39	Water Bath HH 600	UPH/2022/ ACE-CEFOR/ LAB/E/012	1	Sample conditioning



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
40	Drying Oven HG-9070A	UPH/2022/ ACE-CEFOR/ LAB/E/013	1	Drying



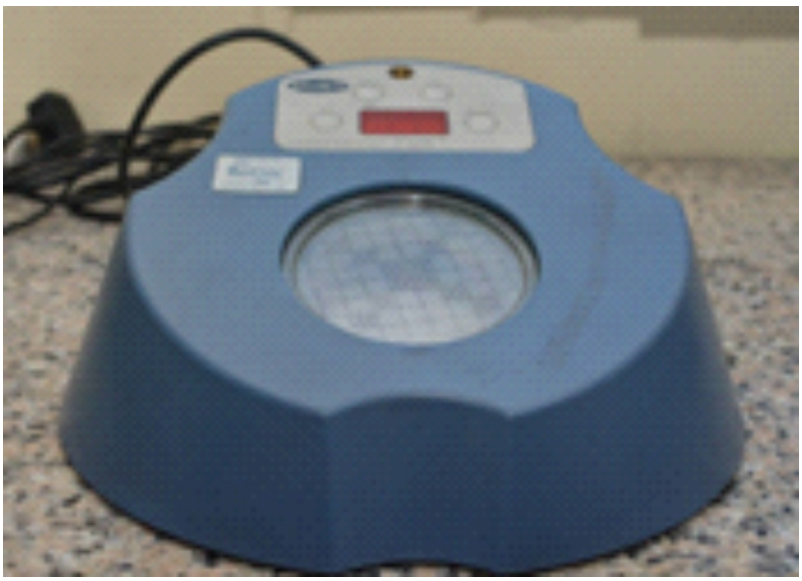
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
41	Table Steam Sterilizer Autoclave TM-XA20J	UPH/2022/ ACE-CEFOR/ LAB/E/014	1	Steam sterilization



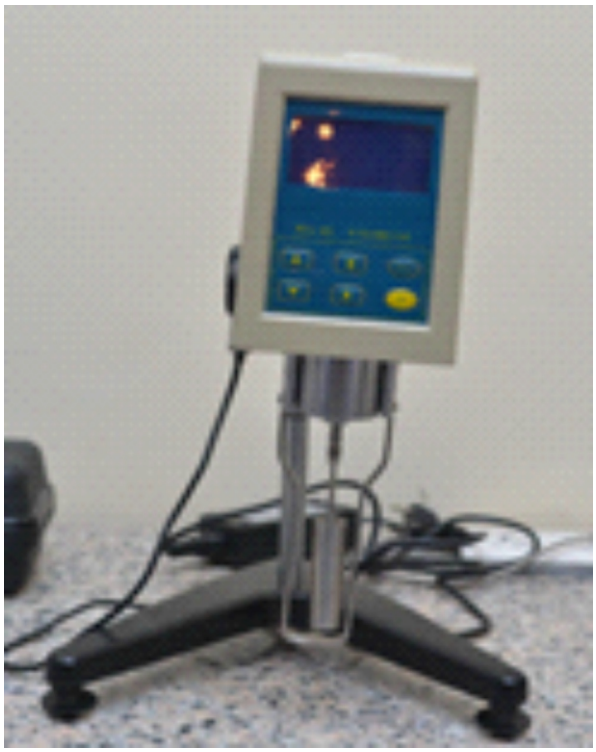
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
42	Rheometer DV3THBTJO	UPH/2022/ ACE-CEFOR/ LAB/E/015	1	Rheology and Viscosity Measurement



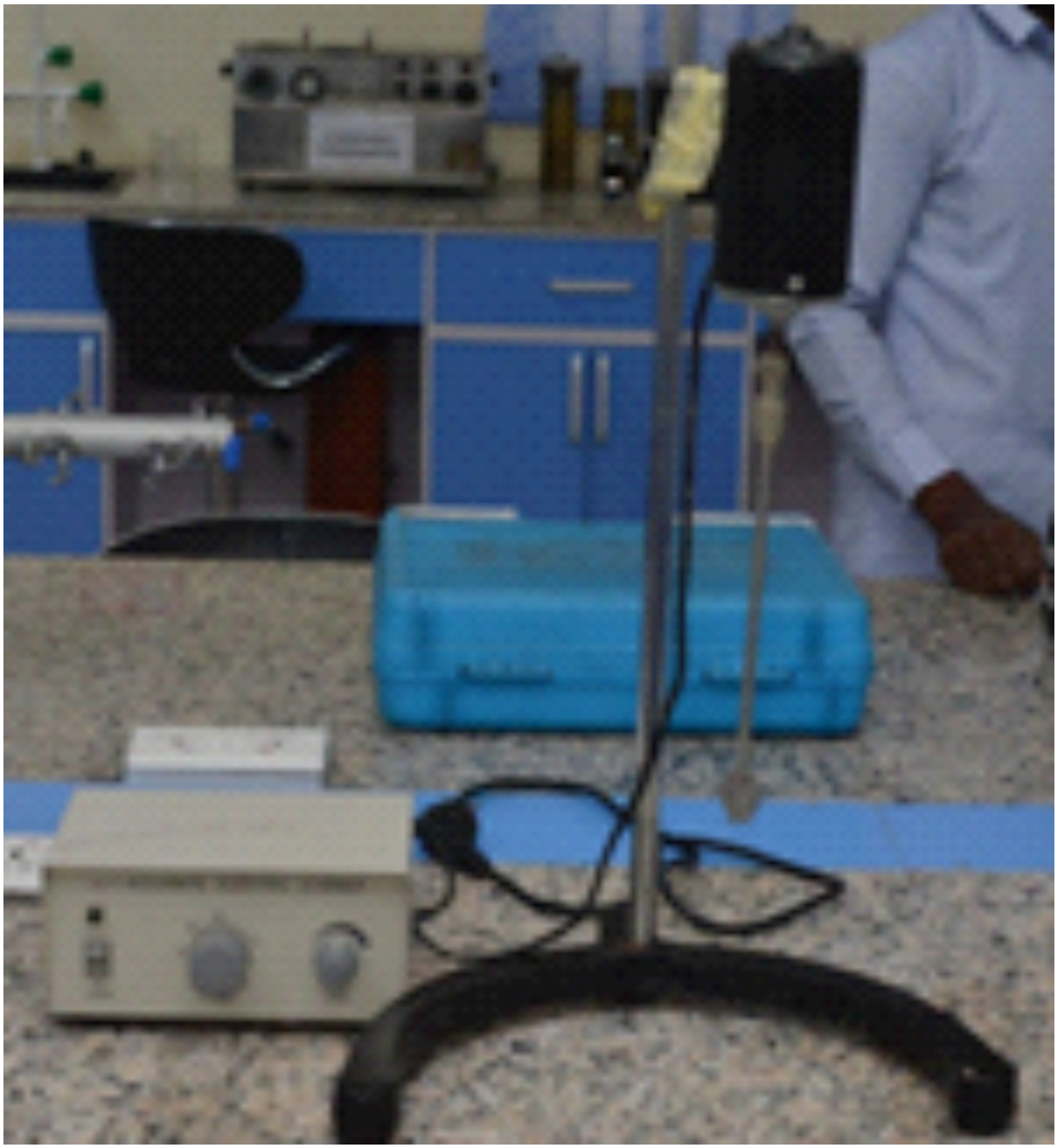
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
43	Colony Counter Sc6+	UPH/2022/ ACE-CEFOR/ LAB/E/016	1	Count microorganism / bacteria colonies



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
44	Viscometer NDJ-8S	UPH/2022/ ACE-CEFOR/ LAB/E/017	1	Viscosity Measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
45	JJ-Acurate Electrical Stirrer JJ-1	UPH/2022/ ACE-CEFOR/ LAB/E/018	1	Mixing and blending



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
46	Viscometer Thermo Cup 130-38-35	UPH/2022/ ACE-CEFOR/ LAB/E/019	1	Sample conditioning



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
47	Dylos Air Quality Monitor	UPH/2022/ ACE-CEFOR/ LAB/E/020	1	Air quality monitoring



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
48	Tetra 3 Portable Gas Detector	UPH/2022/ ACE-CEFOR/ LAB/E/021	1	Gas detector and monitoring



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
49	DO Analyzer	UPH/2022/ ACE-CEFOR/ LAB/E/022	1	Dissolved oxygen analysis



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
50	Viscometer 8 Speed 800	UPH/2022/ ACE-CEFOR/ LAB/E/023	1	Rheology and Viscosity Measur ement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
51	Scout Electrical Balance Small Scout SE	UPH/2022/ ACE-CEFOR/ LAB/E/024	1	Weighing



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
52	Viscometer Thermo Cup 130-38-35	UPH/2022/ ACE-CEFOR/ LAB/E/025	1	Sample conditioning



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
53	Deluxe Water and Soil Analyzer	UPH/2022/ ACE-CEFOR/ LAB/E/026	1	Water and Soil Analysis



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
54	Hydrometer	UPH/2022/ ACE-CEFOR/ LAB/E/027	1	Measurement of Specific Gravity



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
55	Conductivity Meter	UPH/2022/ ACE-CEFOR/ LAB/E/028	1	Conductivity measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
56	Lab Stirrer /Hot Plate	UPH/2022/ ACE-CEFOR/ LAB/E/029	1	Mixing and blending



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
57	Thermometer 741850	UPH/2022/ ACE-CEFOR /LAB/E/030	1	Temperature measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
58	Magnetic Stirrer HI 190M	UPH/2022/ ACE-CEFOR /LAB/E/031	1	Mixing and blending



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
59	Dew Point Hygrometer HI 96565	UPH/2022/ ACE-CEFOR/ LAB/E/032	1	Measurement of relative humidity



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
60	Flask Shaker Sf1	UPH/2022 /ACE-CEFOR /LAB/E/033	1	Sample agitation



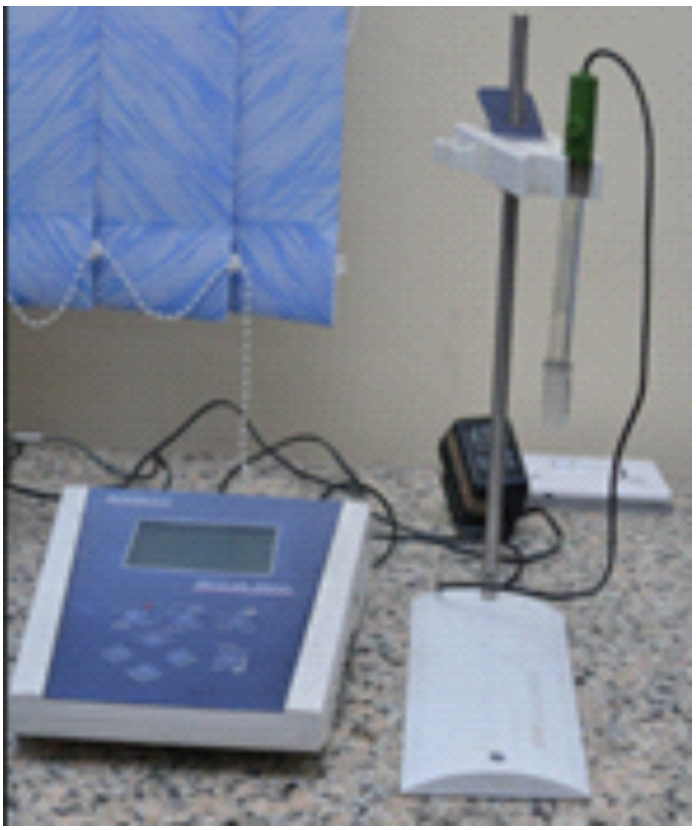
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
61	Dry Block Heater PE-4050	UPH/2022 /ACE-CEFOR /LAB/E/034	1	Sample conditioning



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
62	Sound Level Meter TES 1350A	UPH/2022/ ACE-CEFOR/ LAB/E/035	1	Measurement of Sound level



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
63	pH Meter 3510	UPH/2022/ ACE-CEFOR /LAB/E/036	1	Degree of Alkalinity & Acidity Measurement



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
64	Dry Cabinet140	UPH/2022/ ACE-CEFOR /LAB/E/037	1	Drying



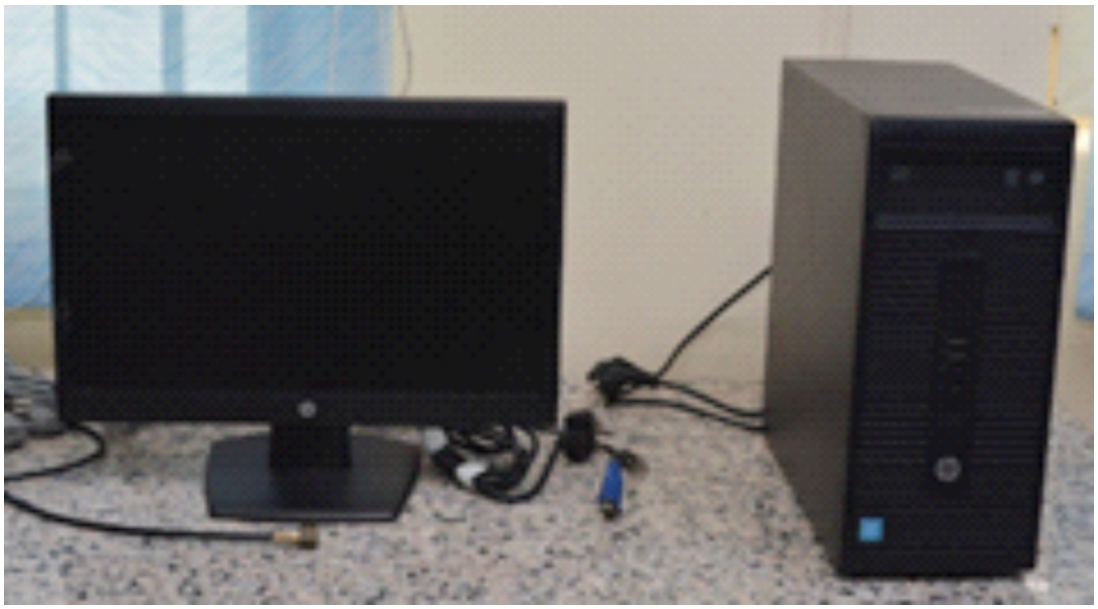
S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
65	Deluxe Water and Soil Analyzer	UPH/2022/ ACE-CEFOR/ LAB/E/038	1	Water and Soil Analysis



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
66	Potentiostat and Galvanostat PGSTAT204	UPH/2023/ CEFOR/E/007	1	Corrosion & Electrochemical Test



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
67	HP Desktop Computer	UPH/2023/ CEFOR/E /009A	1	Monitor



S/N	EQUIPMENT	CODE NO	QUANTITY	FUNCTION
68	Emerging Shower / Eyewash	UPH/2023/ CEFOR/E/011	1	First Aid



ACE-PUTOR

UNIVERSITY OF PORT-HARCOURT

CENTRE OF EXCELLENCE FOR PUBLIC HEALTH AND TOXICOLOGICAL RESEARCH (ACE-PUTOR)

Agilent Gas Chromatography-Mass Spectrometry (GC-MS) system, specifically a model like the Agilent 7890 GC coupled with a 5977 MS detector and an autosampler.



- Separates and identifies compounds in complex mixtures.
- Used in toxicology, environmental analysis, and pharmaceuticals.
- Provides both qualitative and quantitative data.
- High precision for volatile and semi-volatile compounds.
- Essential for drug testing and contaminant detection.

Atomic Absorption Spectrometer (AAS)



SHORT DESCRIPTION

An Atomic Absorption Spectrometer (AAS) is an analytical instrument used to determine the concentration of metal elements in a sample. It works by measuring the amount of light absorbed by free atoms in the gaseous state.

Functions:

1. Quantitative Analysis of metals such as lead, copper, zinc, calcium, and iron.
2. Element-Specific Detection using light sources (usually hollow cathode lamps) for each metal.
3. High Sensitivity in detecting trace levels of metals.
4. Sample Analysis in solution form, often after digestion of solid or complex materials.

Applications:

Environmental Testing: Monitoring metals in water, soil, and air.
Food and Beverage Industry: Checking for metal contamination or nutrient content.
Clinical Laboratories: Measuring metal levels in blood, urine, or tissues.
Pharmaceuticals: Quality control for metal impurities.
Mining and Metallurgy: Determining metal content in ores and alloys.

Randox Evidence Investigator
Serial Number: Ei23804



Description:
The Randox Evidence Investigator is a semi-automated biochip-based immunoassay analyzer designed for multiplex testing—allowing the simultaneous detection of multiple biomarkers from a single sample.

Functions:
1. Multiplex Testing: Analyzes multiple analytes (e.g., proteins, drugs, hormones) in one run.
2. High Throughput: Processes multiple samples efficiently using biochip array technology.
3. Accurate and Reliable: Uses chemiluminescent detection for sensitive and specific results.
4. Sample Types: Works with serum, plasma, urine, and other biological samples.

Applications:
Clinical Diagnostics: Testing for cardiac, renal, liver, and metabolic biomarkers.
Toxicology: Screening for drugs of abuse and therapeutic drug monitoring.
Veterinary Testing: Animal health screening.
Research: Biomarker discovery and disease profiling.

Biobase Automatic Chemistry Analyser



Description:
An Automatic Chemistry Analyzer is a laboratory instrument used to automatically measure chemical components in biological samples like blood, urine, or plasma. It streamlines biochemical testing with high speed and accuracy.

Functions:
1. Automated Testing of multiple biochemical parameters (e.g., glucose, urea, creatinine).
2. High Throughput: Processes large numbers of samples quickly.
3. Accurate Quantification using photometric, colorimetric, or enzymatic methods.
4. Sample Handling: Automatically dilutes, mixes, and measures samples and reagents.

Applications:
Clinical Diagnostics: Routine testing in hospitals and labs for liver function, kidney function, lipid profile, etc.
Emergency Testing: Rapid biochemical analysis in critical care settings.
Research Laboratories: Monitoring biochemical changes in experimental studies.
Veterinary Medicine: Biochemistry tests for animal health.

Hematology Analyser



Description:
The Zybio Hematology Analyzer is an automated diagnostic device used to analyze blood samples for hematological parameters. It provides a Complete Blood Count (CBC) and differentiates various types of blood cells.

Functions:
Performs automated analysis of red blood cells (RBCs), white blood cells (WBCs), hemoglobin (Hb), hematocrit (HCT), platelets, etc.
Delivers accurate and rapid results with minimal manual input.
Supports both routine and emergency blood testing.

Applications:
Hospital laboratories for routine CBC testing.

Applications:
Hospital laboratories for routine CBC testing.
Blood banks for donor screening.
Clinics and research facilities for diagnosing anemia, infections, and blood disorders

Microwave Digester
Model: BMD-12H

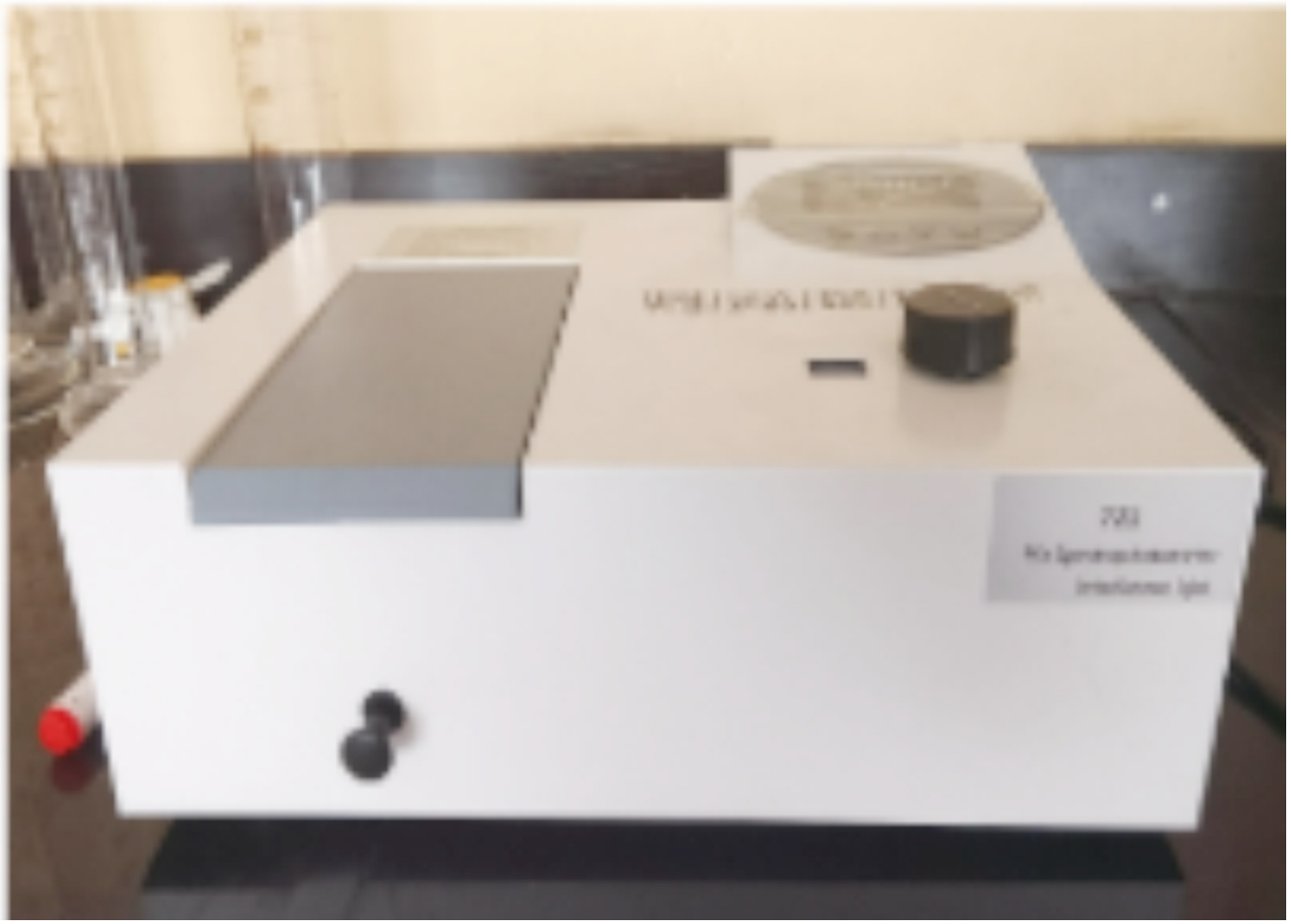


Description:
The Microwave Digester is a closed-vessel, high-pressure digestion system that uses microwave energy to rapidly and uniformly heat chemical samples for digestion, especially for metal analysis.

Functions:
Prepares samples by breaking down organic matrices using acids under controlled temperature and pressure.
Reduces digestion time from hours to minutes.
Minimizes contamination and preserves volatile elements.

Applications:
Sample preparation for heavy metal analysis using AAS, ICP-MS, or ICP-OES.
Used in environmental, food, pharmaceutical, and agricultural laboratories.

Visible Spectrophotometer



Description:
A VIS spectrophotometer measures the absorbance or transmittance of visible light by a sample, usually in the 400–700mm range.

Functions:

- Quantifies concentrations of colored solutions using Beer-Lambert law.
- Monitors reaction progress in biochemical assays.
- Uses cuvettes to hold liquid samples during analysis.

Applications:

- Chemical and biochemical analysis.
- Quality control in food and beverage industries.

Educational use in teaching laboratories.

Hematocrit Centrifuge Sh120



Description
The Hematocrit centrifuge SH 120 is a laboratory centrifuge used to separate mixtures based on density by spinning samples at high speed.

Functions:

- Separates blood components (e.g., plasma, serum, cells).
- Used in the preparation of urine sediments or precipitates.
- Ensures precise and stable rotational speed with safety features.

Applications:

- Clinical labs for blood and urine analysis.
- Microbiology and biochemistry sample preparation.
- Research labs requiring solid-liquid separations.

Electrophoresis Machine
Model: Ia2205095



Description:
The DY-300 Electrophoresis Machine is used for the separation and analysis of DNA, RNA, or protein molecules based on their size and charge through a gel matrix.

Functions:
Applies an electric field to move charged biomolecules through agarose or polyacrylamide gels.
Allows visualization of molecular weight patterns after staining.
Offers high resolution in genetic and protein studies.

Applications:
Molecular biology and genetics research.
DNA fingerprinting and forensic investigations.
Protein analysis in biomedical labs.

Deep Freezer
Model: DW 25L300
Manufacturing Company: Haier Biomedical Co. LTD
Inner Temperature: -10°C to -25°C



- Preserves biological and chemical samples for long-term storage.
- Maintains temperature-sensitive reagents and enzymes.
- Prevents degradation of blood, serum, and plasma samples.
- Supports research activities requiring sub-zero conditions.
- Used for vaccine and pharmaceutical storage.

Simrah Wet & Dry Hygrometer



The Simrah Wet & Dry Hygrometer, is an instrument used to measure both air temperature and humidity. It consists of two thermometers: a dry-bulb thermometer that measures the air temperature and a wet-bulb thermometer with a cloth-covered bulb that measures temperature affected by evaporation. The difference between the two readings is used to determine the relative humidity.

This type of hygrometer is commonly used in various settings:

Homes and workplaces: To monitor humidity levels for comfort and health.

Laboratories and industrial settings: To ensure proper environmental conditions for experiments and manufacturing.

Agricultural fields and greenhouses: To maintain optimal humidity for plant growth.

Food preservation and storage: To prevent spoilage and maintain product quality.

Pharmaceutical storage and manufacturing: To prevent changes in the chemical composition of hygroscopic products.

Meteorology: To measure humidity for weather forecasting and analysis.

To use this hygrometer, the wet-bulb thermometer's cloth should be moistened, and the instrument is then exposed to the air. The difference in temperature between the two thermometers is used with a psychrometric chart or a slide pointer on the device to determine the humidity.

Temptop Air Quality Monitor



The device in the image is a Temtop LKC-1000E Air Quality Monitor. It is a portable, handheld device designed to measure various air pollutants, including PM2.5, PM10, formaldehyde (HCHO), and the Air Quality Index (AQI).

Description:

This monitor uses a laser particle sensor and an electrochemical sensor to detect pollutants. It provides real-time data on air quality, displaying measurements on a TFT screen. The device features a display screen, a power button, and buttons to switch between different measurements, It is powered by a rechargeable lithium battery.

Use and Applications:

Indoor Air Quality Monitoring:

Pollutant Measurement:

Health Assessment:

The AQI reading helps users understand the overall air quality and its potential health impacts.

Portable:

Data Recording:

It can record, save, and export historical data for analysis.

Calibration:

The formaldehyde sensor may need occasional calibration for optimal accuracy.

This device is used to help individuals monitor and improve the air quality in their environment, contributing to better health.

Digital Sound Level Meter



This is a digital sound level meter, also known as a decibel meter. It's a device used to measure the intensity of sound in decibels (dB).

Description:

Display: It has an LCD screen to show the sound level readings.
Buttons: Usually includes buttons for power, maximum/minimum readings, and backlight.
Microphone: A microphone at the end captures the sound.
Body: Typically made of plastic and designed for handheld use.

Use:

Environmental Monitoring: Measures noise levels in residential areas, workplaces, and public spaces.
Occupational Safety: Checks noise levels in industrial settings to protect workers' hearing.
Sound Engineering: Helps in setting up audio equipment for optimal sound quality.
Research: Used in scientific studies to analyze sound characteristics.

Application:

Construction: Measures noise from machinery and equipment.
Entertainment: Checks sound levels at concerts and events.
Healthcare: Monitors noise levels in hospitals and clinics.
Transportation: Measures noise from vehicles and aircraft.
Sound level meters are essential for ensuring compliance with noise regulations and maintaining a healthy environment. They help in identifying and mitigating noise pollution in various settings.

GQ GMC-300E Plus Geiger Muller Counter Data Logger



GQ GMC-300E Plus Geiger Muller Counter Data Logger,These devices are used to detect and measure ionizing radiation, such as beta, gamma, and X-ray radiation. They are also known as Geiger-Muller counters.

Description:

Name: GQ GMC-300E Plus Geiger Muller Counter Data Logger

Type: Portable nuclear radiation detector.

Uses and Applications:

Environmental monitoring: Measuring background radiation levels.

Food safety: Checking seafood, fruits, and imported foods for radiation contamination.

Medical applications: Monitoring radiation levels during radioiodine therapy.

Industrial safety: Testing scrap metal and building materials.

General purposes: Real-time testing and scientific testing.

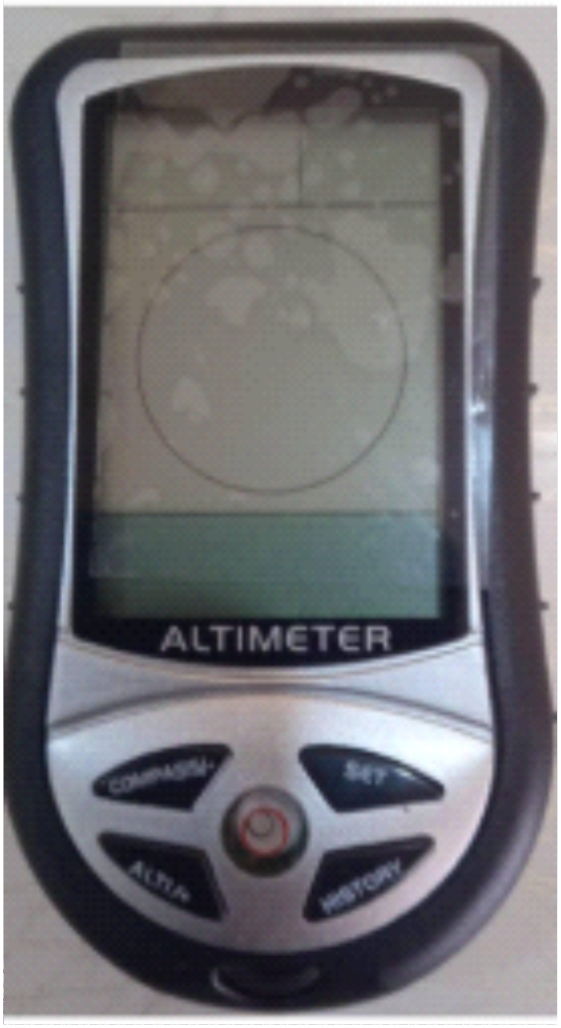
Personal use: Monitoring personal radiation exposure.

How it Works:

The device uses a Geiger-Muller tube to detect radiation. When radiation enters the tube, it ionizes the gas inside.

This ionization creates an electrical pulse that is counted by the device. The device displays the radiation level in counts per minute (CPM) or other units.

Digital Altimeter



his is a digital altimeter, a device that measures altitude using barometric pressure. It is often used in outdoor activities like hiking and climbing to determine the user's height above sea level.

Key features of this device include:

Altimeter: Measures altitude based on atmospheric pressure.

Compass: Provides directional information.

Barometer: Measures atmospheric pressure, useful for weather forecasting.

Thermometer: Measures temperature.

Clock and calendar: Displays time and date.

Backlight: For easy viewing in low-light conditions.

The device is designed for outdoor use, with a detachable string for easy carrying.

It is powered by batteries and features an LCD display for clear readings. Altimeters are also used in aviation for measuring the altitude of aircraft.

Water Quality Test Kit

The water quality kit is a portable set of tools and reagents used to assess the quality of water by testing for various chemical and physical parameters. It usually includes items like beakers, colorimetric reagents, test strips, and a color chart. These kits are used to check for contaminants, pH levels, and the presence of certain substances, ensuring water is safe for drinking, industrial use, or environmental monitoring.



The kit's application spans various sectors. It's critical for ensuring public health by verifying the safety of drinking water. In industrial settings, these kits are used to monitor water quality for manufacturing processes and to prevent equipment damage. Environmental agencies use them to assess the health of natural water bodies, such as rivers and lakes, and to detect pollution. The kit's portability allows for on-site testing, providing immediate results and enabling timely interventions. This kit is a portable set of tools and reagents used to assess the quality of water by testing for various chemical and physical parameters. It usually includes items like beakers, colorimetric reagents, test strips, and a color chart. These kits are used to check for contaminants, pH levels, and the presence of certain substances, ensuring water is safe for drinking, industrial use, or environmental monitoring.

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Turbidity Meter



The device in the image is a turbidity meter. It is used to measure the cloudiness or haziness of a liquid, caused by suspended particles.

Description:

It features a digital display for reading measurements.

It has buttons for zero adjustment and correction.

It has a compartment for holding sample tubes.

Application and Use:

Water Quality Testing: It is widely used to assess the quality of drinking water, wastewater, and natural water bodies.

Environmental Monitoring: It is used to monitor the impact of pollutants on water and ecosystems.

Industrial Processes: It is used in various industries such as beverage, pharmaceutical, and chemical to ensure the quality of their products.

Laboratory Analysis: It is used in research and analysis to measure the turbidity of various liquids.

Wastewater Treatment: It is used to monitor the efficiency of treatment processes.

Power Plants: It is used to test the quality of water used in power generation.

The meter works by shining a light through the liquid and measuring the amount of light that is scattered by the particles. The higher the amount of scattered light, the higher the turbidity. Turbidity is measured in Nephelometric Turbidity Units (NTU).

Stadiometer (Height Measurement Scale)



Description:
A vertical measuring instrument designed to accurately record human height.

Functions:
Often used with weight scales to calculate Body Mass Index (BMI).
Consists of a fixed upright ruler and a movable headpiece.
Manual or digital versions available.

Applications:
Nutritional assessment in public health surveys.
Growth monitoring of children in immunization programs.
Used in school health screenings and anthropometric studies

Microscope



Description:
An optical instrument that magnifies small objects, allowing for observation of cells, microorganisms, and other microscopic structures.

Functions:

- Offers 4x to 1000x magnification, depending on model.
- Equipped with objective lenses, illuminator, and sometimes a camera system.
- Enables viewing of cell morphology, bacteria, and parasites.

Applications:

- Diagnosis of infectious diseases (malaria, tuberculosis).
- Used in parasitology, microbiology, and cytology labs.

Essential for training and research in public health education

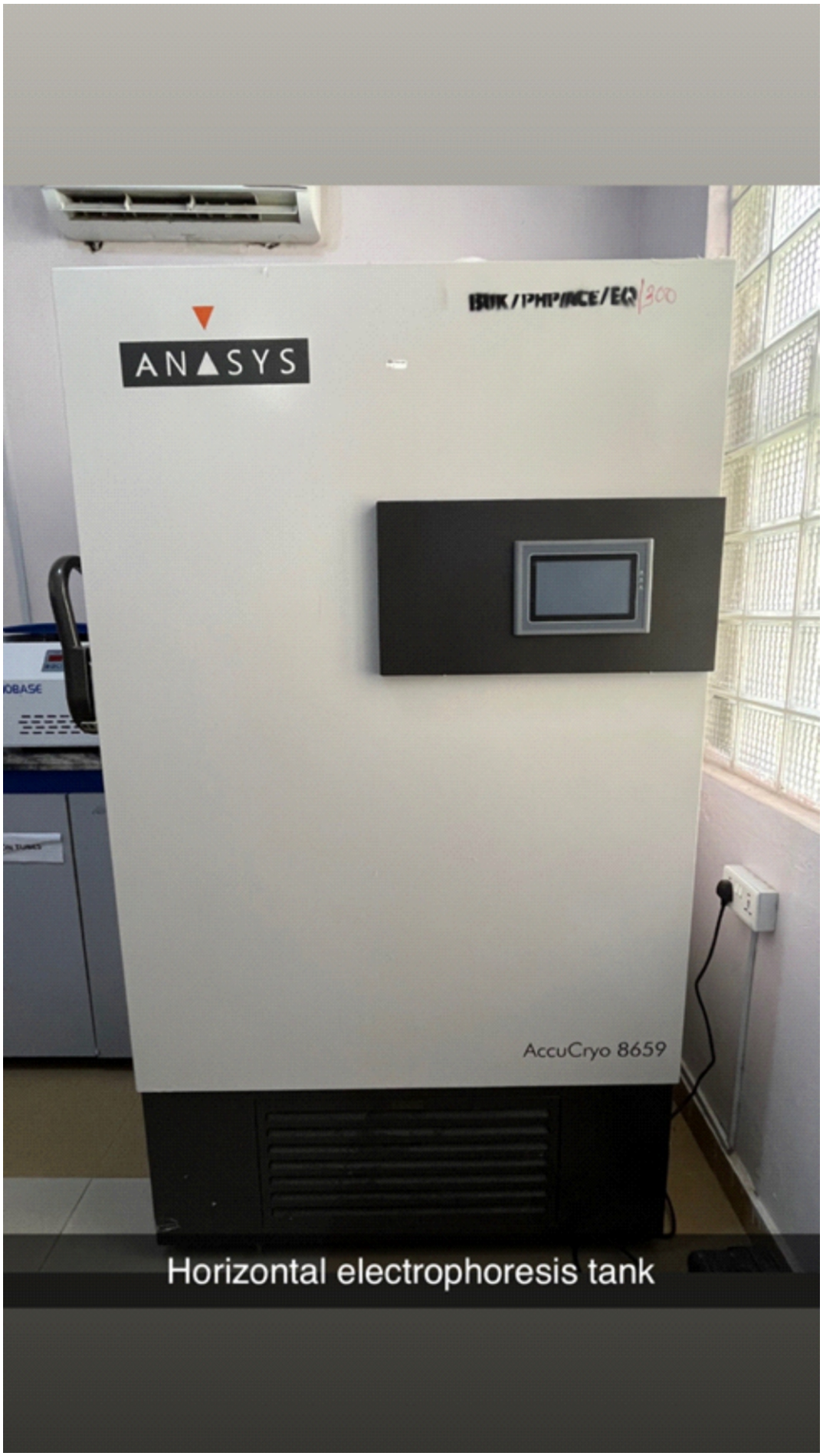
BAYERO UNIVERSITY, KANO

CENTER OF EXCELLENCE FOR POPULATION HEALTH AND POLICY (ACEPHAP)

Item	Description	Location
Business Consult	Prefabricated portacabin, 4- rooms provision, 12-seater arranged, fully furnished with A/Cs, interrupted power supply, unlimited internet services	ACEPHAP
Simulation Laboratory	The ACEPHAP Simulation Lab is a state-of-the-art training facility where numerous faculty members and healthcare professionals have honed their clinical skills. The lab features advanced simulation technologies, including high-fidelity mannequins such as the Maternal Birthing Simulator for obstetric training, the Newborn HAL Infant Simulator for neonatal care, and a low-fidelity newborn patient simulator for essential procedural practice.	ACEPHAP
CPR Model	Adult size, for BLS demonstration,	Simulation Lab
PELVIC MODEL	SAWBONES, Full female pelvis for evacuation training. Includes uterus, vagina, and vaginal opening. Mounted on a clear acrylic base.	Simulation Lab
GLOBAL WOMAN CARE	GLOBAL WOMAN CARE	Simulation Lab

ZOE Gynecologic Simulator, Light	Demonstrate multiple gynecologic procedures, such as MVA, laparoscopic examination and minilaparotomy	Simulation Lab
Suture Skills Pads	Surgireal, Simulated skin pads for suture practice.	Simulation Lab
Zoe Gynecologic Skills Trainer	Gaumard Scientific, Adult-sized lower torso for various gynecologic skills	Simulation Lab
Super OB Susie	Gaumard Scientific, Super OB Susie, Childbirth training torso for labour and delivery management skills	Simulation Lab
Newborn Pedi	Low-fidelity newborn patient simulator for neonatal procedural skills	Simulation Lab
Infant Simulator	Newborn Hal High fidelity simulator used for any infant scenarios	Simulation Lab
Maternal Birthing Simulator	High fidelity simulator used for any OB care or adult scenarios	Simulation Lab
Interactive Screen	aaztec IFPD, touchscreen display with camera. Window and android capability	ACEPHAP
Solar streetlight	Dual illumination wall and pole mount	ACEPHAP
110KVA Gnerator	FG willson Perkins Generator	ACEPHAP


UVC EXPOSURE WARNING
Delay Switch Designed to Protect Your Eyes
Remind You Leave Before It's On
UV sanitizer lamp with ozone filtration, USB rechargeable



Horizontal electrophoresis tank



Automatic gel imaging analysis system (for DNA and western blotting analysis)

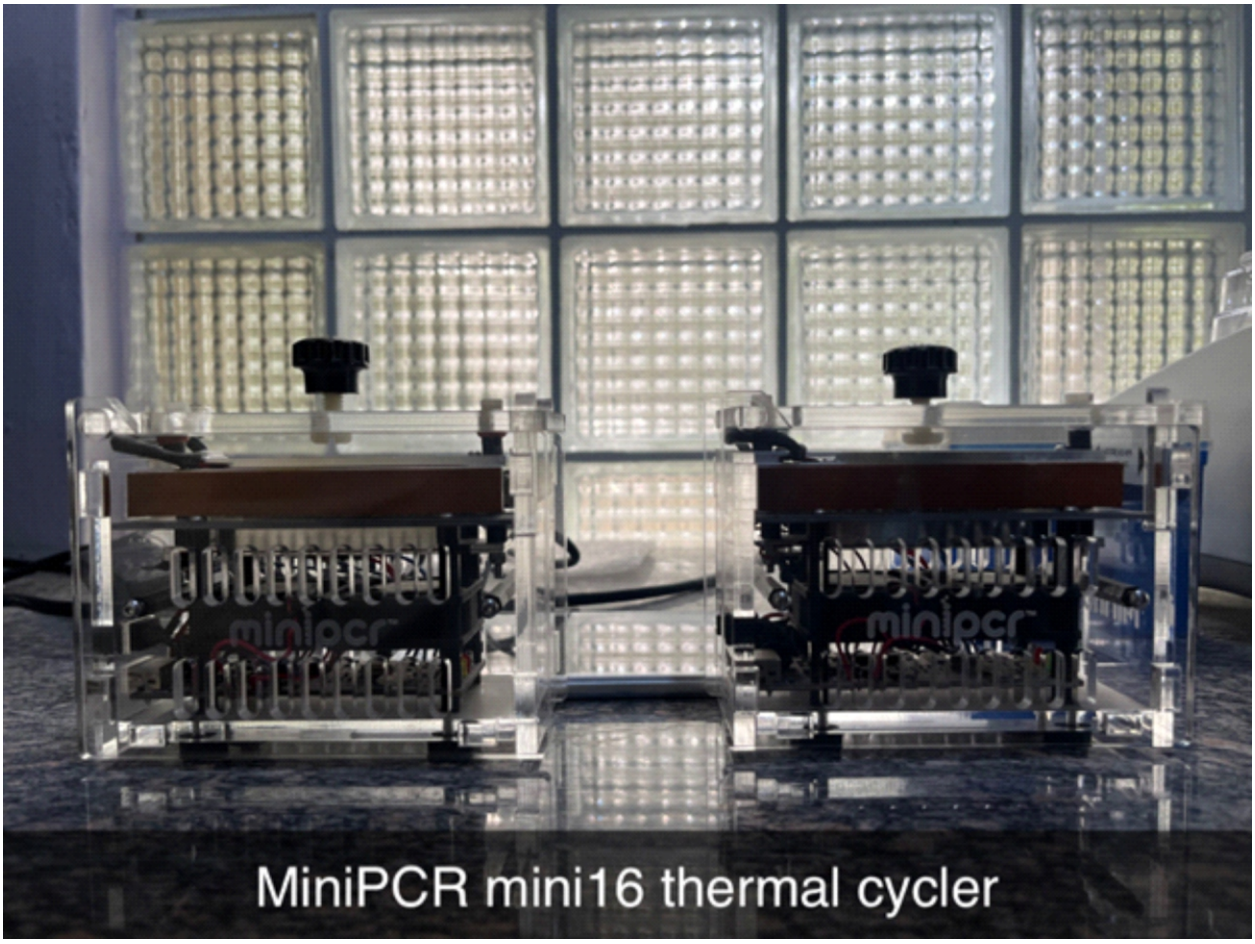

BIOBASE
SET
OK
Electrophoresis Apparatus Power Supply
Microplate centrifuge, pcr plate spinner 2 place rotor


Mini vortex mixer, variable speed


Micro centrifuge my spin 6

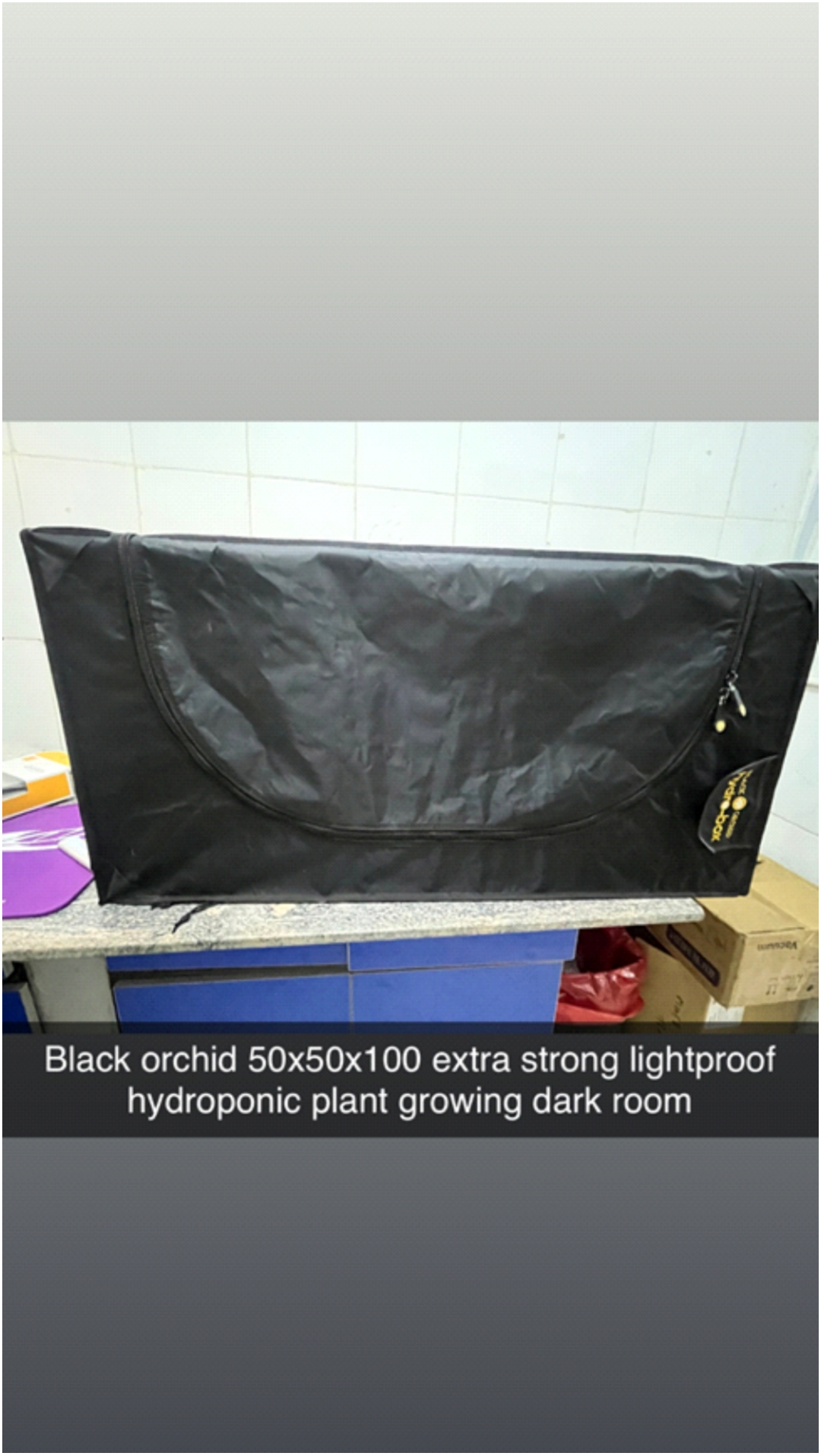


Quantus Fluorometer


MiniPCR mini16 thermal cycler


Mastercycler X50s

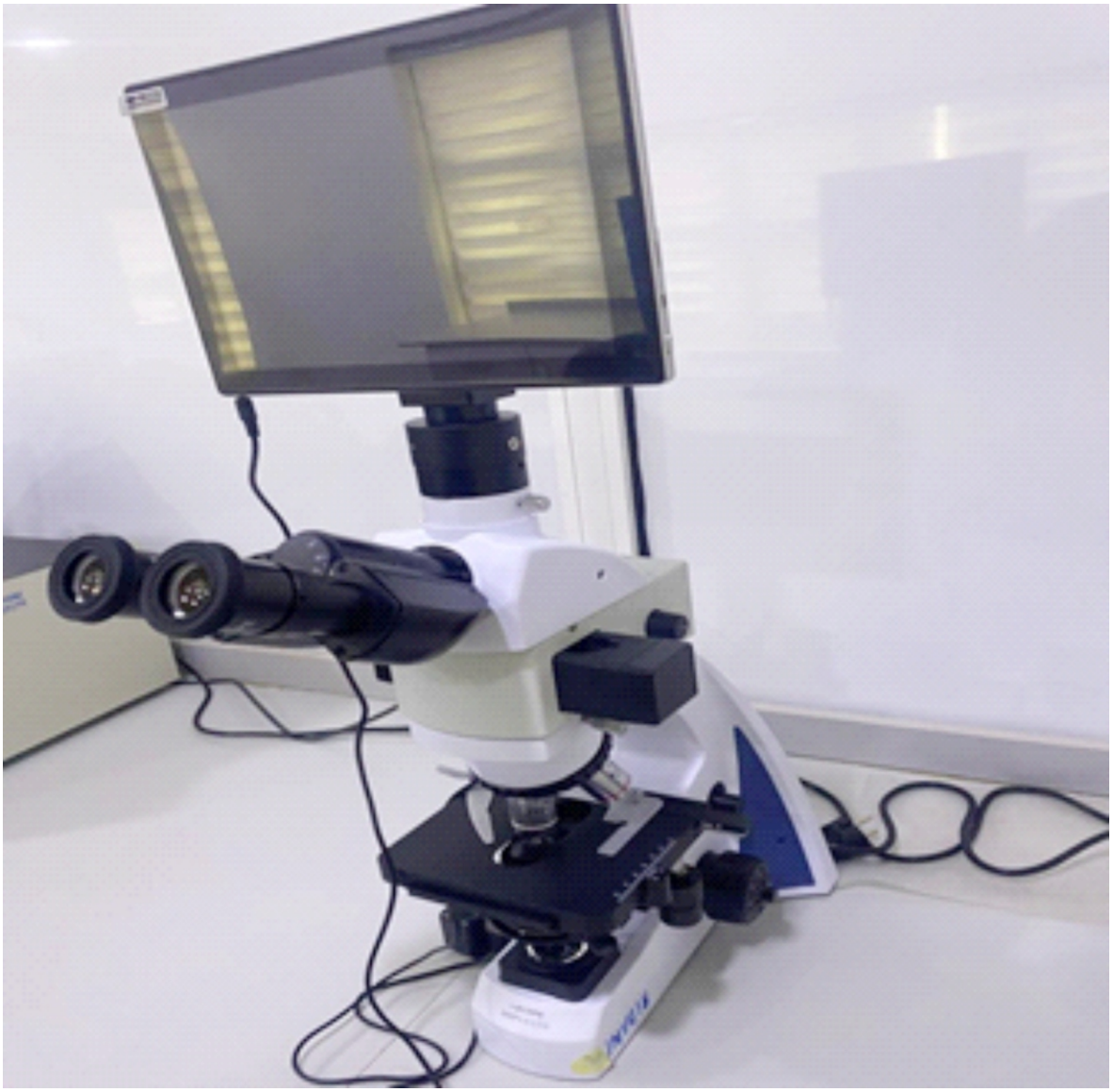

BIOBASE
VOTEX MIXTURE
EQ 1
Auto
Off
Touch
BK-VX 1


Black orchid 50x50x100 extra strong lightproof
hydroponic plant growing dark room

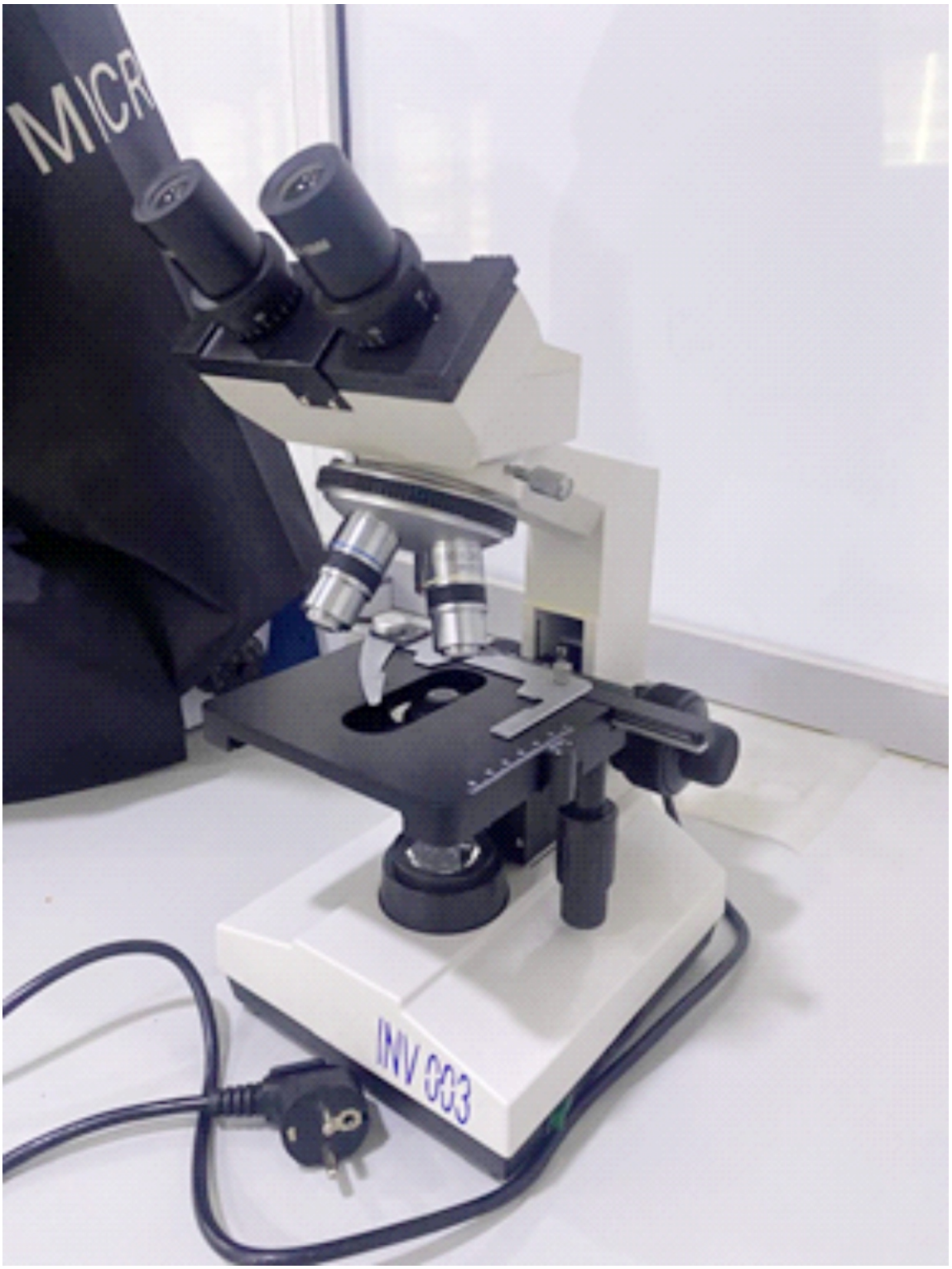
COVENANT UNIVERSITY

CENTRE OF EXCELLENCE FOR APPLIED INFORMATICS AND COMMUNICATION (CAPIC)

S/N	EQUIPMENT	DESCRIPTION
1	Trinocular Fluorescent Microscope	A high-resolution microscope with three viewing ports and fluorescent lighting for observing samples tagged with fluorescent dyes.



S/N	EQUIPMENT	DESCRIPTION
2	Binocular Light Microscope	A standard light microscope with two eyepieces, used for examining stained or transparent specimens.



S/N	EQUIPMENT	DESCRIPTION
3	Trinocular Microscope	A compound microscope with two eyepieces and one camera port for live imaging and documentation.



S/N	EQUIPMENT	DESCRIPTION
4	Cell Harvester	Used to collect cells from multiwell plates or flasks, commonly in immunology and cell culture studies.



S/N	EQUIPMENT	DESCRIPTION
5	High-Speed Micro Centrifuge	A compact centrifuge capable of spinning small volume samples at very high speeds for rapid separation.



S/N	EQUIPMENT	DESCRIPTION
6	Single Door Cooler	A refrigerated storage unit is used for preserving temperature-sensitive samples.



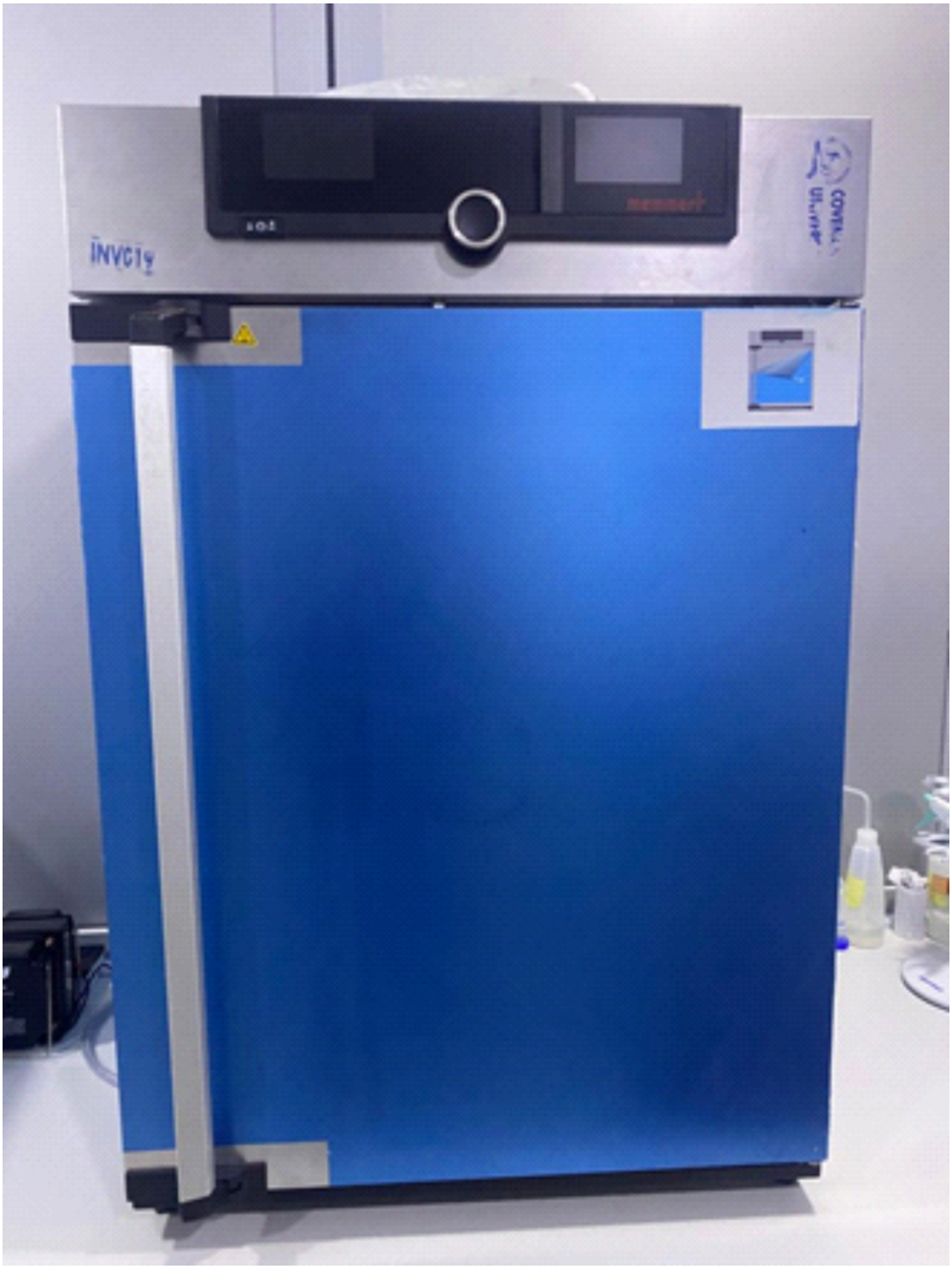
S/N	EQUIPMENT	DESCRIPTION
7	Benchtop Centrifuge	Medium-speed centrifuge for routine sample separation in tubes.



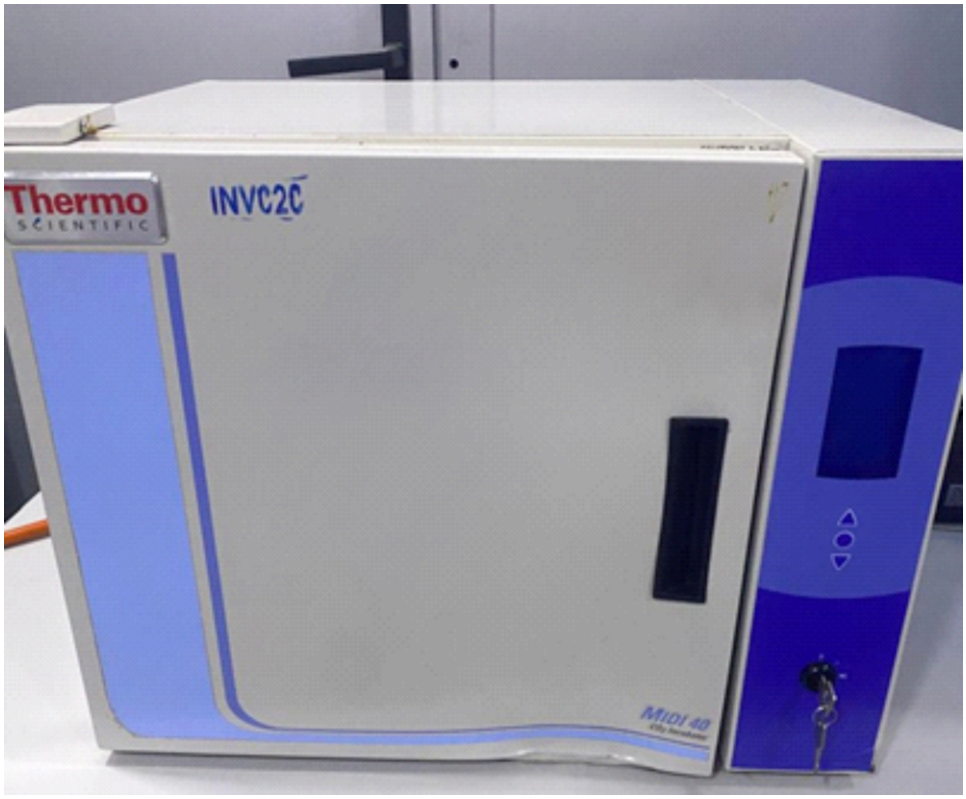
S/N	EQUIPMENT	DESCRIPTION
8	Class II Biological Safety Cabinet	Enclosed ventilated lab workspace ensuring both sample and user protection from biohazards.



S/N	EQUIPMENT	DESCRIPTION
9	CO2 Incubator/Oven	Provides a controlled CO_2 atmosphere for optimal cell growth conditions.



S/N	EQUIPMENT	DESCRIPTION
10	Midi CO2 Incubator	A mid-sized incubator for maintaining CO_2-enriched environments in cell culture.



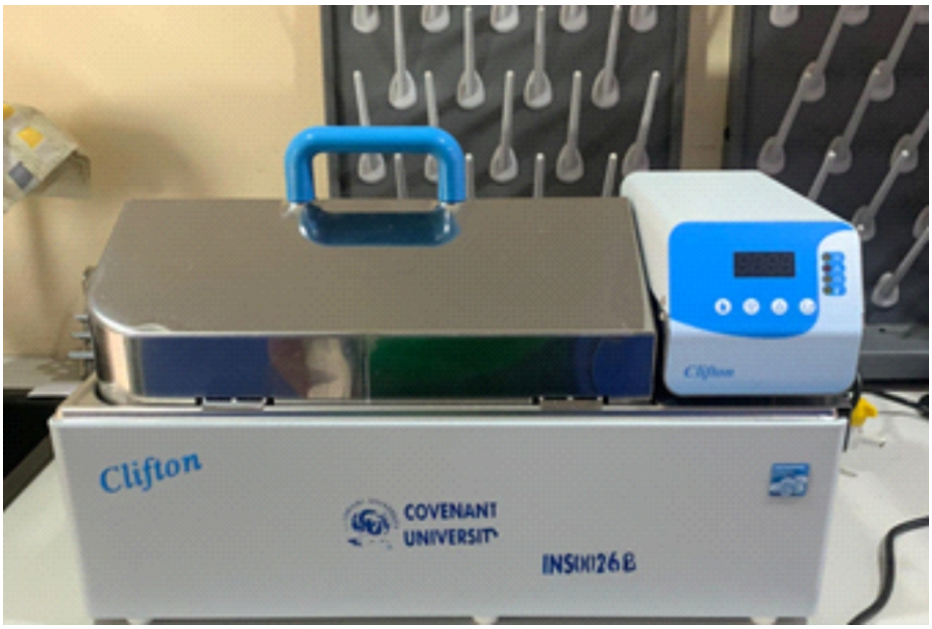
S/N	EQUIPMENT	DESCRIPTION
11	Digital Colony Counter	Device for automated or manual counting of bacterial/fungal colonies on petri dishes.



S/N	EQUIPMENT	DESCRIPTION
12	Microhematocrit Centrifuge	Specialised centrifuge for determining the hematocrit of blood samples in capillary tubes.



S/N	EQUIPMENT	DESCRIPTION
13	Water Bath	A laboratory device used to incubate samples in heated water at consistent temperatures.



S/N	EQUIPMENT	DESCRIPTION
14	Freezer	Storage unit for long-term preservation of biological samples at sub-zero temperatures.



S/N	EQUIPMENT	DESCRIPTION
15	Microplate Reader	Optical device for detecting biological, chemical, or physical changes in 96/384-well plates.



S/N	EQUIPMENT	DESCRIPTION
16	Autoclave	Equipment for sterilising instruments and materials using high-pressure steam.



S/N	EQUIPMENT	DESCRIPTION
17	Mini Centrifuge	Compact centrifuge for quick spin-down of small volume tubes.



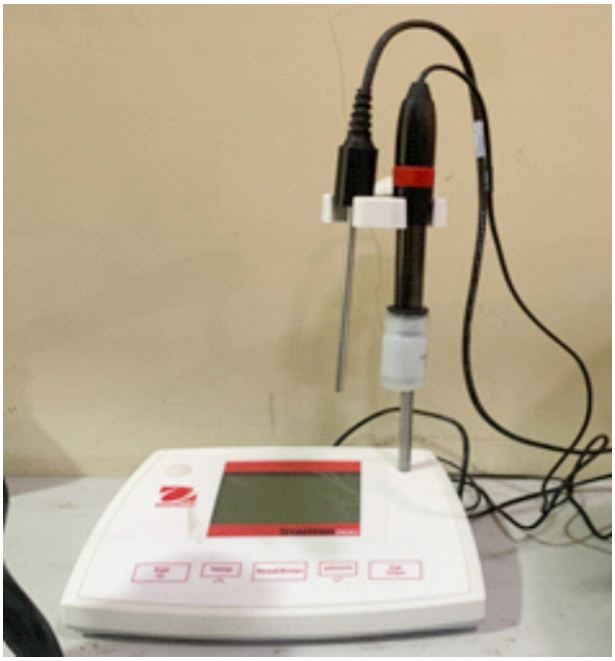
S/N	EQUIPMENT	DESCRIPTION
18	Ecotherm Heating Block	A dry bath is used to heat tubes or vials at specific temperatures.



S/N	EQUIPMENT	DESCRIPTION
19	Laminar Flow	Airflow workstation that maintains a clean, particle-free environment for sample handling.



S/N	EQUIPMENT	DESCRIPTION
20	pH Meter	An instrument that measures the hydrogen-ion activity (acidity or alkalinity) in solutions.



S/N	EQUIPMENT	DESCRIPTION
21	Vortex	Rapidly agitates samples in tubes for mixing.



S/N	EQUIPMENT	DESCRIPTION
22	Ice Maker Machine	Produces ice for cooling biological or chemical samples.



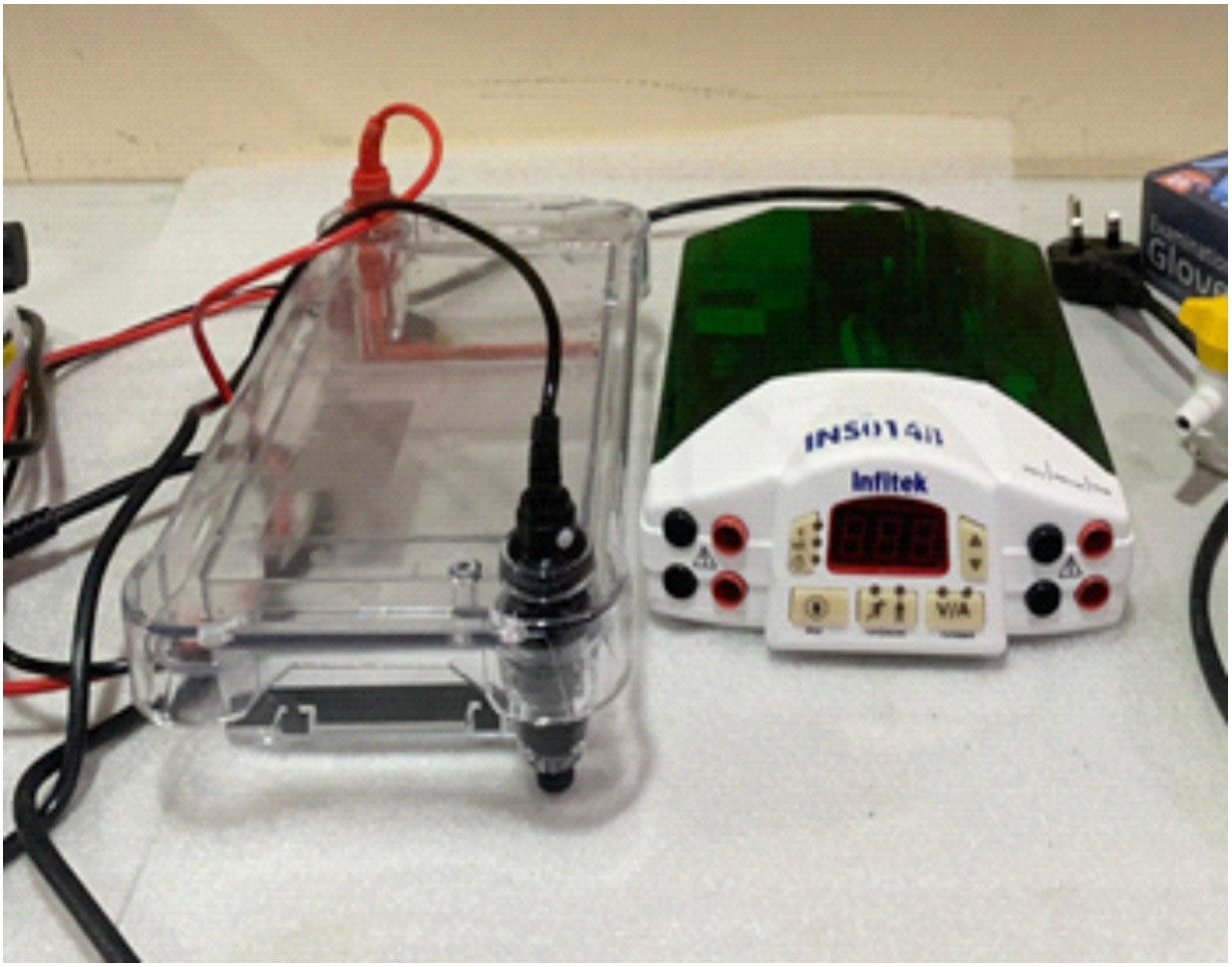
S/N	EQUIPMENT	DESCRIPTION
23	Incubator Shaker Series	Combines temperature control and agitation for culturing cells or microorganisms



S/N	EQUIPMENT	DESCRIPTION
24	Gel Documentation System	Imaging system for capturing and analysing nucleic acid or protein gels.



S/N	EQUIPMENT	DESCRIPTION
25	Electrophoresis System	Used to separate DNA, RNA, or proteins based on size and charge.



S/N	EQUIPMENT	DESCRIPTION
26	Autoclave	Sterilisation equipment using steam under pressure.



S/N	EQUIPMENT	DESCRIPTION
27	Freezer (-80	Ultra-low temperature freezer for storing highly sensitive biological samples



S/N	EQUIPMENT	DESCRIPTION
28	DNA Concentrator	A device that concentrates DNA samples by evaporating solvent under vacuum.



S/N	EQUIPMENT	DESCRIPTION
29	Portable LCD Digital Microscope	Compact microscope with built-in digital screen for real-time viewing.



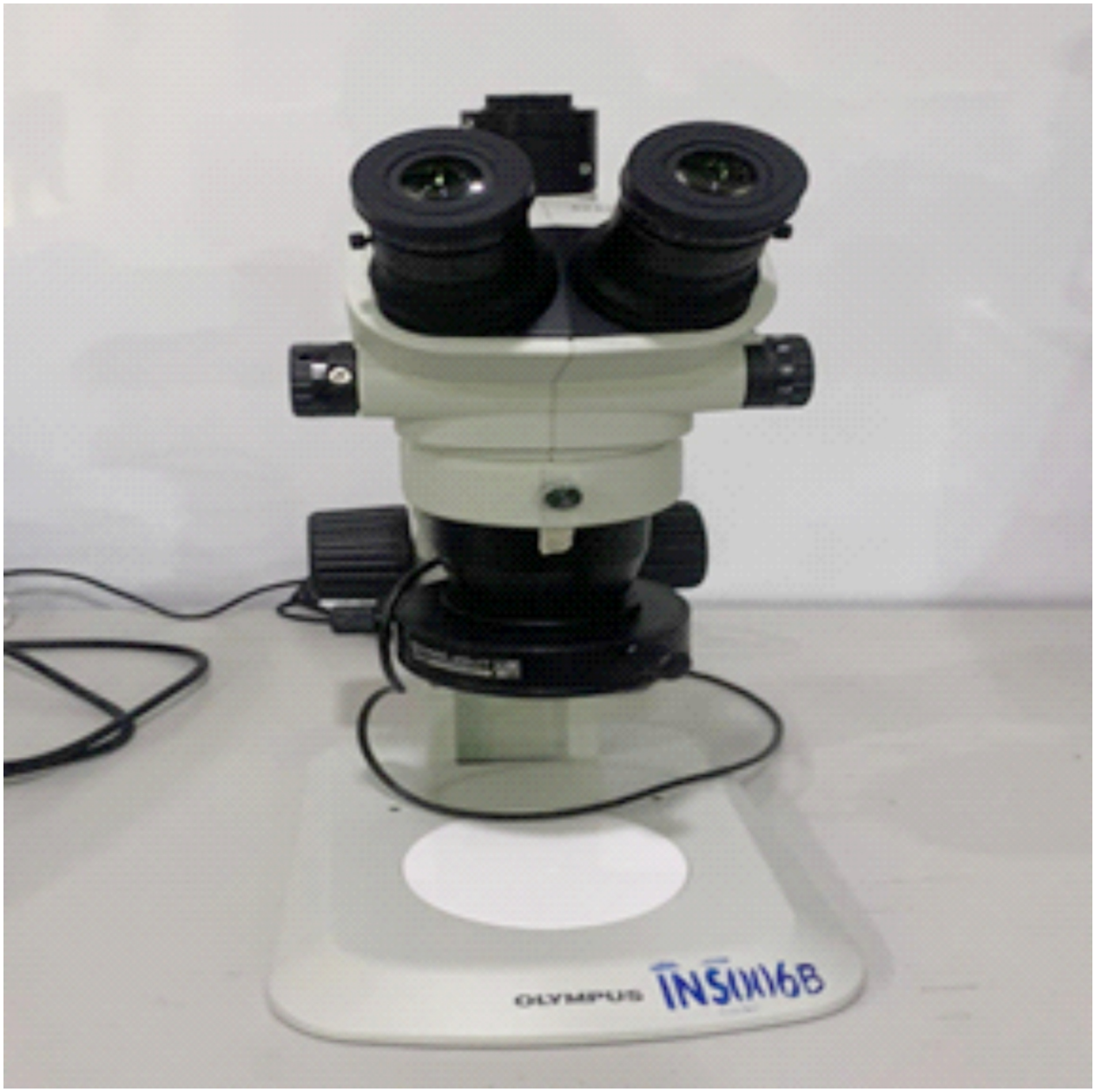
S/N	EQUIPMENT	DESCRIPTION
30	Inverter Chest Freezer	Deep freezer integrated with an inverter system to maintain temperature during power outages.z



S/N	EQUIPMENT	DESCRIPTION
31	Climate Humidity Chamber	A chamber that controls temperature and humidity for environmental testing or storage.



S/N	EQUIPMENT	DESCRIPTION
32	Olympus SZX16 Stereomicroscope with Camera	Advanced stereo microscope with camera for 3D observation and documentation.



S/N	EQUIPMENT	DESCRIPTION
33	Analytical Balance	A precision balance is used for measuring small masses with high accuracy.



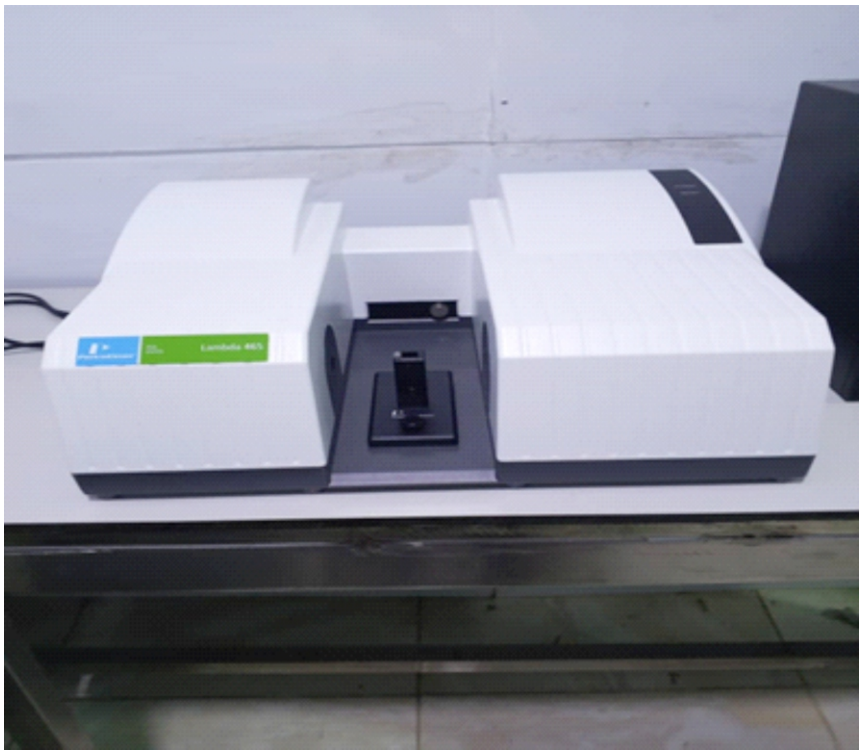
S/N	EQUIPMENT	DESCRIPTION
34	Water Distiller	Produces pure distilled water by heating and condensing.



S/N	EQUIPMENT	DESCRIPTION
35	Larvae Heater	Specialised device to maintain optimal temperatures for insect larvae culture.



S/N	EQUIPMENT	DESCRIPTION
36	UV-Vis Spectroph-otometer	Measures the absorbance and transmittance of UV and visible light by samples.



S/N	EQUIPMENT	DESCRIPTION
37	Spectrophotometer /Fluorometer	Dual-mode device for measuring absorbance and fluorescence in molecular studies.



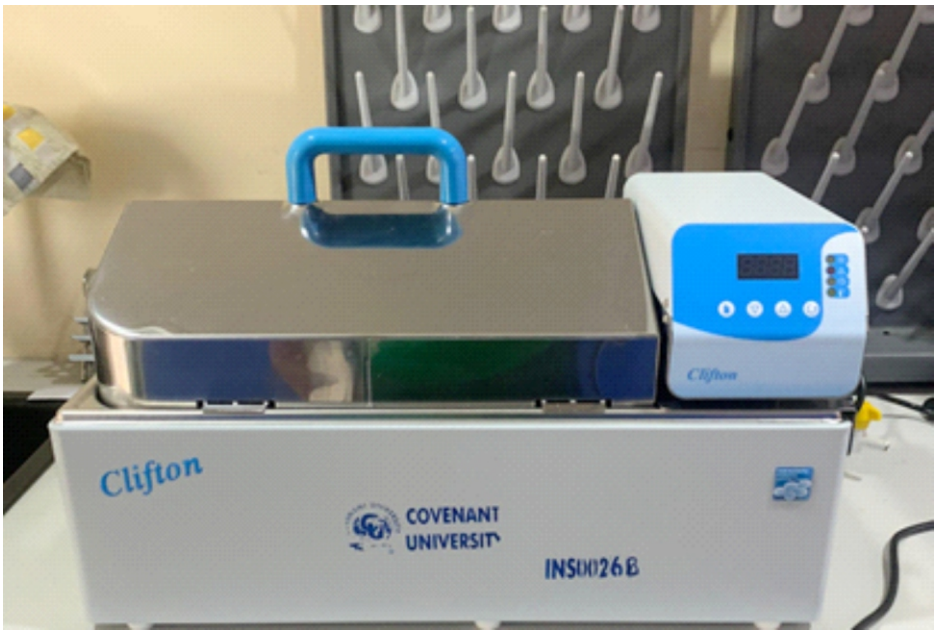
S/N	EQUIPMENT	DESCRIPTION
38	Insect Trap	A device designed to attract and capture insects for research or pest control.



S/N	EQUIPMENT	DESCRIPTION
39	Hisense Standing Air Conditioner	Vertical air conditioning unit for climate control in laboratory spaces.



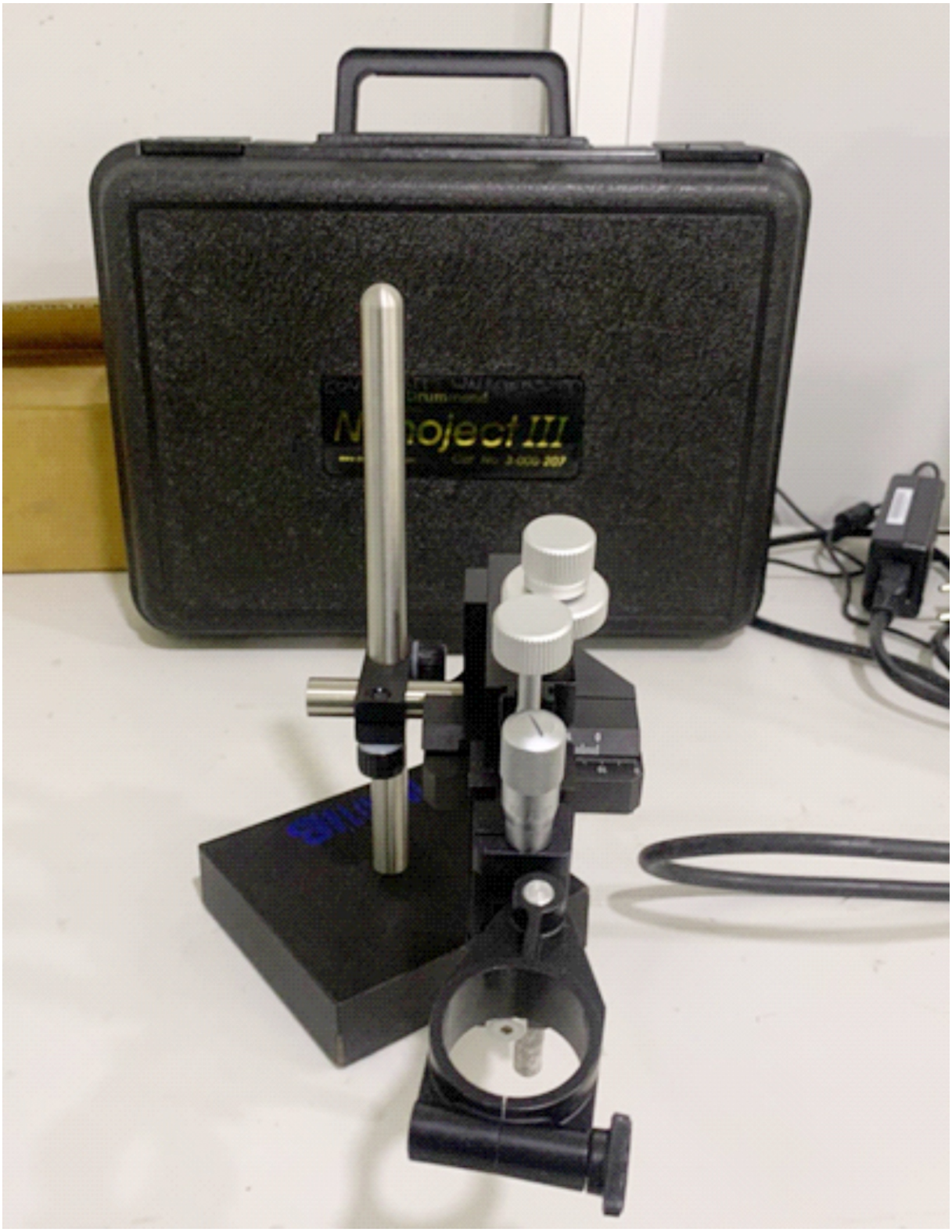
S/N	EQUIPMENT	DESCRIPTION
40	Clifton Water Bath	Brand-specific heated water bath for sample incubation



S/N	EQUIPMENT	DESCRIPTION
41	Thermal Cycler	Used in PCR to amplify DNA by cycling through temperature phases



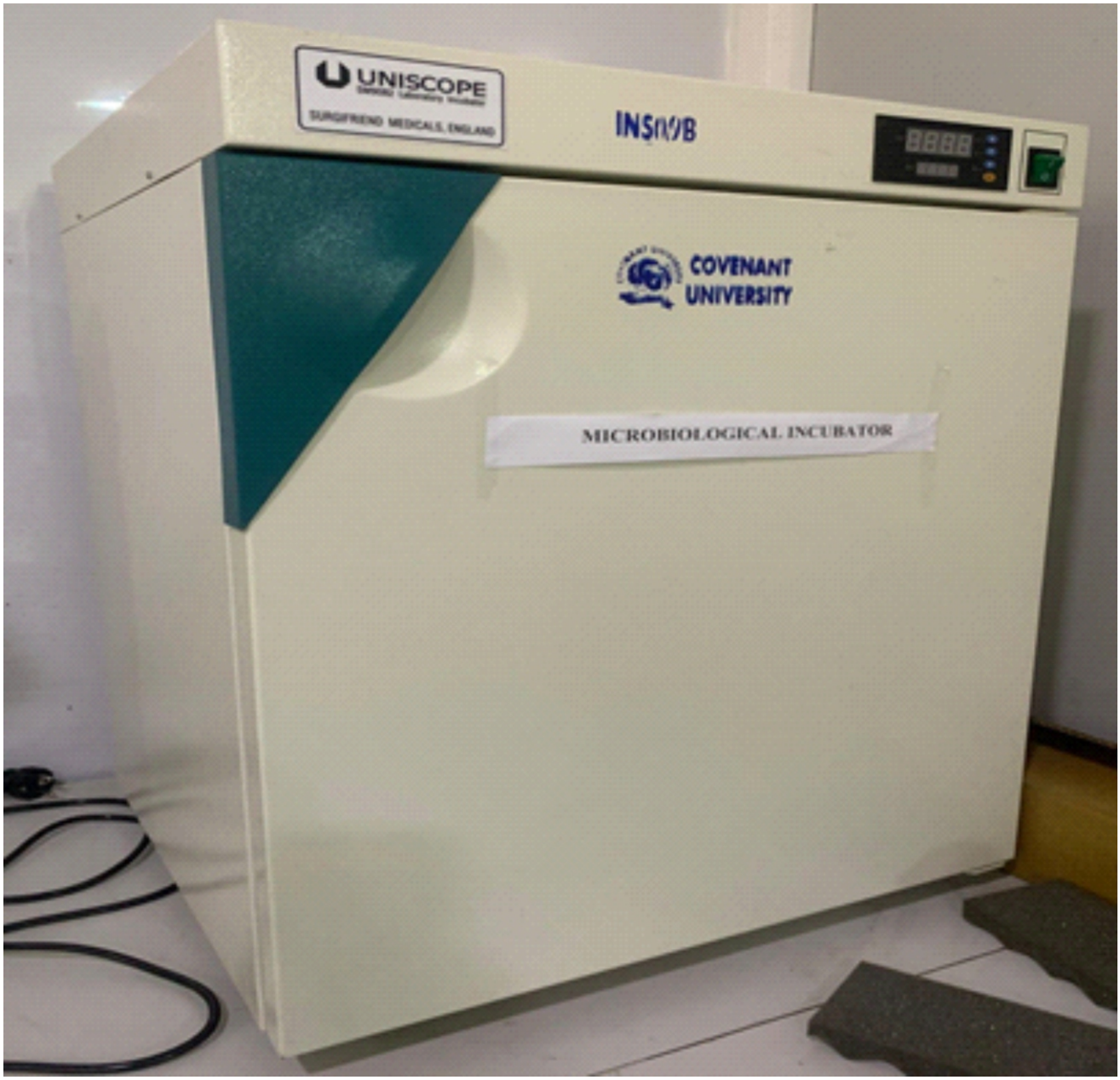
S/N	EQUIPMENT	DESCRIPTION
42	Nanoliter Injector	Precision injector for delivering very small sample volumes, often in microinjection



S/N	EQUIPMENT	DESCRIPTION
43	Refugerated Centrifuge	General-purpose device for separating substances based on density using centrifugal force.



S/N	EQUIPMENT	DESCRIPTION
44	Microbiological Incubator	Maintains optimal temperature for culturing microorganisms.



S/N	EQUIPMENT	DESCRIPTION
45	CO_2 Incubator	Provides a stable CO_2 environment for growing cells in vitro.



S/N	EQUIPMENT	DESCRIPTION
46	Hot Plate Magnetic Stirrer	Heats and stirs solutions simultaneously with a magnetic stir bar.



S/N	EQUIPMENT	DESCRIPTION
47	Stereomicroscope	Low-magnification microscope for viewing 3D structures of specimens.



S/N	EQUIPMENT	DESCRIPTION
48	Biosafety Cabinet	Containment unit designed to protect users and the environment from biohazards.



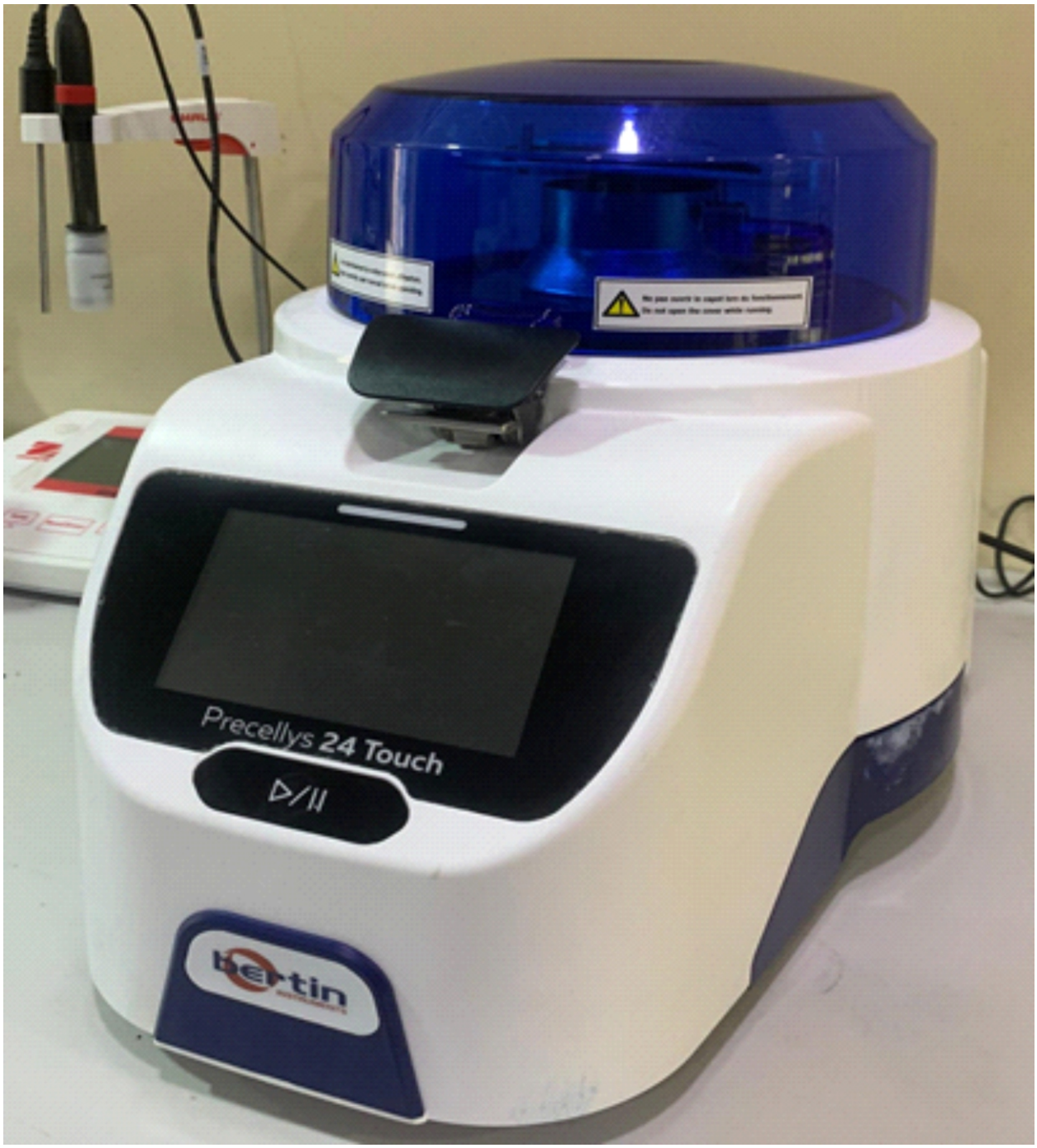
S/N	EQUIPMENT	DESCRIPTION
49	Vacuum Pump	Removes air and gases from sealed systems, often used with concentrators or filtration.



S/N	EQUIPMENT	DESCRIPTION
50	Humidifier	Adds moisture to the air in controlled lab environments.



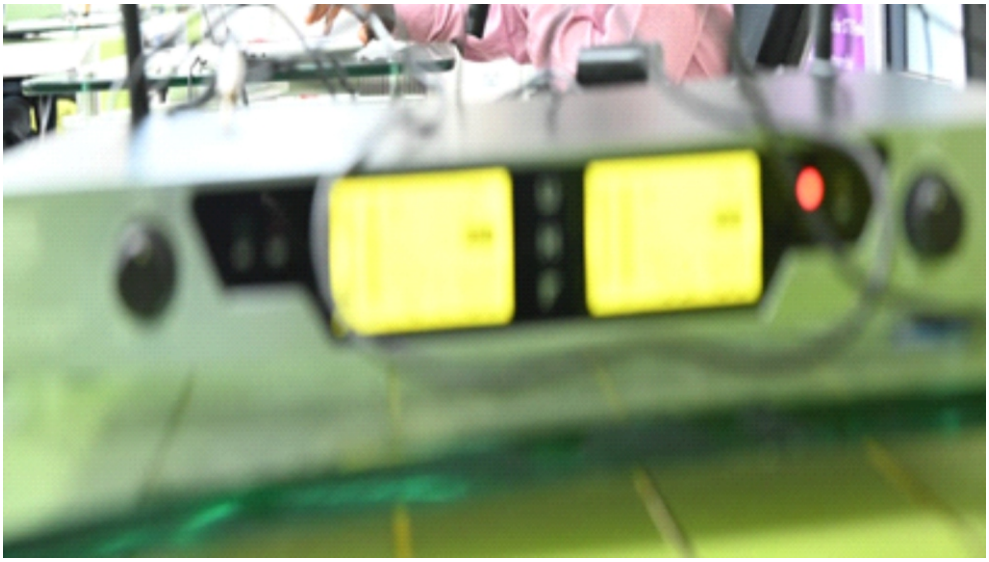
S/N	EQUIPMENT	DESCRIPTION
51	Precellys 24 Tissue Homogeniser	High-throughput homogeniser for tissue sample preparation.



S/N	EQUIPMENT	DESCRIPTION
52	Refrigerator (with fridge and freezer)	Dual-purpose cold storage for sample preservation.



S/N	EQUIPMENT	DESCRIPTION
53	Wireless Microphone System	Cordless audio system for presentations or communications.



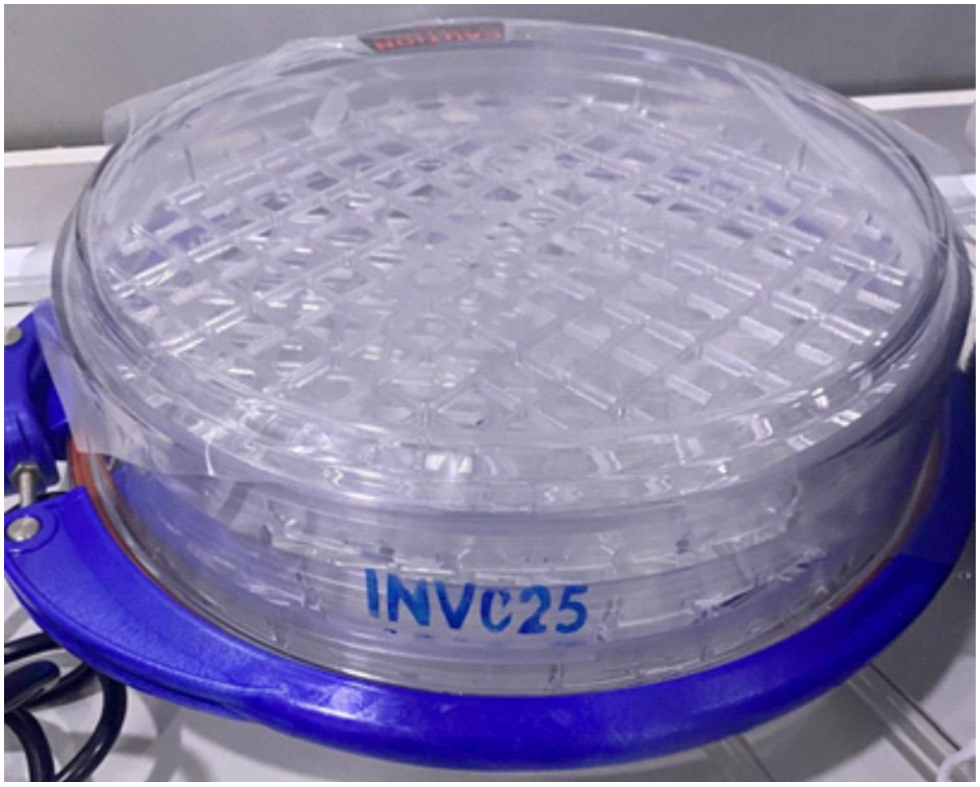
S/N	EQUIPMENT	DESCRIPTION
54	Camera	Imaging device for documentation, microscopy, or recording experiments.



S/N	EQUIPMENT	DESCRIPTION
55	Vertical Laminar Flow Clean Bench	Clean air workstation for contamination -free work with vertical airflow.



S/N	EQUIPMENT	DESCRIPTION
56	Modular Incubator Chamber	Stackable, customizable incubator for controlled growth environments.



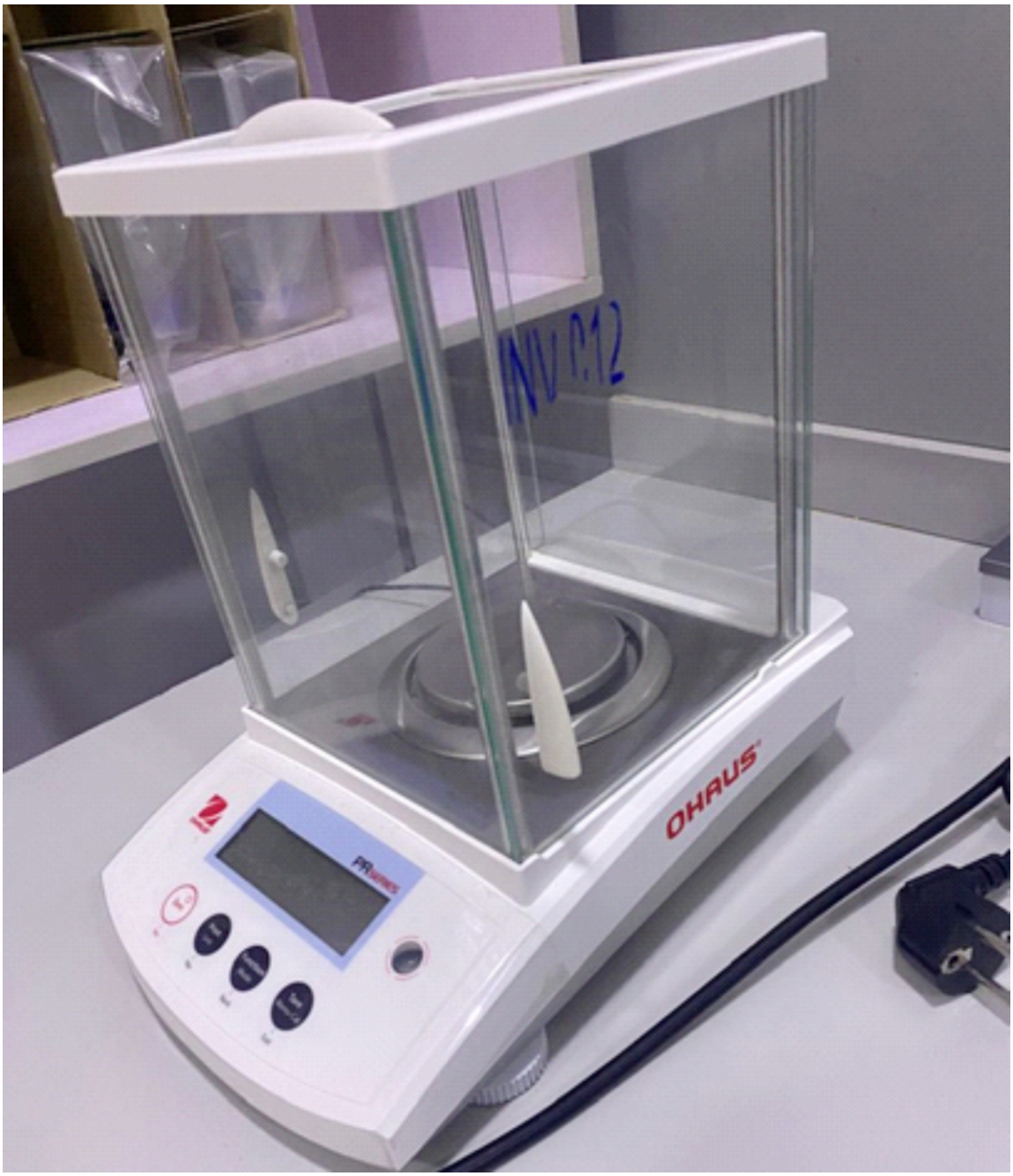
S/N	EQUIPMENT	DESCRIPTION
57	Vortex Mixer	An instrument for quickly mixing small vials of liquid.



S/N	EQUIPMENT	DESCRIPTION
58	Mini Centrifuge	(Duplicate of #17) Compact centrifuge for rapid sample spinning.



S/N	EQUIPMENT	DESCRIPTION
59	Weighing Balance	A general lab instrument for measuring sample mass.



S/N	EQUIPMENT	DESCRIPTION
60	pH Meter	(Duplicate of #20) Used to determine the acidity or alkalinity of liquids.



S/N	EQUIPMENT	DESCRIPTION
61	Flat Screen	Display monitor for visualisation, teaching, or system integration.



S/N	EQUIPMENT	DESCRIPTION
62	Sound System	An audio amplification system used for events, lectures, or conferencing.



S/N	EQUIPMENT	DESCRIPTION
63	AC Power System	Backup or main power system for ensuring electricity supply.



S/N	EQUIPMENT	DESCRIPTION
64	Monitor	Screen display unit for computers or lab instruments.



S/N	EQUIPMENT	DESCRIPTION
65	Felicity Inverter and Battery Set	Power backup system for ensuring continuous power during outages.



S/N	EQUIPMENT	DESCRIPTION
66	Switch	A network switch is used to manage and route data between connected devices.



S/N	EQUIPMENT	DESCRIPTION
67	Server	Central computing unit for managing files, data storage, and services.



S/N	EQUIPMENT	DESCRIPTION
68	Server	Central computing unit for managing files, data storage, and services.



S/N	EQUIPMENT	DESCRIPTION
69	Server	Central computing unit for managing files, data storage, and services.



S/N	EQUIPMENT	DESCRIPTION
70	MacBook	An Apple laptop for computational or documentation purposes.

S/N	EQUIPMENT	DESCRIPTION
71	Smart Screen	An interactive digital display for presentations or lab teaching.



S/N	EQUIPMENT	DESCRIPTION
72	Smart Screen	An interactive digital display for presentations or lab teaching.



S/N	EQUIPMENT	DESCRIPTION
73	Cloud Router	A device that routes the internet and connects to cloud services.



S/N	EQUIPMENT	DESCRIPTION
74	Router	A networking device for internet access and local communication.



S/N	EQUIPMENT	DESCRIPTION
75	Server	Centralised computing system for managing digital operations.



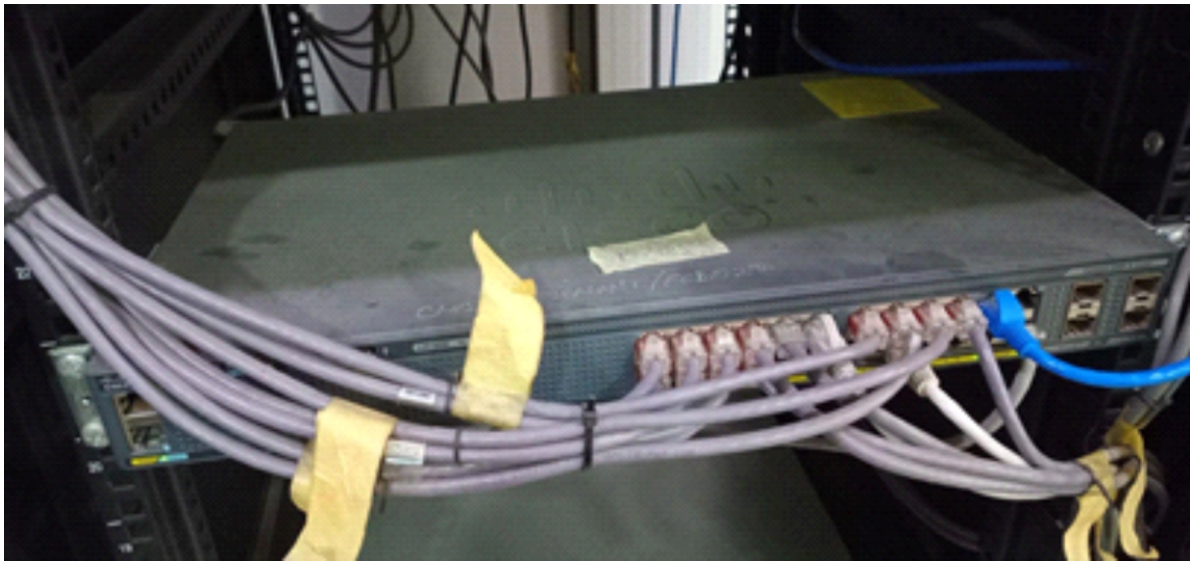
S/N	EQUIPMENT	DESCRIPTION
76	Z Book	HP workstation laptop for high-performance computing and data analysis.



S/N	EQUIPMENT	DESCRIPTION
77	Personal Computer	Standard computer system for laboratory operations and data entry.



S/N	EQUIPMENT	DESCRIPTION
77	Switch	A network switch is used to manage and route data between connected devices.



S/N	EQUIPMENT	DESCRIPTION
79	Switch	A network switch is used to manage and route data between connected devices



S/N	EQUIPMENT	DESCRIPTION
80	Server	Centralised computing system for managing digital operations.



S/N	EQUIPMENT	DESCRIPTION
81	Server	Centralised computing system for managing digital operations



S/N	EQUIPMENT	DESCRIPTION
82	SERVER	Centralised computing system for managing digital operations.



S/N	EQUIPMENT	DESCRIPTION
83	Server	Centralised computing system for managing digital operations.



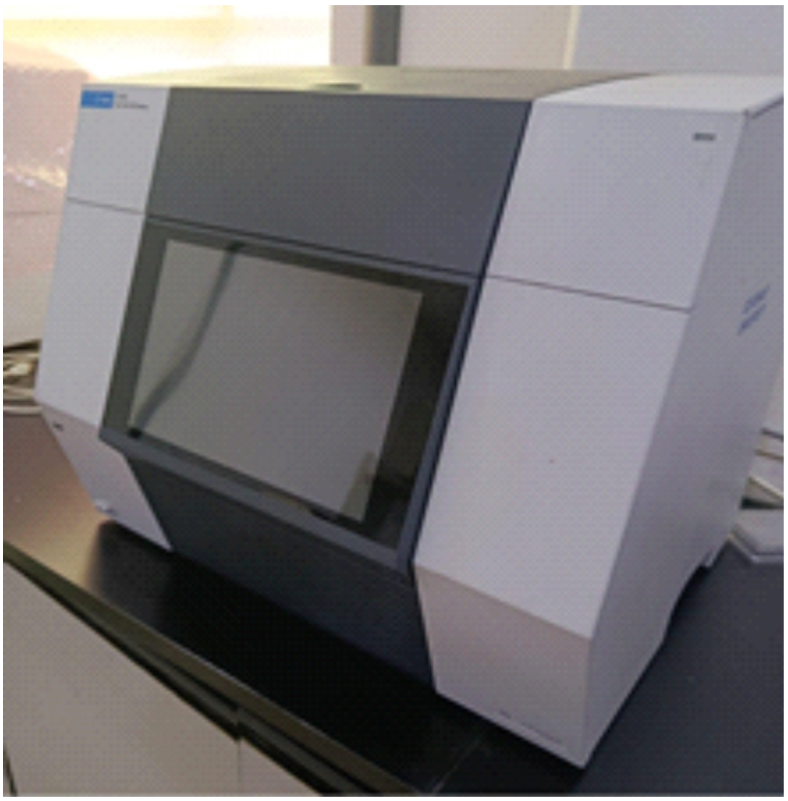
S/N	EQUIPMENT	DESCRIPTION
84	Server Rack	A framework that houses multiple servers and related equipment.



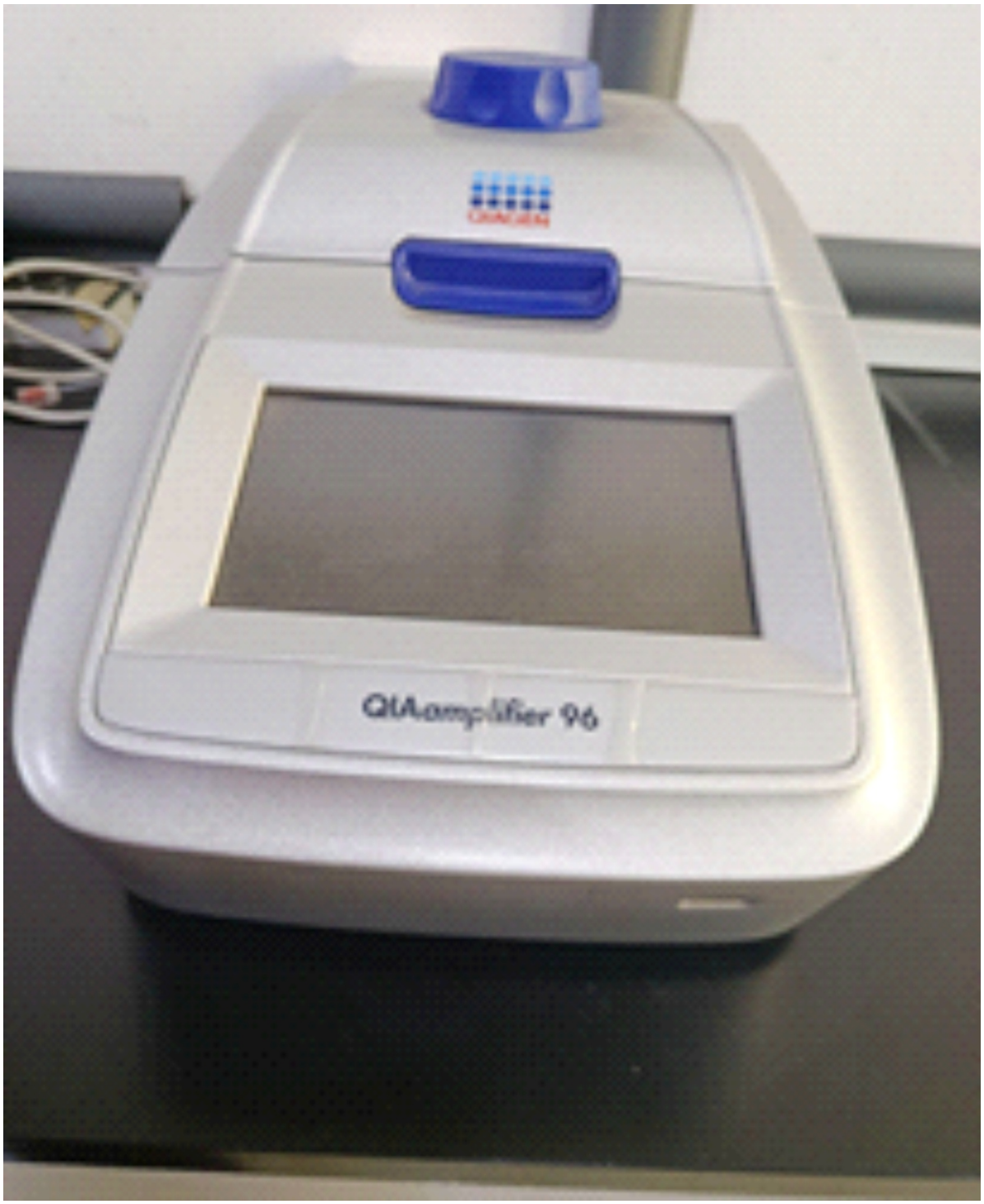
S/N	EQUIPMENT	DESCRIPTION
85	NMR Spectrometer (400 MHz)	A high-resolution 400 MHz Nuclear Magnetic Resonance (NMR) spectrometer is used for analysing molecular structures, dynamics, and chemical environments in organic compounds, biomolecules, and pharmaceuticals.

S/N	EQUIPMENT	DESCRIPTION
86	Gas Supply for NMR	Essential gases such as liquid nitrogen, for maintaining the superconducting magnet, will also be available.

S/N	EQUIPMENT	DESCRIPTION
87	Agilent AriaMx Real-Time PCR System	Real-time and Digital PCR by Thermofisher. Has a user-friendly design, optimised software and is compatible with various consumables. It quantifies gene expression, genotype and analyses Copy Number Variation



S/N	EQUIPMENT	DESCRIPTION
88	QiAAmplifier 96 (Qiagen)	High-performance 96-well system for endpoint PCR requirement. Has a heated smart lid that helps maintain results consistency. Required for the conventional PCR procedure.



S/N	EQUIPMENT	DESCRIPTION
89	DeNovix (DS-11FX+) NanoDrop/ Spectrophotometer/ Fluorometer	Bluish colour, rapid measurement of concentration and purity of DNA, RNA or protein samples. Fast, reliable, and accurate.



S/N	EQUIPMENT	DESCRIPTION
90	SL 16R Refrigerated Centrifuge (Thermo Scientific)	Operates at a maximum speed of 15,200 RPM. Has aerosol-tight rotors which serve as an autolock when spinning samples. separates materials of different density or particle size suspended in a liquid.



S/N	EQUIPMENT	DESCRIPTION
91	Gel Viewer (Azure - 200) Biosystems)	Simple, touchscreen-based gel documentation imaging system. It is designed for UV, colour imaging, blue-excited DNA dyes, and Coomassie gel imaging.



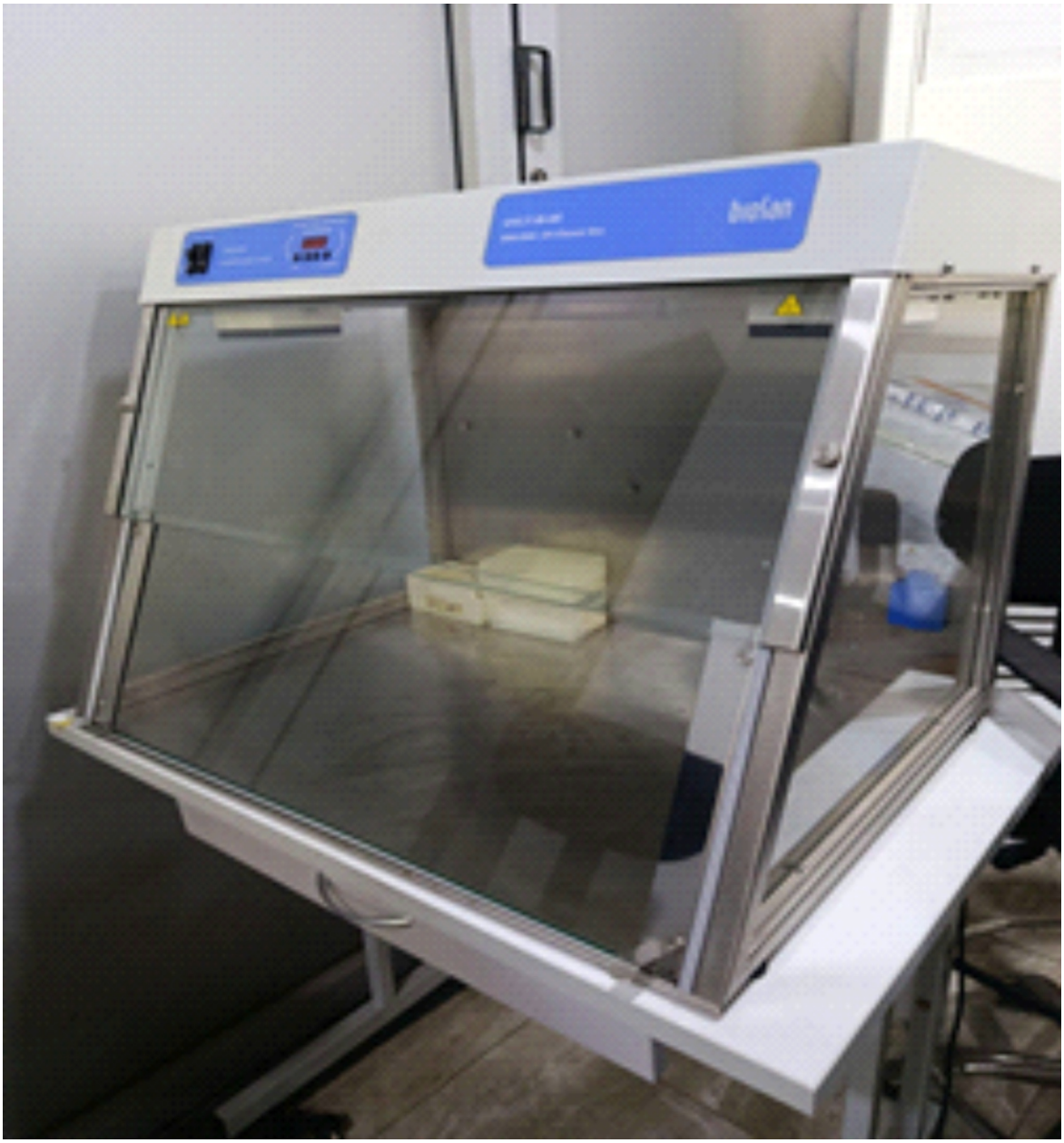
S/N	EQUIPMENT	DESCRIPTION
92	Haier Biomedical (-80 °C) Ultra-low Freezer	High-Efficiency and Energy-Saving Compressor and System Superior Temperature Uniformity in a Large Storage Space. Has a low Sound Level. For long-term preservation (cells, and reagents)



S/N	EQUIPMENT	DESCRIPTION
93	Biobase Biological Safety Cabinet	Model: BMC - 1300IIA2-X (Manufactured by Jinan Biobase Biotechnology Co., Ltd). It is ventilated, has an enclosed workspace protecting three fronts, which prevents inhalation of aerosols, filters exhaust air, and maintains sterile airflow



S/N	EQUIPMENT	DESCRIPTION
94	UVC/T-M-AR – DNA/RNA UV-Cleaner Box (Biosan)	The model is a bench-top type, made of a metal framework, glass walls, working surface made of stainless steel. Provides protection against contamination. Continuous aseptic airflow ensures clean conditions during active workflows



S/N	EQUIPMENT	DESCRIPTION
95	MiSeq Sequencing System	Simple, intuitive interface and fast. Cloud-enabled data management via BaseSpace Sequence Hub, offering real-time monitoring, analysis apps, scalable storage, and easy sharing.



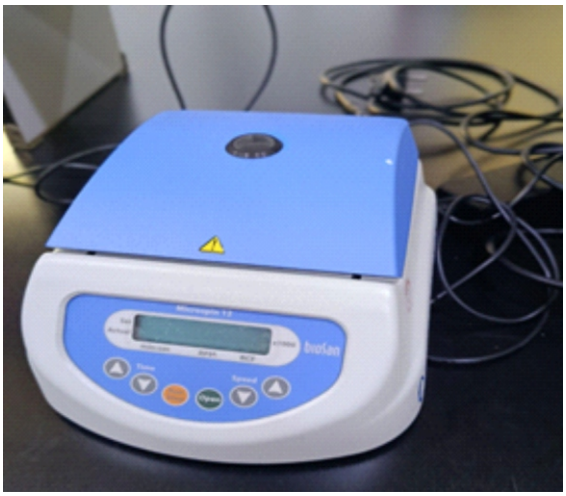
S/N	EQUIPMENT	DESCRIPTION
96	HIPPO MPP-96 MICROPLATE PHOTOMETER	A compact tabletop device for measuring the results of ELISA and microbiological studies in 96-well microplates. The photometer is controlled and outputs data via a computer.



S/N	EQUIPMENT	DESCRIPTION
97	CVP-2 CENTRIFUGE VORTEX	Life science applications for pellet re-suspension, mixing viscous liquids, or any other method where you need tube/ Miroplate vortexing and centrifugation.



S/N	EQUIPMENT	DESCRIPTION
98	MICROSPIN 12 LABORATORY CENTRIFUGE	A bench-top centrifuge, used during the extraction of RNA/DNA samples, sedimentation of biological components, biochemical and chemical analysis of microsamples.



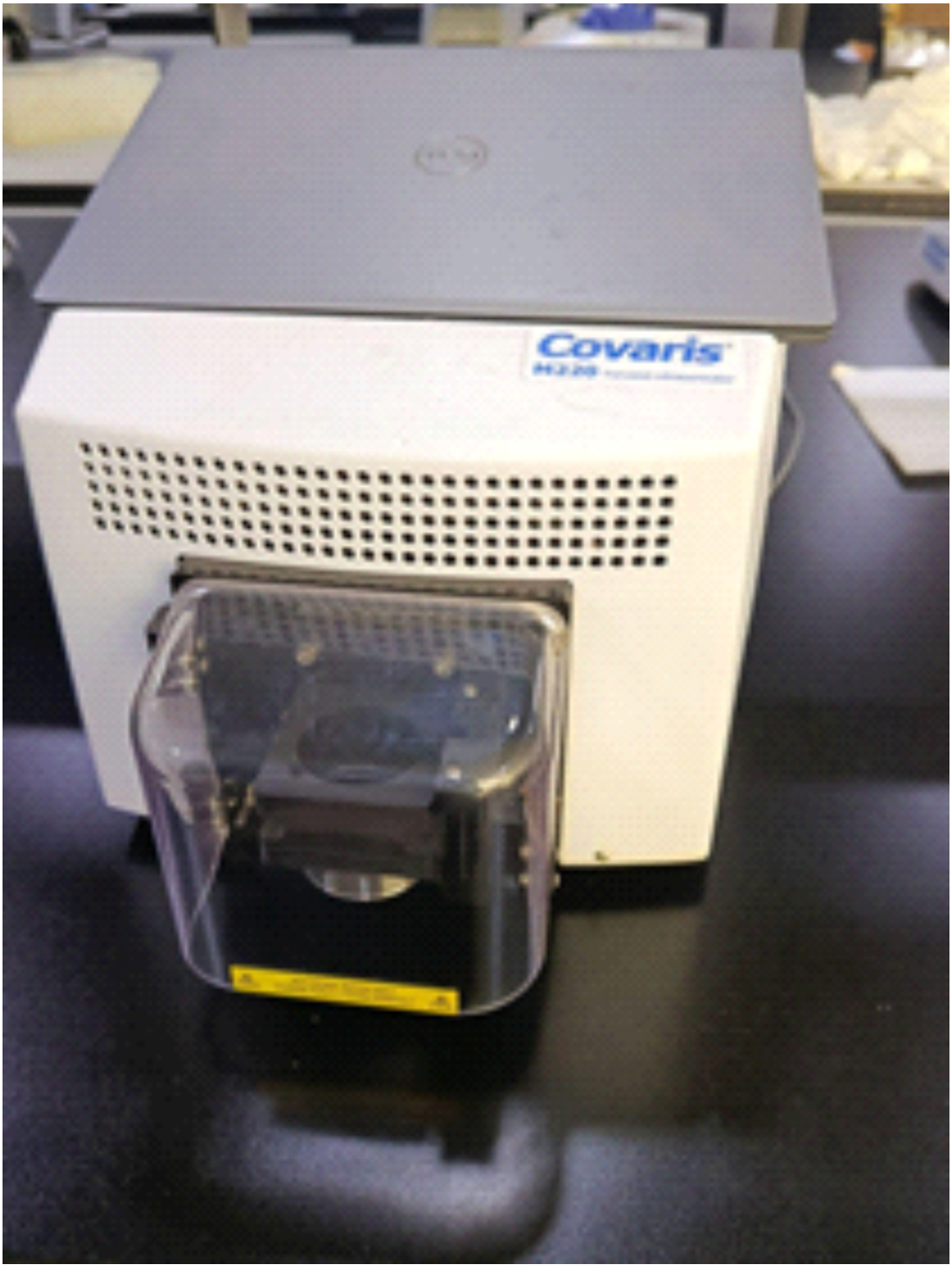
S/N	EQUIPMENT	DESCRIPTION
99	V-1 PLUS PERSONAL VORTEX	A vortexer used for mixing tissue samples, suspending cell samples, mixing chemical samples, mixing bacterial and yeast cells when washing from the culture medium, extracting metabolites and enzymes from cells and cell cultures, etc. **Vortexing** during various operations with DNA/RNA.



S/N	EQUIPMENT	DESCRIPTION
100	MPS-1 HIGH SPEED MULTI-PLATE SHAKER	The MPS-1 High-Speed Multi-Plate Shaker mixes small volumes of reagents in microplates, PCR plates, deepwell plates, and microtubes. It can be used in a wide range of applications, including DNA/RNA isolation, pellet resuspension, and ELISA.



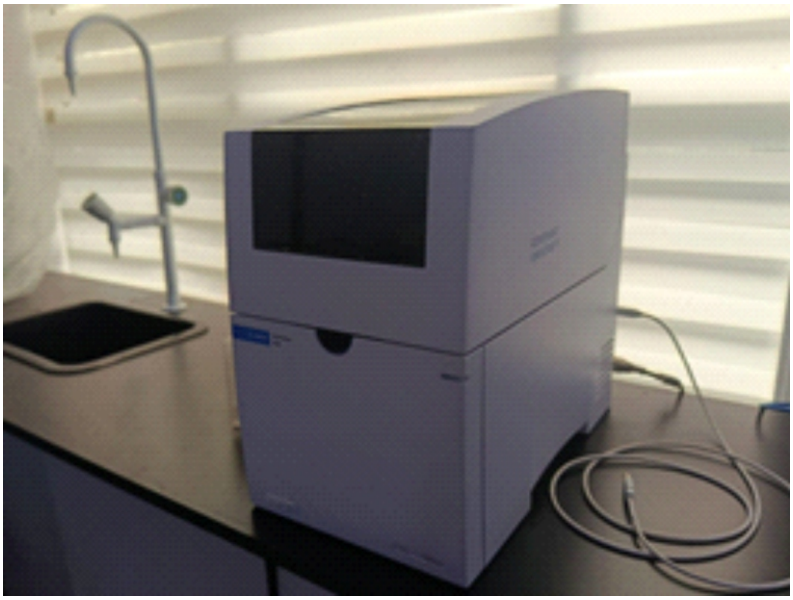
S/N	EQUIPMENT	DESCRIPTION
101	COVARIS M230 FOCUSED ULTRASONICATOR	This system has a single tube sample processing capacity in compact, benchtop formats for a variety of applications, including DNA/ RNA/ Chromatin Shearing, tissue lysis and extraction, and biomolecule extraction from FFPE tissue samples



S/N	EQUIPMENT	DESCRIPTION
102	MUPID-EXU SYSTEM	This is a gel electrophoresis machine used for DNA separation



S/N	EQUIPMENT	DESCRIPTION
103	SCREEN TAPE SYSTEM	The Agilent TapeStation system is an automated electrophoresis solution for the sample quality control of DNA and RNA samples.



S/N	EQUIPMENT	DESCRIPTION
104	BOSCH REFRIGERATOR AND FREEZER	This is use for sample and reagent storage at temperatures of about 4°C and -20°C



S/N	EQUIPMENT	DESCRIPTION
105	Water purification system (Milli-Q)	Production of distilled and deionized water



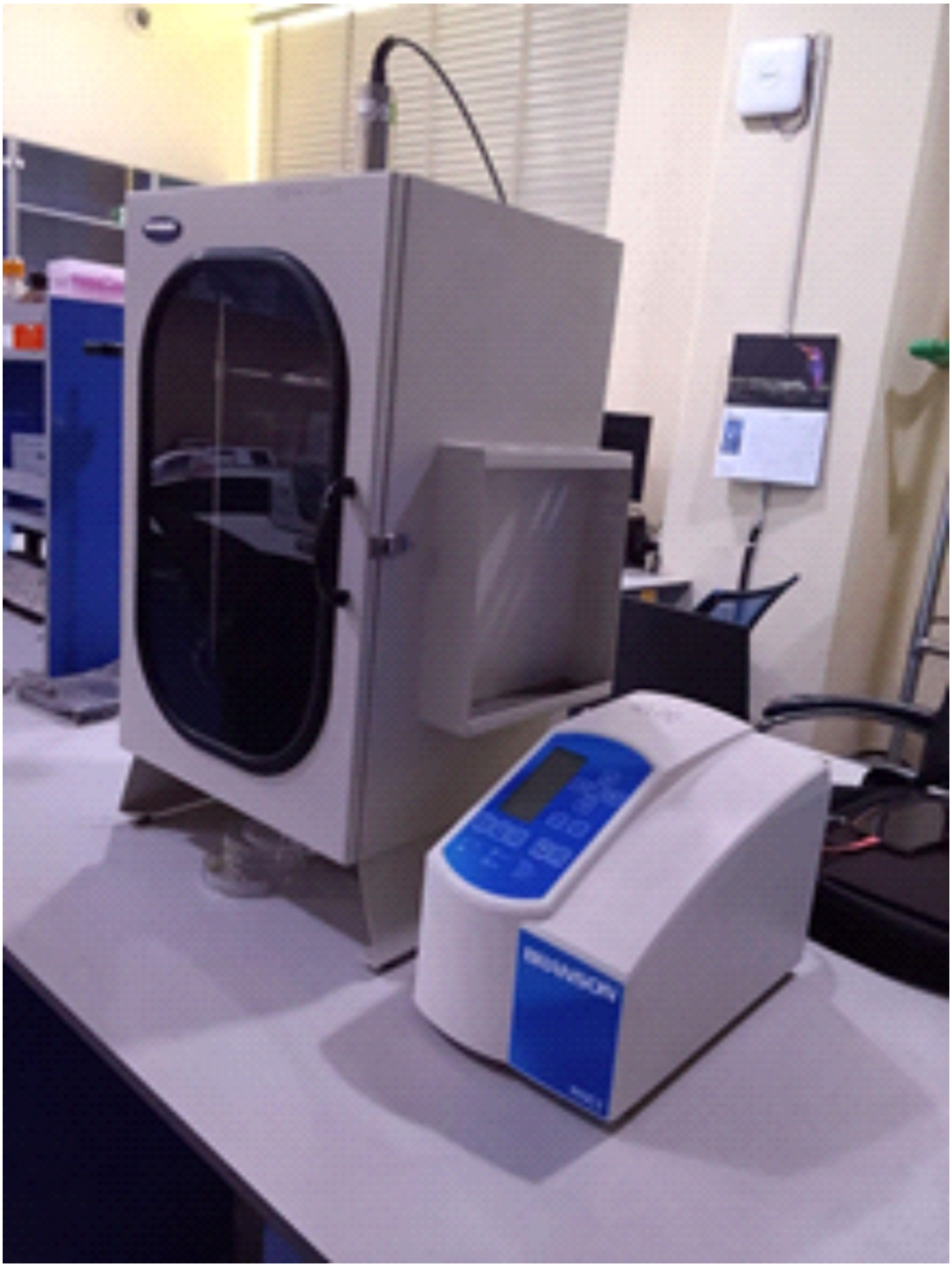
S/N	EQUIPMENT	DESCRIPTION
106	Refrigerated incubator shaker	This combines **temperature control**, **refrigeration**, and **agitation** (shaking). It keeps samples at a desired temperature (which could be below or above room temp) **while continuously shaking** them.



S/N	EQUIPMENT	DESCRIPTION
107	Mastercycler (PCR)	A PCR machine amplifies specific DNA fragments using the **Polymerase Chain Reaction (PCR)** technique. It repeatedly heats and cools DNA samples through precise temperature cycles to: 1. **Denature** the double-stranded DNA (separate strands) 2. **Anneal** primers (short DNA pieces that bind to target regions) 3. **Extend** new DNA strands with the DNA polymerase enzyme. This exponential process creates millions of copies of the target DNA in a few hours



S/N	EQUIPMENT	DESCRIPTION
108	Sonicator & Sonifier Sound Enclosure	It is used for breaking cells and or molecules



S/N	EQUIPMENT	DESCRIPTION
109	Refrigerated centrifuge	A refrigerated centrifuge separates components in a liquid sample based on **density** by spinning at high speeds — while keeping the samples **cold**. Cooling is important to: **Preserve temperature-sensitive samples** (like proteins, enzymes, blood, or cells). **Prevent degradation** of biological molecules during centrifugation.



S/N	EQUIPMENT	DESCRIPTION
110	Gel documentation system	A gel documentation system (gel doc) is used to **visualize, capture, and analyze** nucleic acids (DNA/RNA) or proteins separated by gel electrophoresis. It usually combines: A UV or blue light transilluminator to excite DNA-binding dyes (like ethidium bromide or SYBR Green) A camera to photograph the illuminated bands Software for quantification (band size, intensity).



NATIONAL OPEN UNIVERSITY OF NIGERIA

CENTRE OF EXCELLENCE FOR TECHNOLOGY-ENHANCED LEARNING (ACETEL)

ACETEL LIST/DESCRIPTION OF EQUIPMENT

Location: Artificial Intelligence Laboratory

S/N	Item Name	Description	Quantity
1	HP All-in-One Desktop, Intel Core i7 (2.0GHz), 8GB RAM, 1TB HDD, Windows 10 Pro	Enterprise-grade AIO desktop system used for machine learning and AI model development. Includes peripherals and standard AI software stack.	8
2	Rack Cabling Kit with Cisco Catalyst Switch, Cisco Router, Wireless AP	Complete lab-grade networking setup including rack-mounted cabling, Cisco Layer 3 switches, router, and wireless access point for AI-data transmission.	1 each
3	APC Smart-UPS 3000VA LCD, Rack Mount, 2700W	High-efficiency 3KVA UPS for backup and surge protection to sensitive lab equipment. Includes network management card.	1
4	High-Performance AI Server – Xeon Platinum 8280 (28-Core, 56 Threads), 512GB RAM.	Dedicated AI compute server designed for deep learning workloads and model training. Supports TensorFlow, PyTorch, and CUDA acceleration.	1
5	NAS System – 10TB RAID 6, Dual Gigabit Ethernet, Backup Suite Enabled	High-availability network-attached storage (NAS) system used to store large datasets, AI models, logs, and simulations. Redundant backup setup included.	1
6	Robotics Kits – Arduino-Compatible, Motor Controllers, Sensor Modules, Power Supplies	Full educational robotic platforms used for developing and testing AI-embedded physical systems such as autonomous bots.	9 units
7	Raspberry Pi 4 Model B Kits – 4GB RAM, Quad-Core 1.5GHz, 32GB SD, Wi-Fi/Bluetooth, Sensors	Single-board computers used for real-time edge computing, AI+IoT projects, and hardware interfacing. Includes sensor and actuator modules.	4 units
8	Mid-Sized 3D Printer – FDM, 200mm x 200mm x 180mm build volume, PLA/ABS compatible	Desktop Fused Deposition Modeling 3D printer used for prototyping AI-integrated mechanical designs, enclosures, and custom components.	1

Location: Cybersecurity Laboratory

S/N	Item Name	Description	Quantity
1	HP All-in-One Desktop, Intel Core i7 (2.0GHz), 8GB RAM, 500GB HDD	Standard cybersecurity workstations for running security tools, Kali Linux VMs, and network testing utilities	8
2	Database Server – Intel Xeon E5, 8-Core, 64GB DDR4 ECC, 4TB RAID Storage	Dedicated database server for storing logs, intrusion data, and simulations. RAID configuration for redundancy	1
3	Cisco Routers ISR Series, Dual WAN, 2GB Flash, 512MB DRAM	Enterprise-class routers used in configuring routing protocols and simulating edge networks	2
4	Cisco 24-Port Layer 2 Switch – WS-C2960 Series	Managed switches used for VLANs, spanning tree, and port security training	2
5	Hardware Firewalls – Cisco ASA 5500 Series	Next-gen firewalls with access control, IPS, and VPN capabilities	2
6	WS-C2960C-12PC-L Catalyst Switch, 12 PoE Ports + Dual Uplink	Compact PoE switch for powering IP devices like VoIP phones and access points	1
7	HP LaserJet Enterprise Printer M608	High-speed monochrome printer for printing logs, network maps, and exam sheets	2
8	HD Multimedia Projector, 3500 Lumens, HDMI/VGA	Used for instructor-led sessions and live network demos	1
9	APC Smart-UPS 5000VA LCD RM 2U, 2700W, USB/Serial	Rack-mount UPS to provide clean power and battery backup to core lab devices	1

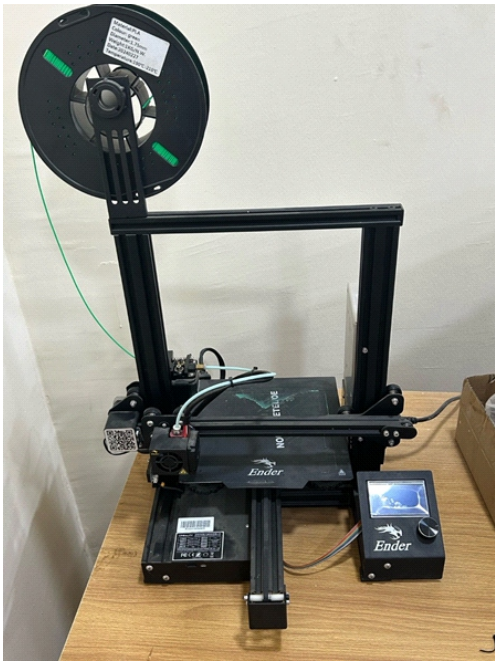
Location: Management Information System (MIS) Laboratory

S/N	Item Name	Description	Quantity
1	HP All-in-One Desktop, Intel Core i7 (2.0GHz), 8GB RAM, 1TB HDD, Win 10 Pro	Business-grade desktop systems for enterprise application training, database interface usage, and reporting tasks	7

2	Database Server – Intel Xeon Silver, 8-Core, 64GB ECC RAM, 1TB RAID + 2TB Ext HDD	High-performance server for managing student records, financial systems, and MIS applications with redundancy setup	1
3	HP LaserJet Enterprise M608 Printer, USB 2.0, 52 ppm	High-speed laser printer used for printing MIS reports, invoices, and student records	1
4	Line-Interactive UPS, 1200VA, AVR Function, LCD Display	UPS units to maintain workstation uptime and protect MIS hardware from power surges	4
5	Multimedia Projector + Whiteboard Kit – 1080p, 3000 Lumens, RGB/HDMI	Interactive teaching aid for data visualization, management dashboard presentations, and staff training sessions	1

Artificial Intelligence Laboratory





Mid-Sized 3D Printer

Robotics Kits (Wifi for IOT)





Raspberry Pi5



High-Performance AI Server and Switches



Cybersecurity Laboratory



Server, Switches, Router and Firewall



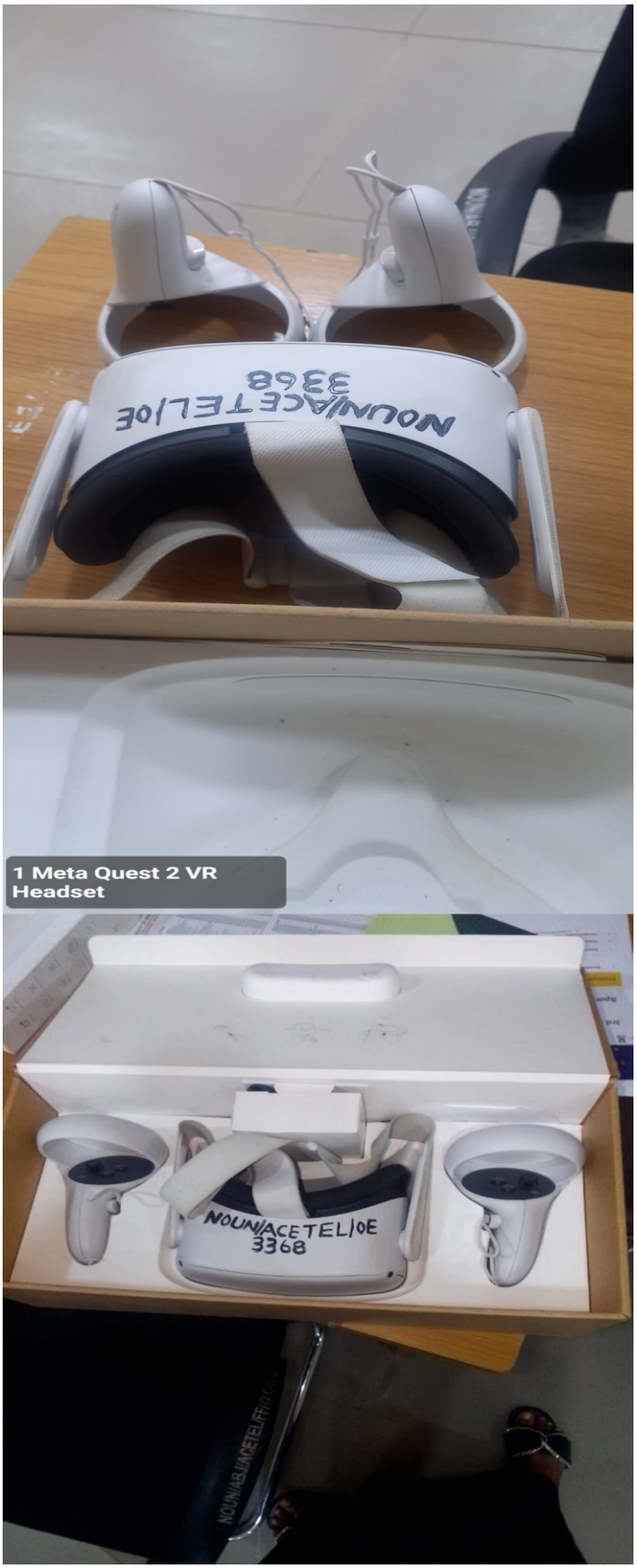
UPS



Management Information System Laboratory



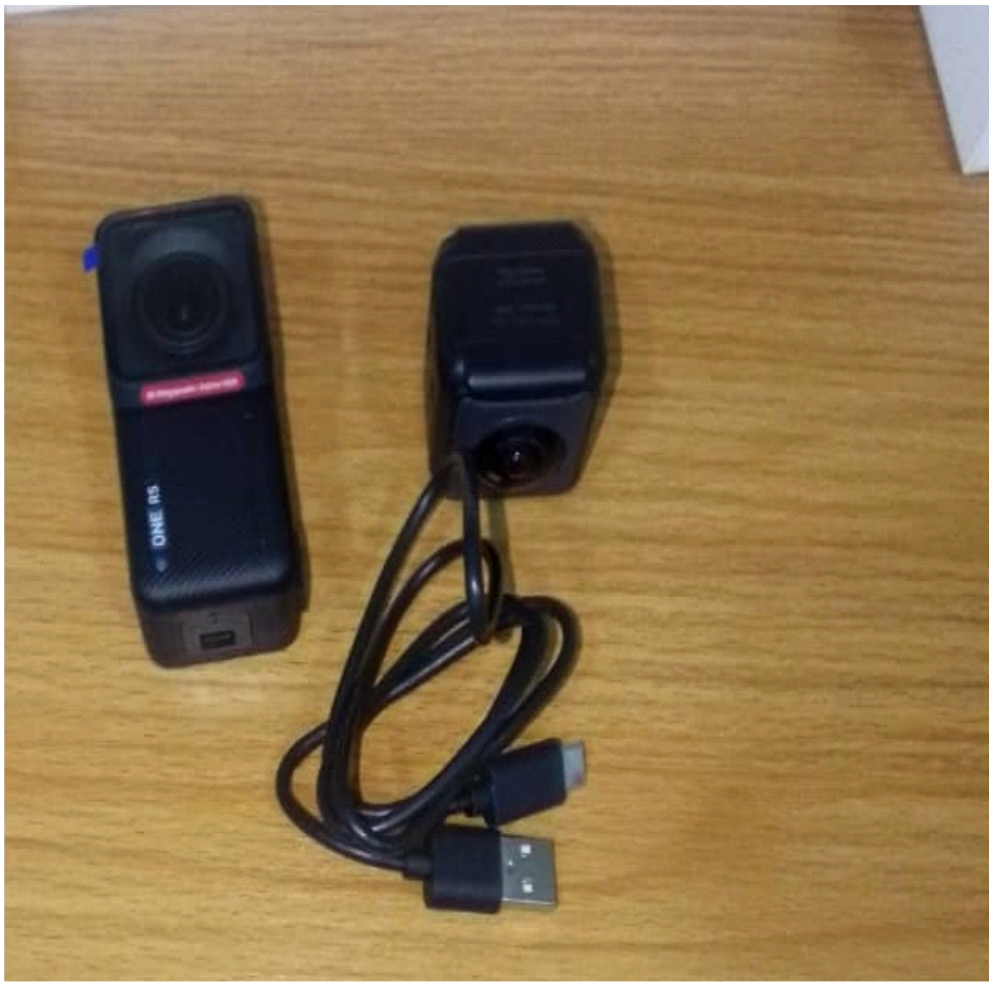
Server and Swtches



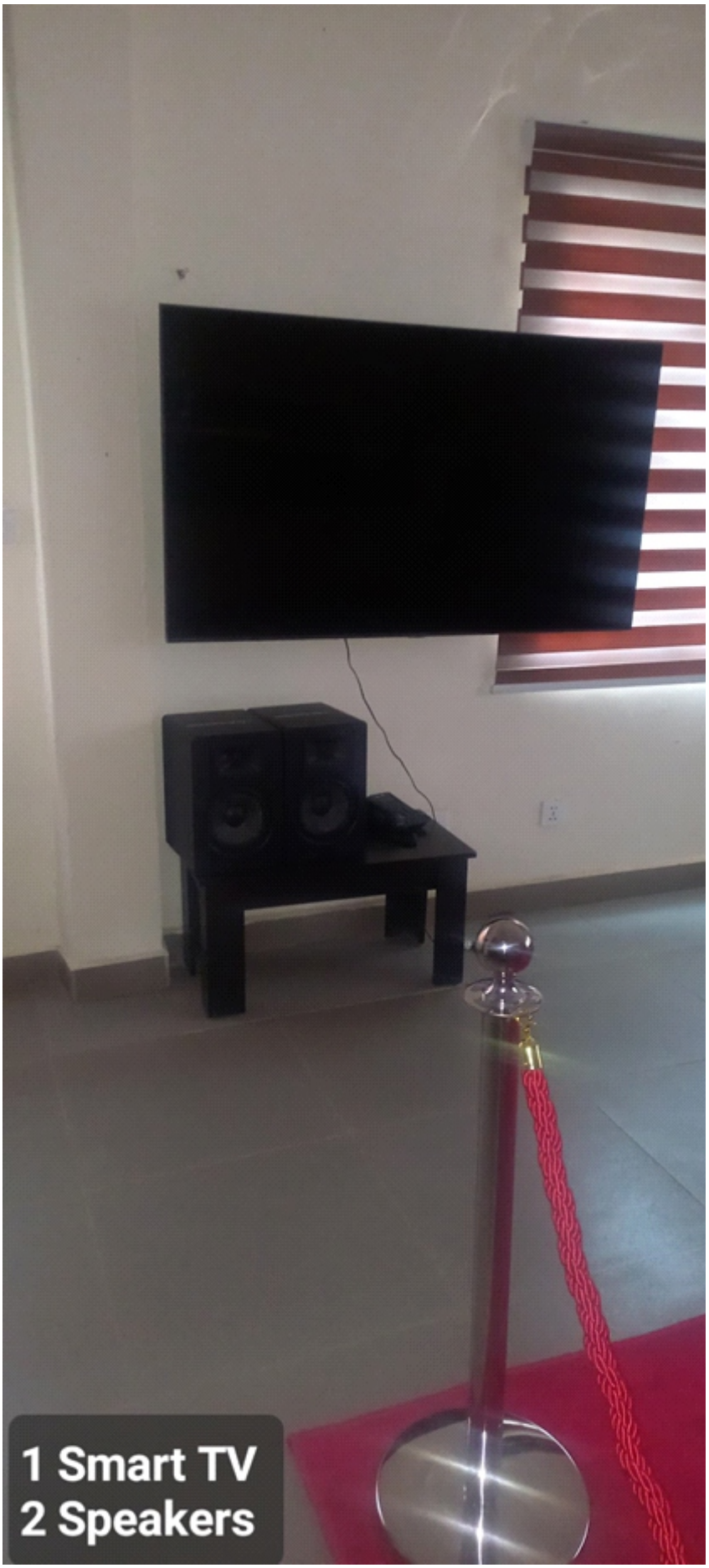
Virtual Reality Laboratory



Multimedia and C-CODE Laboratory



Samsung Gear 360 Camera


1 Smart TV
2 Speakers



Teleprompter



Canon DSLR Camera



Audio Mixer



Boom Pole Microphone



Microphone



Wireless Microphone Controller



Mac Mini – Apple M2



GODOX Studio Light Kit



Wireless Lavalier Microphones



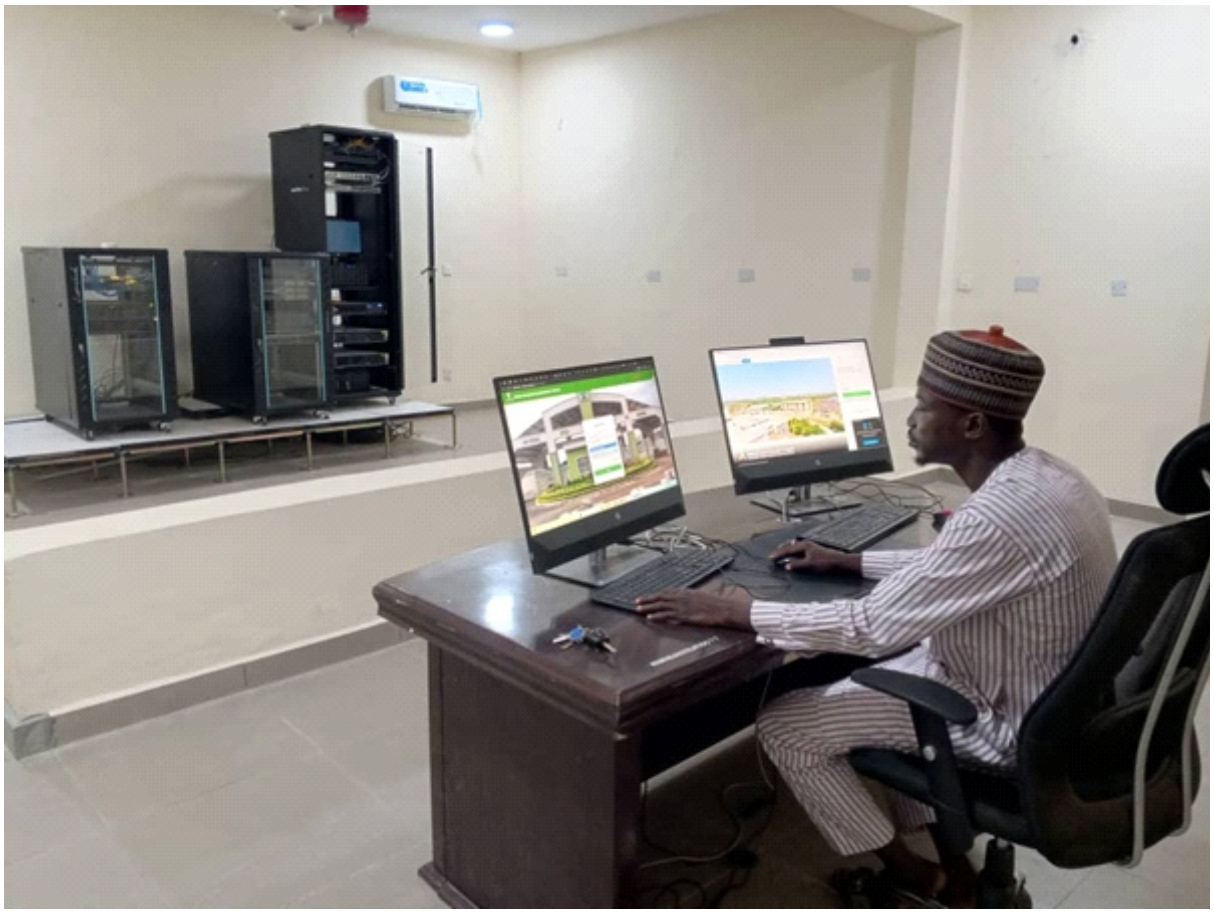
Wacom Cintiq Pro Set



External Drive – 16TB, USB-C



Atomos SUMO 19" Monitor-Recorder

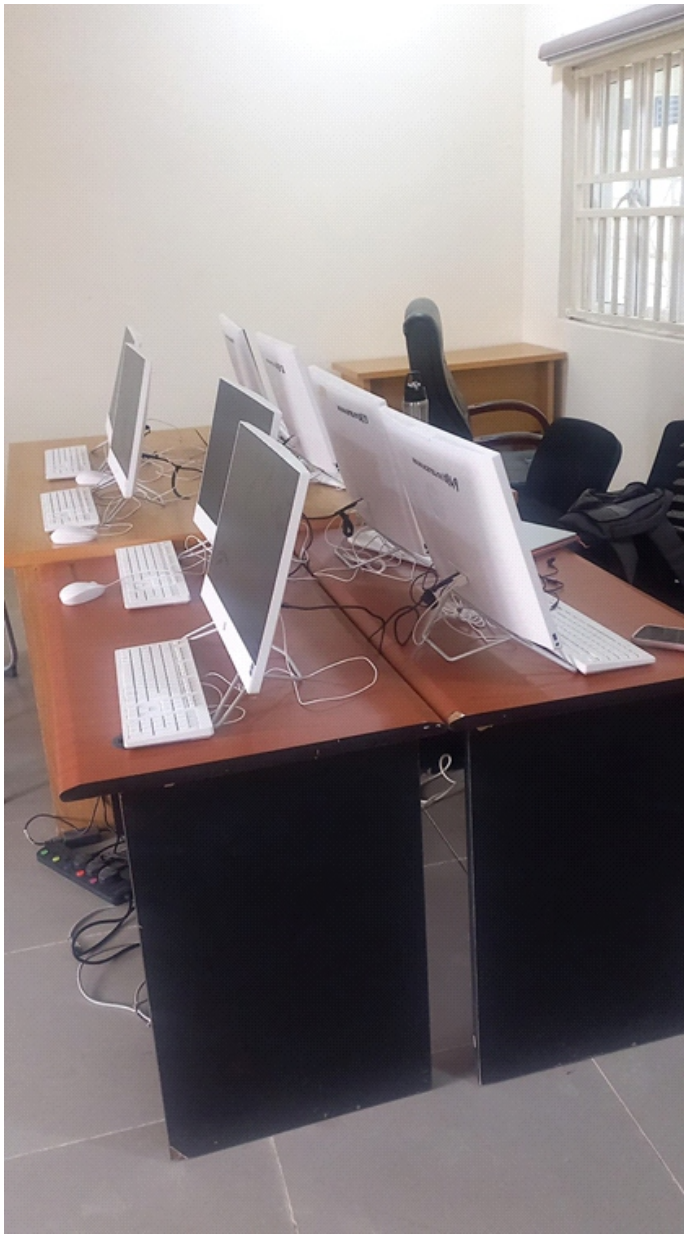


DATA CENTRE



IT ESSENTIALS LABORATORY





CISCO LAB


IT ESSENTIAL LABORATORY
HP All-in-one Desktop


HP Desktops and Networking Devices


HP Desktop, Scanner & Printer


LMS System


Servers


Cisco Switches


Cisco Routers

LAGOS STATE UNIVERSITY

CENTRE OF EXCELLENCE FOR INNOVATIVE AND TRANSFORMATION STEM EDUCATION (CITSE)

LASU ACEITSE SCHEDULE OF EQUIPMENT AND LOCATION

S/NO	EQUIPMENT	DESCRIPTION	LOCATION
1	Generator	100KVA Perkins Diesel	ACEITSE CENTRE
2	Laptop	1.4ghz Quad-Core 8Gen corei5	ACEITSE CENTRE
3	Motor vehicle	Toyota saloon car	ACEITSE CENTRE
4	Bookshelve	Bookshelves	ACEITSE CENTRE
5	Photocopy machine	Sharp AR 7024	Project Account Office
SSS6	Matress	3.5 by 8	ACE HOSTEL
7	Wooden Pulpit	Wooden Pulpit x 3	ACEITSE CENTRE
8	Microphones	JBL Professional wireless x 5	STEM building
9	Visitors Chair	C- Leg Visitors Chair	STEM building
10	Air Conditioners	1.5HP Panasonic x 9	STEM Lab
11	Air Conditioners	1.5HP Panasonic Malaysia x 15	STEM building
12	White Board	3M White board x 4	STEM building
13	White Board	2M White board x3	STEM building
14	Fire Extinguisher	6KG DCP x 2	STEM building
15	Fire Extinguisher	3KG Co2 x 5	STEM building
16	Fire/ Buckets	Red Buckets x 6	STEM building
17	Fire Exit board	Fire Exit board x2	STEM building
18	Fire Notice Board	Fire Notice Board x 2	STEM building
19	Door	Single door REF HR 185CS x2	STEM building
20	GOtv Decoder		STEM building
21	Laptop	HP ELITE 840 GB Core i5	Account Office
22	Printer	HP Laser Jet M404N	STEM building
23	Printer	HP Laser PRO MFP M283FDW	STEM building
24	Photocopier	Sharp AR704	STEM building
25	Data Projector	ACER 4000 LUMEN x 4	ACEITSE LAB
26	Television	43 inch LG FOUANI	STEM building
27	Television	32 inch LG FOUANI	STEM building
28	Executive chair	Executive chair	STEM building
29	Executive Kidney Chair	Executive Kidney Chair	STEM building
30	Table	2M Glasstop	STEM building
31	Table	1.6M Executive	STEM building
32	Table	1.2M Executive	STEM building
33	Laptop	HP ELITEBOOK 840 GS Touchscreen x 2	ACEITSE LAB
34	Digital PH Meter	Digital PH Meter	ACEITSE LAB
35	Electric Kettle	Electric Kettle	ACEITSE LAB
36	Shredding Machine	CD shredder	STEM building
37	Extinguishing panel	Extinguishing panel	STEM building

38	Laptop	HP 14 inch Core i3 512GB SSD 8GB X 5	ACCOUNT OFFICE
39	Laptop	HP 14 inch Core i5 512GB SSD 8GB X 5	ACCOUNT OFFICE
40	DESKTOP	HP ELITE DESK 705 SFF x 27	STEM building
41	Fire Extinguisher	Fire Extinguisher x3	ACEITSE LAB
42	Scanner	Canon Lide 300 x 2	ACEITSE LAB
43	Enamel tray	Enamel tray x 3	ACEITSE LAB
44	Air Conditioner	1.5HP Panasonic x 6	ACEITSE LAB
45	Ceiling Fan	Ox Giant 60" x 19	ACEITSE LAB
46	Chair	Chair for ICT LAB X 32	ACEITSE LAB
47	Chair	Classroom chair x 65	ACEITSE LAB
48	Laboratory stool	wooden top x 156	ACEITSE LAB
49	Wireless access point	Wireless access point x 5	ACEITSE LAB
50	Universal Router	Universal Router x 5	ACEITSE LAB
51	Sand buckets	Sand buckets x2	ACEITSE LAB
52	Printer	Network HP Laserjet MFP	STEM building
53	Digital hot plate	Digital hot plate	ACEITSE LAB
54	Daniel Cell Component	Daniel Cell Component x 10	ACEITSE LAB
55	Microscope	Travelling microscope x 10	ACEITSE LAB
56	Microscope	Student microscope x 10	ACEITSE LAB
57	Beam balance	Beam balance 2	ACEITSE LAB
58	Gas cylinder	Gas cylinder	ACEITSE LAB
59	Access Control	Biometric Access Control	Data Centre
60	Router	Cisco Router 4300 series	STEM building
61	Air conditioner	1HP Dual Inverter x 4	Data Centre
62	Fire wall	PA 2050 with security bundle x 2	Data centre
63	Mega Rack	42U Mega Rack x 2	Data centre
64	Server	HP ProLiant Server	Data centre
65	Switch	Cisco Catalyst switch 9200 x 2	Data centre
66	Monitoring Screen	60inches monitoring screen x 2	Data centre
67	Standing fan	20" OX x 3	ACEITSE Centre
68	Scanner	Scanner	ACEITSE Centre
69	Air Conditioner	X 7	ACIETSE Hostel
70	Blender	X2	ACEITSE Hostel
71	Standing Fan	20" OX x 6	ACEITSE Hostel
72	Standing Fan	20" OX x 6	ACEITSE Centre
73	Refrigerator	250L HAIER Thermocool	ACEITSE Hostel
74	Freezer	Thermocool 319 L Chest	ACEITSE Hostel
75	Gas cooker	Gas Cooker	ACEITSE Hostel
76	Generator	10KVA Petrol Thermocool	ACEITSE Hostel
77	Laptop	HP Core i5 x 5	ACEITSE CENTRE
78	Laptop	HP Core i3 x 4	ACEITSE Centre
79	Desktop	HP Core i3, 1TB 8GB RAM	ACEITSE Centre
80	Microwave	Microwave	ACEITSE Hostel
81	Printer	Colour printer	ACEITSE Centre
82	Television	32" LG LED	ACEITSE Hostel

83	SMART TV	43” FULL HD	ACEITSE Centre
84	UPS	UPS	ACEITSE Centre
85	Dispenser	Water Dispenser	ACEITSE Centre
86	Building	1 story multipurpose STEM LAB	STEM Building
87	Motor Vehicle	16- seater Toyota Hiace 2.7L Bus	ACEITSE Centre
88	Snapper Board	7ft x 3ft x 7	ACEITSE Centre
89	Cubicles	Reading Cubicles x3	ACEITSE Centre
90	Table	Reading Tables x3	ACEITSE Centre
91	Stopwatch	Stopwatch	ACEITSE LAB
92	Stop clock	Stop clock	ACEITSE LAB
93	Haemoglobin meter	Haemoglobin Meter	ACEITSE LAB
94	Inoculating Chamber	Inoculating Chamber	ACEITSE LAB


LASU/Y2024/ACEITSE/LAB/EQ/
Microlux
Digital Photo Colorimeter
LABORATORY INSTRUMENT
ITEM
Digital Photo Colorimeter


LASU/Y2024/ACEITSE/LAB/EQ/EM 1
PEACE SKY
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LASU/Y2024/ACEITSE/LAB/EQ/ RM
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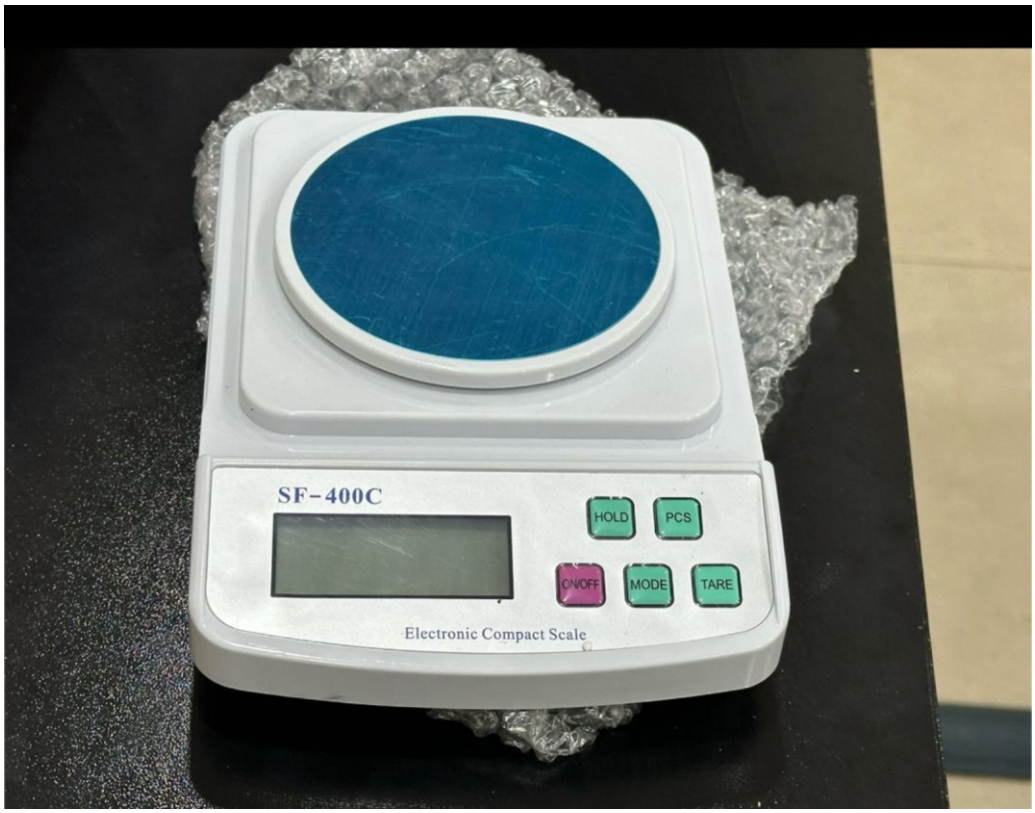
10E-5W
RESISTANCE


Spectrophotometer
S2


MICROSCOPE




UNISCOPE
SURGIFRIEND MEDICALS, ENGLAND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MULTISPAN
Digital Temp. Controller
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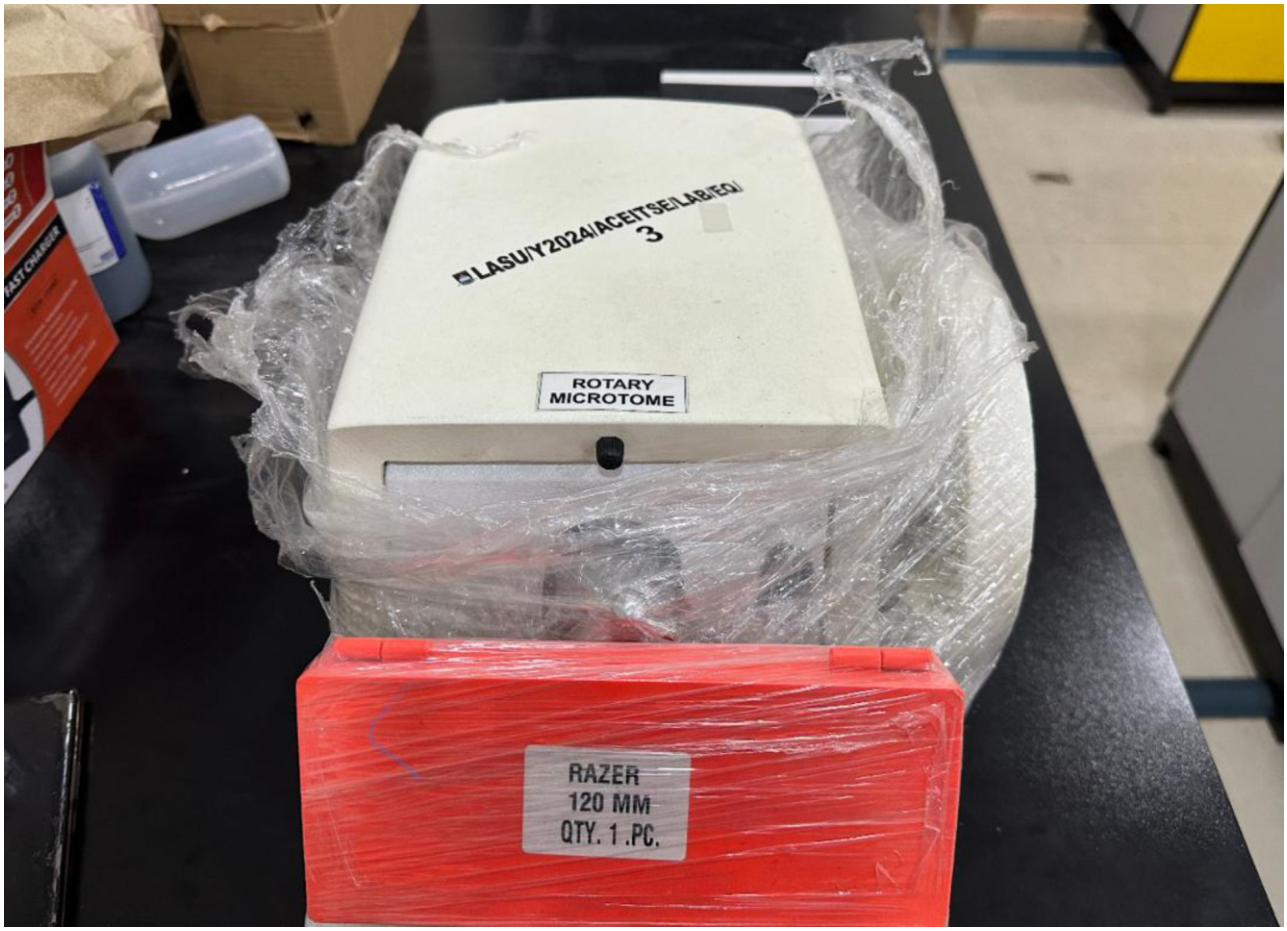
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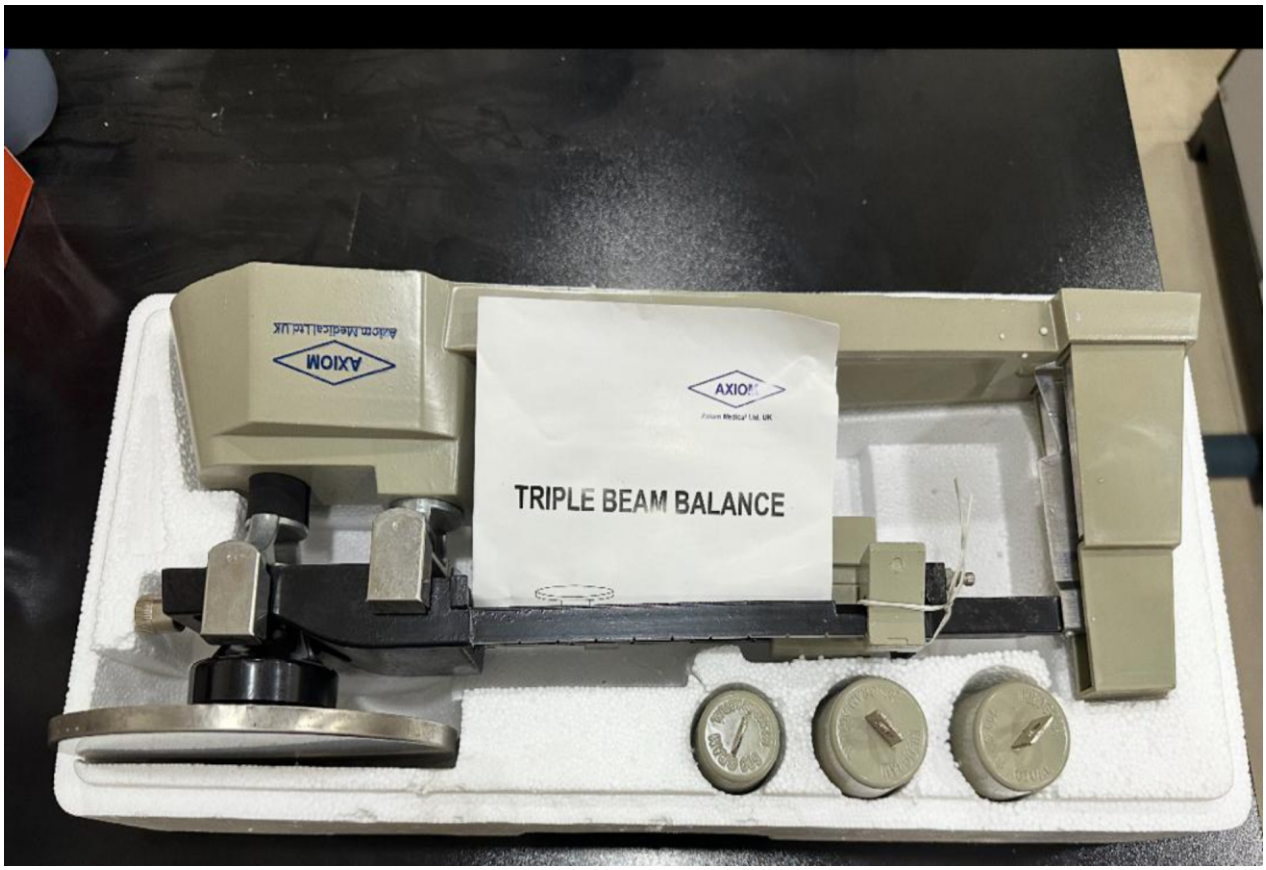
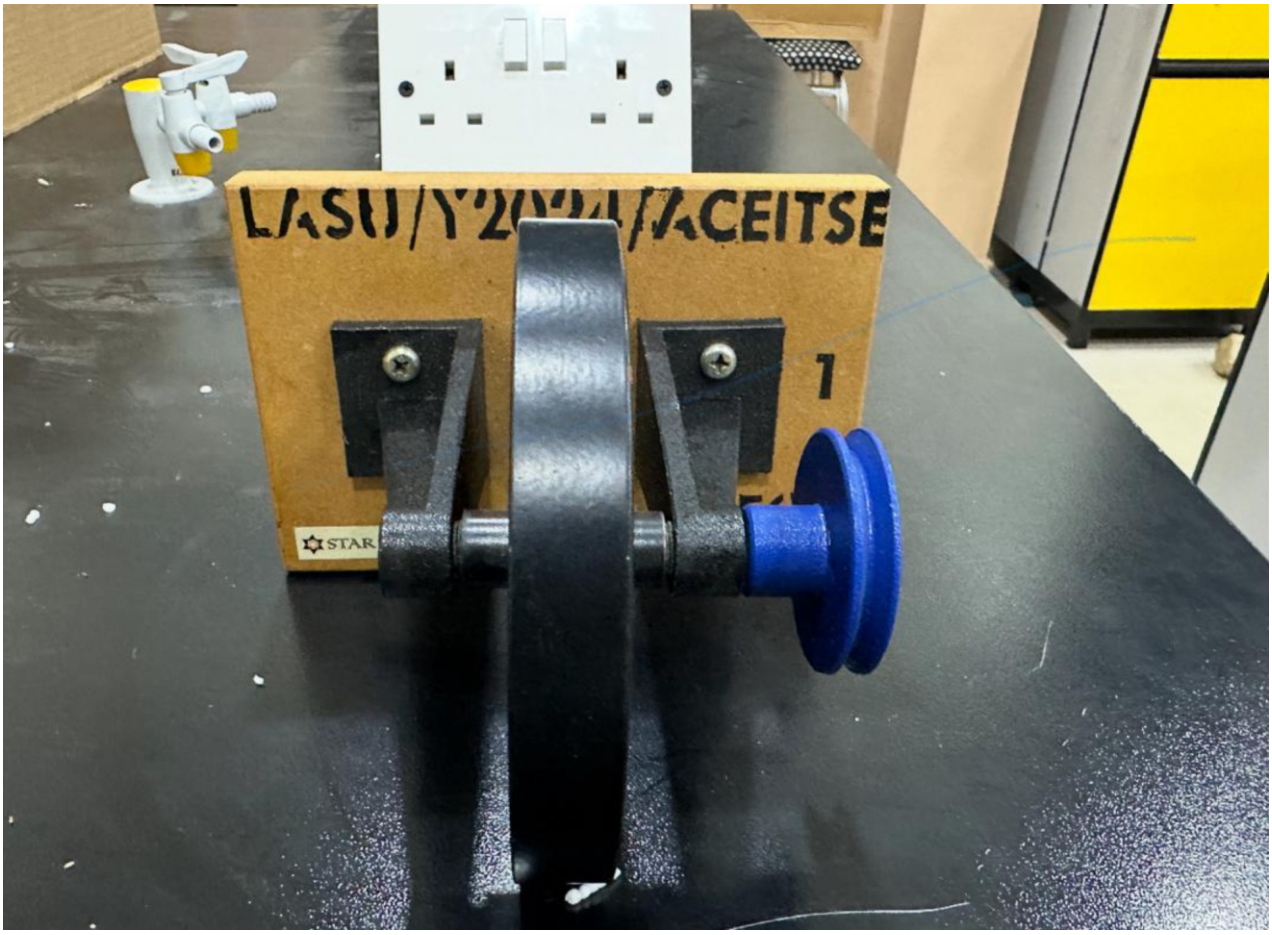

AXIOM
TRIPLE BEAM BALANCE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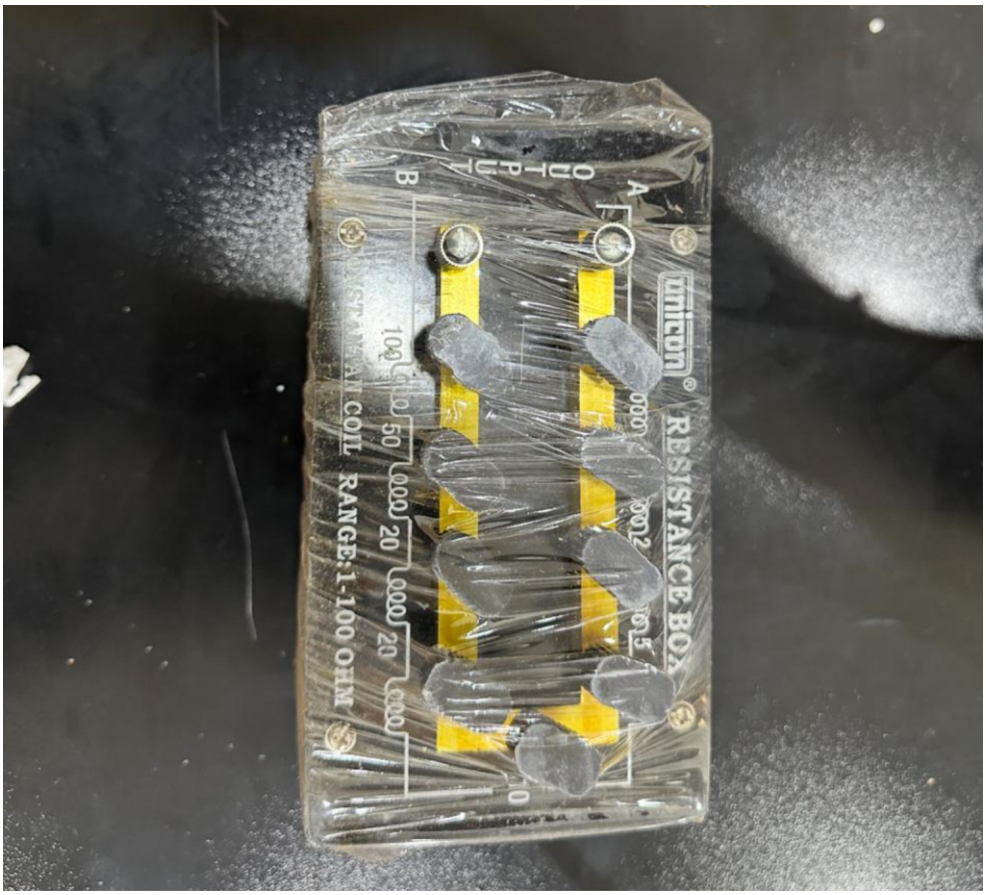
STAR


unicon
RESISTANCE BOA
COIL RANGE:1-100 OHM

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

CENTER OF EXCELLENCE FOR MYCOTOXIN AND FOOD SAFE (ACEMFS

LIST OF EQUIPMENT IN ACEMFS LABORATORIES AND THEIR DESCRIPTION/APPLICATION



Name: Thermo Scientific iCAP PRO Series Inductively Coupled Plasma-Optical Emission Spectrometry (ICP OES) Systems (Thermo Fisher Scientific)

Location: Laboratory II

Specifications

- **Voltage:** 200-240V, 50/60 Hz
- **Software:** Intuitive operation, step-by-step method creation, comprehensive QC features
- **Features:** Enhanced sample throughput, matrix tolerance, and flexibility
- **Frequency:** 50/60 Hz

Applications

- **Food and beverage analysis:** Determining the elemental/mycotoxin composition of food products and beverages for quality control and safety.
- **Environmental analysis:** Measuring trace elements/mycotoxins in water, air, and soil samples
- **Industrial analysis:** Measuring elemental composition in industrial materials such as polymers, ceramics, and metals.
- **Geochemical analysis:** Elemental composition analysis of rocks and minerals for geological studies
- **Pharmaceutical analysis:** Analysis of the elemental composition of drugs and raw materials for quality control and safety.



Name: Digital Trinocular Microscope with built-in-LCD Screen AmScope brand (XSZ-107BN model)

Location: Laboratory I

Specifications

- **Magnification:** 40X – 1600X
- **Stage:** Double layer mechanical stage 140x140 mm, moving range 75x45 mm
- **Viewing head:** Sliding binocular head inclined at 45°
- **Focusing:** Coaxial coarse and fine adjustment, focusing range 30 mm, focusing interval 0.002 mm.
- **Objectives:** Acromatic 4X, 10X, 40X(S), 100X (S, Oil).
- **Eyepieces:** Wide field eyepiece WF10X, WF16X
- **Camera:** Digital camera for capturing images
- **LCD screen:** Built-in for live viewing and image/video playback

Applications

- **Laboratory Research:** Microbiology, cell biology, and genetics
- **Education:** teaching demonstrations and student use in chemistry, biology, and **other scientific disciplines.**
- **Industrial use: for quality control and inspection tasks in electronics, manufacturing and materials science.**
- **Medical Diagnostics:** for clinical examinations and pathology analysis
- **Forensic Science:** for analyzing evidence including fingerprints, hair and fibers.



Name: Thermo Scientific Dionex UltiMate 3000 HPLC System with DAD-30000RS Diode Array Detector

Location: Laboratory II

Specifications

- **Type:** High-performance liquid chromatography (HPLC) system
- **Model:** UltiMate 3000
- **Components:**
  - Autosampler
  - Pump(s)
  - Diode array detector (DAD)
  - Thermostatted column compartment
- **Pressure range:** 1000 bar
- **Flow rate range:** 0.001 to 10 mL/min

Applications

- Clinical research
- Drug discovery
- Food quality control
- Biomarker identification
- Life science research
- Pharmaceutical development
- Environmental testing



Name: Autoclave Sterilizer, Class N Autoclave, STV-I Series – Bioevopeak

Temperature range: 105°C to 134°C (221°F to 280°F)
Pressure range: 0.22 MPa (32 psi)
Location: Laboratory I
Applications

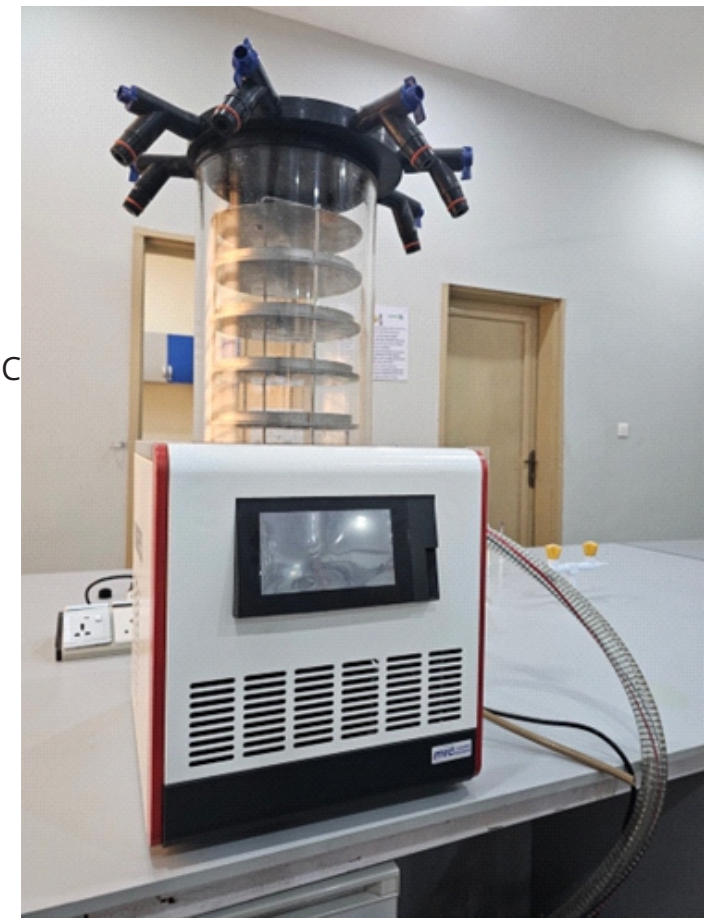
- **Sterilization**

Name: BIOBASE Vertical Freeze Dryer
Location: Laboratory I
Specifications

- Model: FDL2-10N-2-60D
- Type: Vertical, air-cooled
- § Vacuum Degree: 5Pa
- § Defrosting function: Yes
- § Cold trap Temperature: -56°C or -80°C (optional)

Applications

- Solvent removal from samples
- Purification of compounds
- Crystallization
- Drying of samples
- Botanical extraction
- Decarboxylation





Name: MilliporeSigma Direct -Q Direct-Q UV Water Purification System
Location: Laboratory I
Specifications

- § Water Type: Produces Type 1 ultrapure water
- § Resistivity: 18.2 M.cm at 25°C
- § UV Lamp: Built-in 185 nm and 254 nm UV lamp for low TOC water
- § Total Organic Carbon (TOC): 5 ppb
- § Applications: Suitable for organic-sensitive applications
- § Bacterial retention: Greater than 99%
- § Contaminant rejection: 99%

Applications

- · General laboratory use: Preparation of reagents, culture media, and buffers
- · Analytical techniques: GC, ICP-MS, HPLC, and other analytical instruments
- · Clinical application: Clinical chemistry and hematology analyzers
- · Life science applications: Molecular biology, cell culture, and protein purification.



Name: Rotary evaporator (Bioevopeak)

Location: Laboratory I

Specifications

- Model: Rev 2000A
- Voltage: 230V/50Hz

Applications

- Solvent removal from mixtures
- Concentration of solutions by evaporation
- Purification of compounds from mixtures
- Drying of samples by removing residual solvents
- Separation of compounds based on their boiling points
- Chemical synthesis
- Natural product extraction such as essential oils, and other valuable components from plants
- Cannabis and hemp extraction



Name: Heating Mantle
Location: Laboratory I
Specifications

- Model: 250ml*6
- Power: 1080W
- Voltage: 220V

Applications

- Heat or temper liquids in reaction vessels for
  - Distillation
  - Boiling
  - Extraction
  - Evaporation



Name: Fisherbrand Vortex Mixer Wizard IR model
Location: Laboratory I
Specifications

- **Speed:** Variable, up to 3000 rpm
- **Operation Modes:** Touch and Infrared Sensor
- **Accessories:** Compatible with a variety of tubes, plates, and flasks

Applications

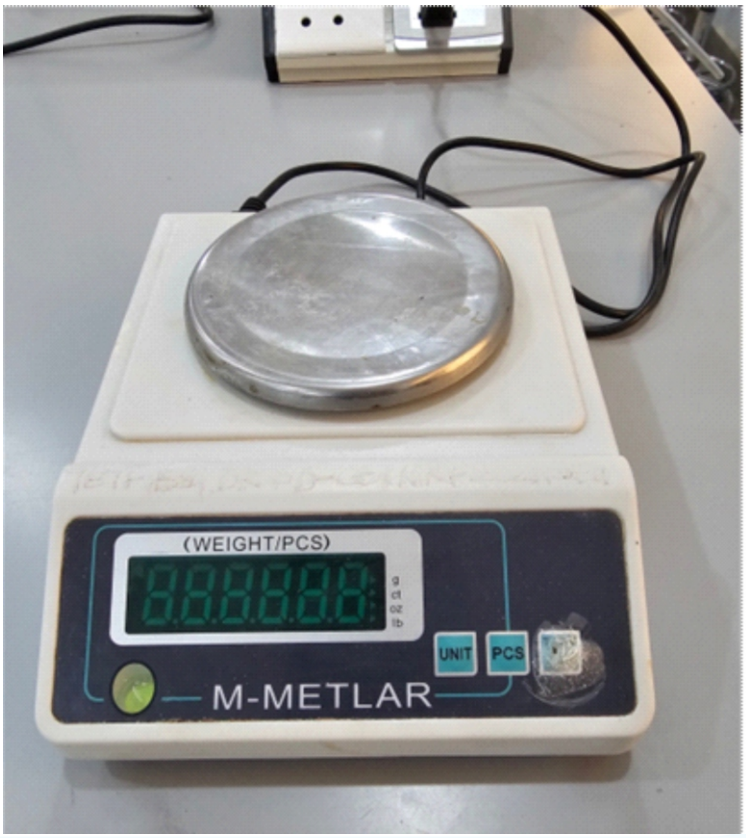
- **Mixing liquids:** in tubes, vials, or flasks
- **Sample preparation:** Mixing reagents, preparing blood samples, and DNA extraction
- **Resuspending particles:** Resuspends pellets, cells in a liquid, or precipitates

Name: Electronic scale (M-METLAR)
Location: Laboratory II
Specifications

- **Capacity:** 300G
- **Division:** 0.01G
  AC/DC Power supply

Applications

- **Laboratory:** Weighing media, chemicals, samples and other materials with precision
- **Industrial:** Measuring ingredients in food production, quality control.
- **Jewelry:** Weighing gemstones and precious metals





Name: UltraSonic Cleaner (Greatsonic)
Location: Laboratory I
Specifications

- **Model:** GS-DS240
- **Voltage:** AC220-240v 50Hz
- **Frequency:** 40kH
- **Ultrasonic power:** 120W
- **Heating power:** 100W

Applications

- **Laboratory cleaning:** Glassware, pipettes, and other laboratory equipment
- **Medical and dental instruments:** Cleans surgical instruments, dental tools, and other medical equipment

Name: Bioevopeak heating mantle
Location: Laboratory I
Specifications

- **Capacity:** 50 – 20,000 ml
- **Heating mode:** Surface heat-conduction
- **Maximum surface temperature:** 450°C
- **Temperature control range:** Room temperature + 20°C to 250°C

Applications

- Heating or tempering organic liquids in round-bottom flasks
- Boiling, evaporation, distillation, and extraction processes

Reaction kettles and relevant reaction vessels





Name: Kjeldahl Digestion Furnace
Location: Laboratory I
Specifications

- **Model:** KDN-08C
- **Temperature range:** Typically, up to 450oC
- **Digestion tube size:** 300 ml or 500 ml
- **Number of samples:** typically, 6-20 samples

Applications

- **Food and beverage analysis:** Protein content determination in meat, dairy, grains, etc.
- **Environmental analysis:** Nitrogen analysis in soil, wastewater, and fertilizers
- **Agricultural analysis:** Protein content in feed and forage
- **Chemical analysis:** Nitrogen determination in various chemical compounds
- **Pharmaceutical analysis:** Nitrogen content in drugs and active ingredients.



Name: Thermostat oven ET-9100A
Location: Laboratory II
Specifications

- Model: ET-9100A
- Manufacturer: E-Track Instruments
- Capacity: 50 litres
- Temperature range: Ambient to 250oC
- Temperature control: Digital thermostat with accuracy of +/-1°C

Applications

- **Sterilization:** Eliminating microorganisms from laboratory glassware and equipment
- **Drying:** Removing moisture from samples such as soil testing or material analysis
- **Annealing:** Heat treating metals and glass to improve their properties
- **Testing:** Simulating environmental conditions for product testing and quality control



Name: Thermo Scientific ISQ 7610 Gas Chromatography Mass Spectrometry (GC-MS) System, coupled with a TRACE 1610 Gas Chromatograph
Location: Laboratory II
Specifications

- **Mass Spectrometer:** ISQ 7160
- **Gas Chromatograph:** TRACE 1610
- **Mass Range:** 1.2 – 1100 u
- **Scan Speed:** 20,000 u/sec
- **Sensitivity:** High sensitivity for trace analysis
- **Ion Source:** Electron ionization (EI) and optional Chemical Ionization (CI)
- **Software:** Thermo Scientific Chromeleon Chromatography Data System (CDS)
- **Detector:** Electron Multiplier

Applications

- **Food Safety:** Analysis of food products for contaminants, adulterants, and pesticide residues
- **Forensic Science:** Drug testing, analysis of arson residues, identification of unknown substances
- **Environmental Analysis:** Detection of pollutants, pesticides, and other contaminants in soil, water, and air
- **Clinical Chemistry:** Analysis of biomarkers and metabolites in biological samples
- **Pharmaceutical Analysis:** Quality control testing, impurity profiling, and drug discovery.
- **Petrochemical Industry:** Analysis of crude oil, fuels, and other petroleum products.



Name: Genesys 150 UV-Vis Spectrometer
Location: Laboratory II
Specifications

- **Wavelength:** 190 – 1100 nm
- **Bandwidth:** 1.8 nm
- **Detector:** Silicon photodiode
- **Light source:** Xenon flash lamp (long life, no warm-up time)
- **Display:** Color touchscreen
- **Data output:** USB, Ethernet
- **Software:** Local control, optional PC software

Applications

- **Quantitative Analysis:** Measure the concentration of known substances in a solution by measuring the absorbance at specific wavelength
- **Qualitative Analysis:** Identify unknown substances by their characteristic absorption spectra
- **Chemical Kinetics:** Monitor the progress of chemical reactions by measuring the change in absorbance over time.
- **Protein/DNA Analysis:** Determine the concentration and purity of DNA and protein samples.
- **Pharmaceutical Analysis:** Quantify drug compounds and analyze their purity.
- **Environmental Monitoring:** Analyze soil and water samples for pollutants
- **Food and Beverage Analysis:** Measure the concentration of various components in food and beverages, e.g. vitamins, sugar, and caffeine.

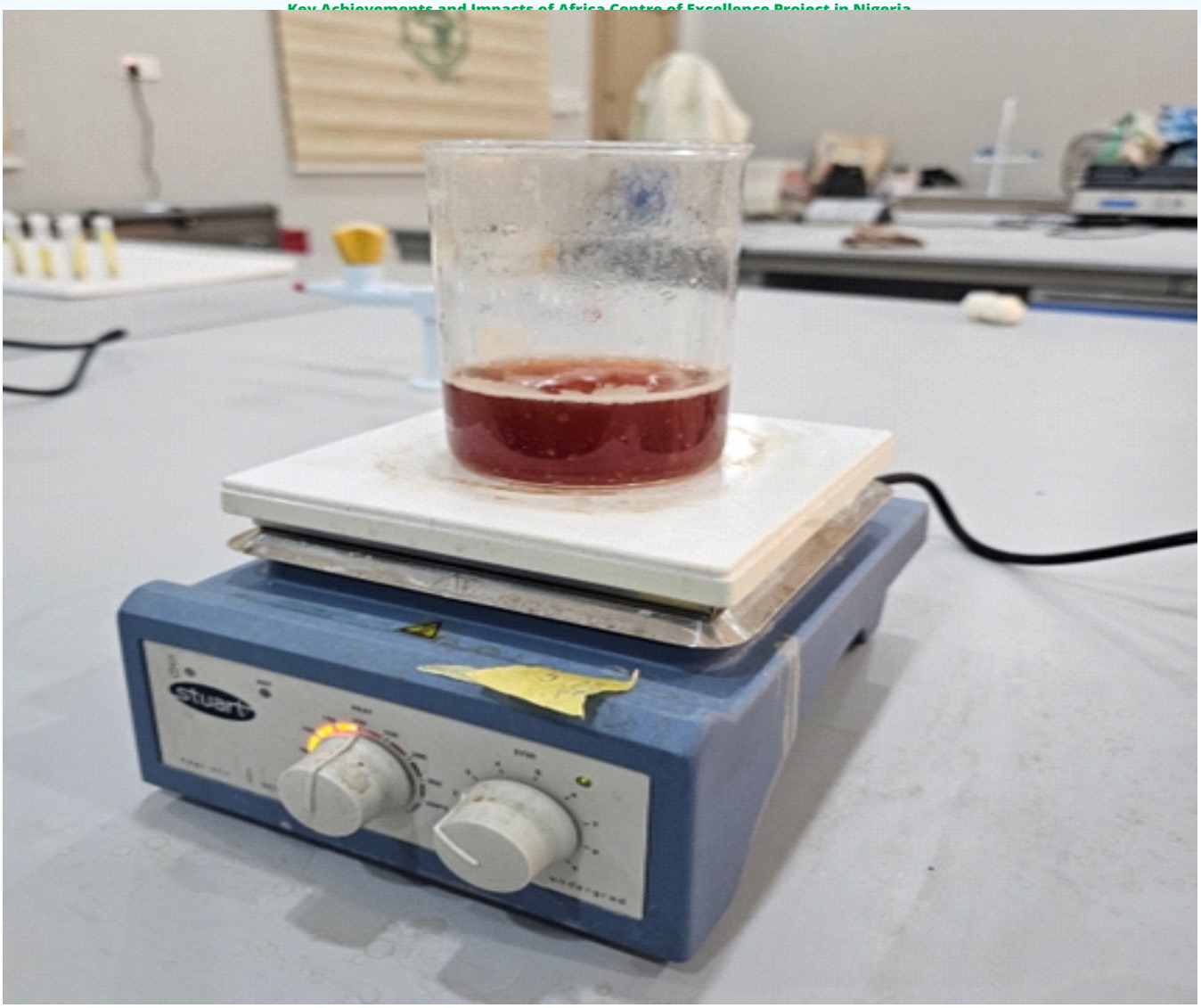


Name: Digital Rotator
Location: Laboratory II
Specifications

- **Model:** DOR-2828D
- **Volts:** 100-240 Hz
- **AMPS:** 0.5 W
- **R.P.M:** 250

Applications

- **Mixing blood samples:** Prevents coagulation and ensures homogeneity
- **Aerating cultures:** Provides oxygen for cell growth
- **Hybridization:** Promotes binding of molecules in assays
- **Staining and washing:** Even distribution of reagents
- **Suspending biological samples:** Keeps cells and particles evenly distributed
- **VDR and RPR tests:** Used in syphilis serology
- **EIA tests:** Enzyme immunoassays for various analytes



Name: Stuart UC152 hotplate stirrer
Location: Laboratory II
Specifications

- **Plate Size:** 150 X 150 mm
- **Top Plate Materia:** Ceramic glass
- **Temperature Range:** Ambient to 450°C
- **Stirring Speed:** 100 to 2000 rpm
- **Maximum Stirring Capacity:** 15 liters
- **Dimensions:** 172 x 248 x 122 mm
- **Weight:** 2.9 kg

Applications

- **Biology:** Culture media preparation, incubating samples, cell culture, mixing microbial cultures.
- **Chemistry:** Dissolving solids, accelerating reactions, mixing reagents
- **Physics:** heating and stirring liquids for experiments



Name: CENHBR-1 L Benchtop High-speed Refrigerated Centrifuge (MRC LTD)
Location: Laboratory II
Specifications
Max speed: 18500r/min
Voltage: 220V 50HZ
Max RCF: 29990Xg

Applications

- Cell biology: Separating cells, organelles, and subcellular components
- Molecular biology: DNA and RNA isolation, PCR analysis, protein purification
- Microbiology: bacterial and viral isolation.
- Clinical diagnostics: Serum separation, blood component isolation
- Nanotechnology: Nanoparticle separation and purification

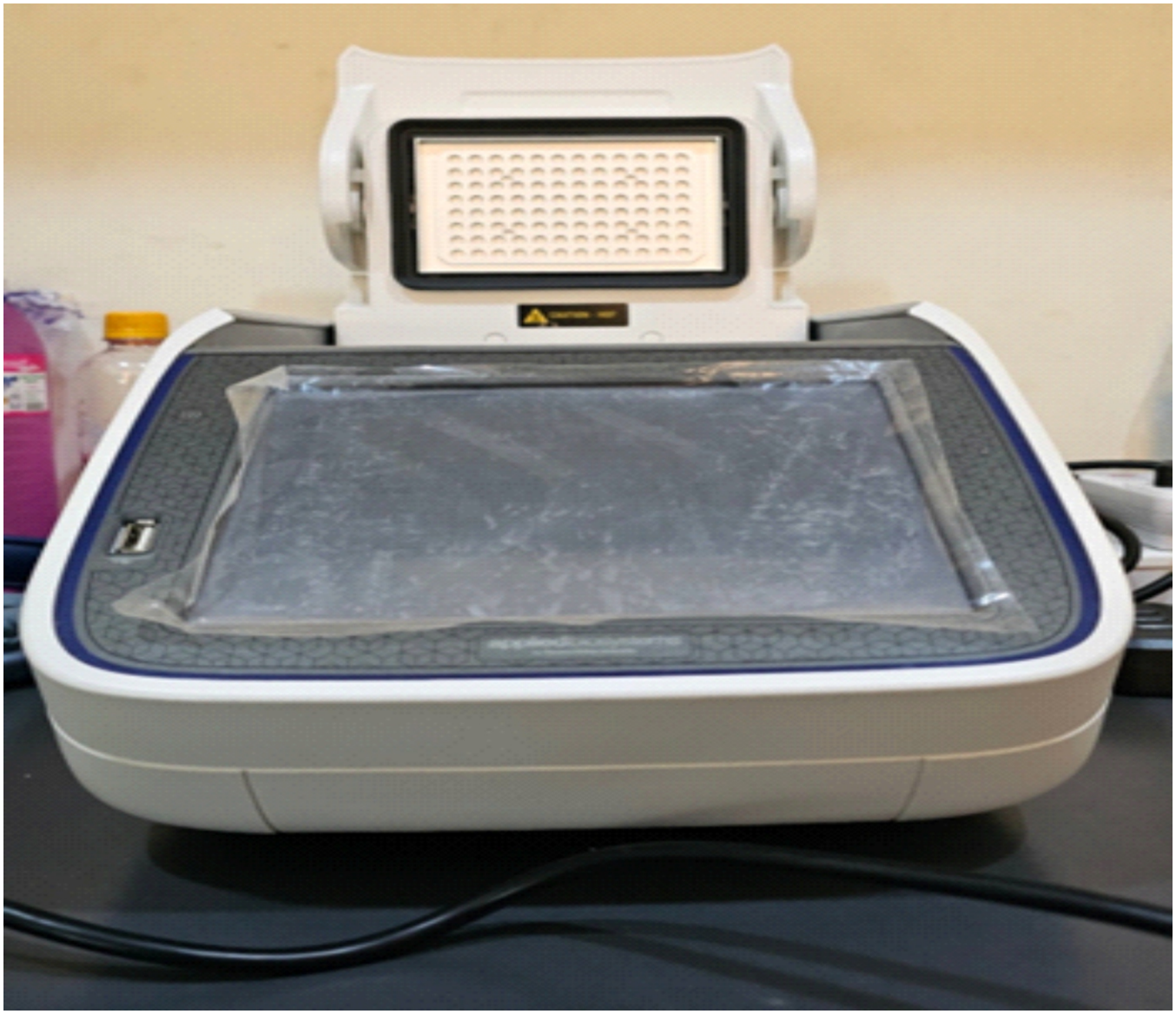


Name: Drying oven DON-18E (Bioevopeak)
Location: Laboratory II
Specifications

- **Voltage:** 230/50Hz
- **Model:** DON-18E

Applications

- **Drying:** Removing moisture from samples, such as powders, glassware, and other laboratory materials.
- **Sterilizing:** Sterilizing equipment and glassware.
- **Annealing:** Heat-treating materials to modify their properties
- **Heating:** Heating samples to a specific temperature for various experiments or processes.
- **Curing:** Curing materials such as epoxy resins or polymers



Name: Applied Biosystems SimpliAmp Thermal Cycler
Location: Laboratory II
Specifications

- **Capacity:** 96-well (0.2 mL)
- **Temperature:** 4°C to 99°C
- **User Interface:** 8-inch color touchscreen
- **Ramp Rate:** Up to 3.0°C/sec

Applications

- **Gene expression analysis:** Studying the expression levels of genes in different samples
- **DNA sequencing:** Determining the order of nucleotides in a DNA molecule.
- **Cloning:** Generating multiple copies of a specific DNA fragment
- **DNA Amplification:** Perform PCR, which amplifies specific DNA sequences for various downstream applications
- **Genotyping:** Identifying genetic variations between individuals
- **Disease diagnostics:** Detecting the presence of pathogenic organisms or genetic mutations.



Name: Thermo Fisher Applied Biosystems QuantStudio 5 Real-Time PCR System
Location: Laboratory I
General Specifications

- **Sample capacity:** 96-well or 384-well formats available
- **Temperature range:** 4-99.9°C
- **Reaction volume:** 10 to100 L
- **Maximum block ramp rate**: 6.5°C/sec (96-well)
- **Average sample ramp rate:** 3.66°C/sec (96-well)
- **Excitation source:** Bright white LED
- **Excitation/detection range:** 450-680 nm and 500-730 nm
- **Connectivity:** Stand-alone, PC-connected, or cloud-based via LAN or Wi-Fi

Applications

- Pathogen detection
- Gene expression analysis
- SNP genotyping
- Absolute and relative quantification
- High-resolution melt



Name: Benchmark BeadBug 6-position Homogenizer
Location: Laboratory I
Specifications

- **Model:** HOG-O6
- **Speed:** 4.0 m/s – 7.0 m/s (in 0.05 m/s increments)
- **Timer: 1 sec – 90 sec**
- **Grinding Formats:** 6 x 6 ml tubes, 2 x 5 ml tubes
- **Dimensions:** 8.6 x 14 x 8 inches

Applications

- **Molecular biology:** DNA, RNA, and protein extraction from tissues and cells
- **Microbiology:** Cell disruption for yeast, bacteria, and fungi
- **Environmental science:** Soil and sediment analysis
- **Food science**: Food sample preparation for analysis
- **Pharmaceutical research:** Drug discovery and development



Name: Benchmark Scientific PlateFuge Microcentrifuge
Location: Laboratory I
Specification

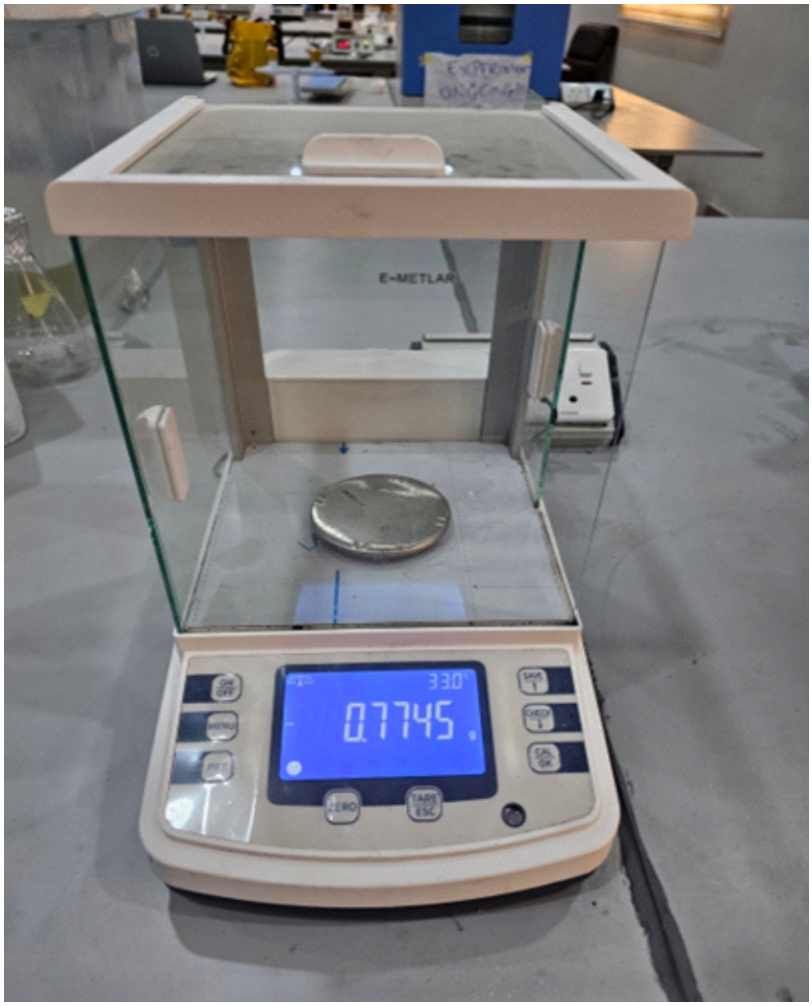
- **Speed:** 2,550 rpm/600 xg
- **Capacity:** 2 PCR plates, 2 microtiter plates (up to 25 mm)
- **Deceleration:** 4 seconds
- **Dimensions:** 9.2 x 10.2 x 7.75 in
- **Weight:** 9 lbs

Applications

- PCR plate spin-down
- Microplate applications

Name: Balance (E-METLAR)
Location: Laboratory II
Applications

- Preparation of samples
- Formulation
- Differential weighing
- Density determination
- Pipette calibration
- Quality control
- Model: FA2204B
- Voltage: 220V/50Hz





Name: Thermostat incubator with shaker
Location: Laboratory II
Specifications

- Model: IN-SK30
- Capacity: 30 liters
- Temperature: Ambient + 5°C to 60°C
- Shaking speed: Adjustable

Applications

- **Microbiology:** Growing and maintaining microbial cultures
- **Cell culture:** Incubating cells for research and diagnostics
- **Biochemical reactions:** Providing controlled environment for enzyme assays
- **Hybridization:** incubating samples for nucleic acid hybridization experiments
- **Food and beverage testing:** analyzing food and beverage samples for microbial contamination
- **Pharmaceutical testing:** Testing the stability and efficacy of pharmaceuticals



Name: Biogold Biosafety Cabinet BSC-70011A2
Location: Laboratory I
Specifications

- **Class:** Class II, Type A2
- **Model:** BSC-70011A2
- **Airflow:** 70% recirculated, 30% exhausted
- **Inflow velocity:** 75 feet per minute
- **Features:** LCD display, UV lamp for decontamination

Applications

- **Molecular biology:** Performing DNA and RNA work
- **Cell culture:** Maintaining sterile conditions for cell growth and manipulation
- **Microbiology:** Working with non-volatile infectious agents
- **Genetics:** Handling genetic material
- **Research:** Various research applications requiring protection from biohazards



Name: Stainless steel distillation apparatus used for producing distilled water or other liquids

Location: Laboratory I

Specifications:

- Material: Food-grade stainless steel
- Model: YAZD-10
- Voltage: 220 v
- Power: 7.5 kw
- Capacity: Medium-sized benchtop
- Heating method: Electric heating element
- Cooling method: Water-cooled condenser
- Output: Produces distilled water or other purified liquids

Applications:

Laboratory use:

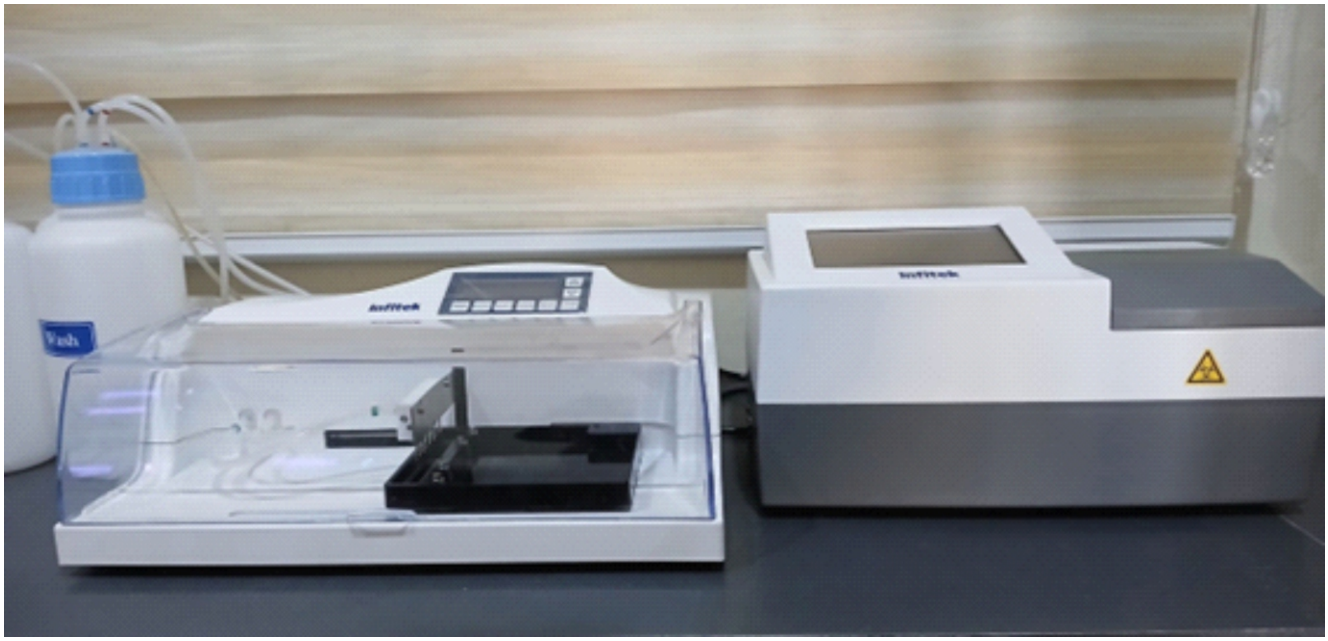
- Producing deionized or distilled water for experiments, preparing solutions, or cleaning glassware.

Medical Use:

- Sterilization, preparation of purified water for injections or drug formulations

Industrial use:

- Small-scale production of distilled spirits, essential oils, or other purified chemicals



Name: Infitek Elisa Microplate Reader (Laboratory microplate washer) MPR-D110
Location: Laboratory I

Specifications:
Compatibility:

- Designed for washing standard 96-well plates and microstrips.

Programmability:

- Fully programmable, allowing for customized wash protocols including tank selection, volumes, step times, and cycles.

Features:

- Automatic liquid monitoring, sweep function with aspiration, multi-buffer module, and a large LCD screen.

Applications:

- **ELISA (Enzyme-Linked Immunosorbent Assay):** used for washing microwells as part of ELISA testing process, crucial for reliable test results.
- **Cell-based assays:** Utilized for washing cell cultures in various research and diagnostic applications.
- **Protein arrays and Western blots:** Employed for washing procedures in molecular biology techniques.
- **DNA Purification protocols:** applied in steps requiring washing during DNA purification.
- **Microsphere-based assays:** used in assays involving microspheres for various analyses.



Name: Mindray BC-5000 Auto Hematology Analyzer
Location: Laboratory I
Specifications:

- **Model:** BC-5000
- 100 – 240V
- 300VA

Parameters:

- it provides complete blood count (CBC) with a 5-part differential, including 23 parameters.

Features:

- Offers 3 scatter-grams for WBC differential and 3 histograms for WBC, RBC, and PLT.

Sample Volume:

- Requires only 15uL of blood for analysis

Throughput:

- Capable of processing up to 40 samples per hour.

Storage:

- Large storage capacity for up to 20,000 samples

Applications:
Clinical Diagnostics:
Primarily used in diagnostic laboratories to obtain full CBC (Complete Blood Count) and 5-part differential results.

Healthcare Facilities:
Essential across various clinical departments, such as general practice, emergency care, and specialized medical units.

Research:
Suitable for healthcare professionals and researchers requiring advanced hematology analysis.



Name: Motic AE2000 Inverted Microscope

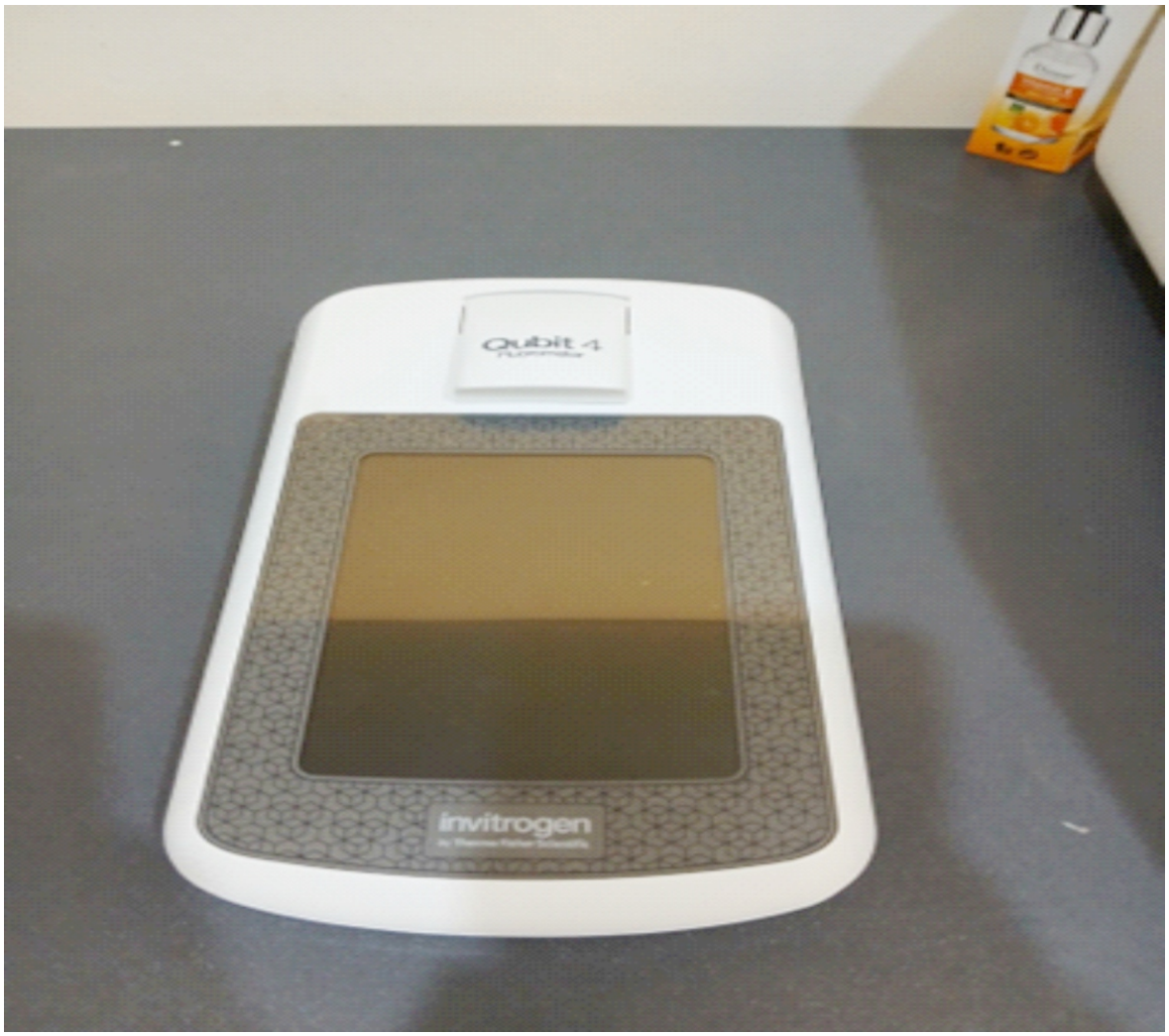
Location: Laboratory II

Specifications:
Optical System: CCIS Optical system (Colour Corrected Infinity System).
Magnification: 40X, 100X, 200X, 400X.
Illumination: 6V/30W Halogen or 3W LED.
Nosepiece: Quadruple, left side facing.
Condenser: N.A 0.3, W.D. 72mm; N.A.0.4, W.D. 53mm; N.A. 0.5, W.D. 28mm.
Stage: fixed, with dimensions 200 x 239mm.
Focus: Coaxial coarse and fine focusing system with tension adjustment, fine focus precision 2µm.
Eyepiece: Widefield N-WF 10X/20mm with diopter adjustment, +/- 5 diopter.
Interpupillary distance: 48 – 75mm.
Inclination: 45° inclined, 360° swiveling
Model: AE2000

Applications:
Microbiology:
- Examination of microorganisms in various samples and for educational purposes.

Tissue Culture:
- Used for research involving living tissues and cell cultures.

Pharmaceutical and Clinical Laboratories:
- Used for routine analysis.



Name: Invitrogen Qubit 4 Fluorometer

Location: Laboratory I

Specifications:
Manufacturer: Thermo Fisher Scientific
Sample requirement: Requires as little as 1 µL of sample.
Quantification Time: Quantifies DNA, RNA, and protein in less than three seconds per sample.
Data Storage: Stores up to 1000sample results.
RNA Integrity Assessment: Measures intact RNA in less than five seconds per sample.
Connectivity: Features USB and Wi-Fi connectivity for data export and software downloads.
Display: Equipped with color touchscreen.

Applications:

- Used for accurate and sensitive quantification of DNA, RNA, and protein.
- Used to asses RNA integrity.



Name: Invitro E-Gel Power Snap Plus Electrophoresis Device by Thermo Fisher Scientific

Location: Laboratory I

Specifications:

Compatibility:

- Designed for use with pre-cast E-Gel agarose gels including E-Gel™EX, E-Gel™ 48, E-Gel™ 96 and E-PAGE™ gels.

Connectivity:

- Features a WiFi dongle and an Ethernet port for data export to cloud or internal servers.

Integrated System:

- Combines a power supply, blue light transilluminator, and amber filter in one base unit, along with a camera module for high-resolution image capture.

Components: Available in various starter kits that can include the camera, WiFi dongle and gels.

Applications:

- **Nucleic Acid Electrophoresis and Documentation:** Streamlines the workflow for separating and visualizing DNA and RNA.
- **High-Resolution DNA Screening:** Suitable for both high- and low- throughput DNA gel imaging and analysis.
- **Routine PCR Fragment Analysis:** Efficiently analyzes DNA fragments resulting from PCR
- **Genotyping:** Used for determining genetic variations.
- **Other Applications:** Applicable to various molecular biology experiments requiring nucleic acid analysis.



Name: Thermo Scientific NanoDrop one or NanoDrop OneC Microvolume UV-Vis Spectrophotometer.

Location: Laboratory I

Specifications:

- **Models: NanoDrop One (pedestal only) and NanoDrop OneC (pedestal and cuvette).**
- **On-Board Control:** Android™ operating system with a 7-inch, 1280 x 800 high-definition color touchscreen display.
- **Spectral Range:** 190-850 nm.
- **Sample Volume:** Typically requires only 102 µL for pedestal measurements.
- **PC Software Requirements:** Windows 7 and 10, 64-bit compatible.
- **Connectivity:** USB-A ports, Ethernet, Bluetooth, and Wi-Fi.

Applications:

Nucleic Acid Analysis: Quantification and purity assessment of DNA and RNA (A260, A260/A280. A260/A230, Labeled Nucleic Acids).

Protein Analysis: Quantification of purified proteins (A280, A205) and various protein assays like Pierce 6660, Bradford, BCA, and Lowry.

Diverse Sample Types: Suitable for peptides, toxicology assays, gold nanoparticles, and optical density measurement.

Other Measurements: OD600 for bacterial cultures, kinetics experiments, UV-Vis spectrometry, and custom methods.



Name: High-speed Multifunction Grinder (HC-250Y)

Location: Laboratory I
Specifications:
Voltage: 220V
Capacity: 250G
Fineness: 30-300 mesh
Working time: 0-5 minutes
Rated Power: 1500W
Rotation Speed: 28000 r/min
Interval: 10-15 minutes

Applications:

- **Grinding Grains & Herbs:** Process various grains such as rice, and corn as well as herbs like tianqi, licorice, and Ganoderma, etc.
- **Spice Grinding:** Suitable for grinding spices including pepper.
- **Other Dry Materials:** Used for grinding minerals, food additives, and medical substances (pearls).



Name: The Mindray BS-240 Fully Automatic Chemistry Analyzer

Location: Laboratory II

Specifications:

- **Throughput:** Up to 200 tests/hour, or up to 400 tests/hour with an Ion Selective Electrode (ISE) module.
- **Sample Volume:** 2-45µl, in 0.5µl steps.
- **Reagent Volume:** 10-250µl in 0.5µl.
- **Minimum Reaction Volume:** 100µl
- **Sample Positions:** Up to 80
- **Probe Carryover:** Less than 0.05%
- **Dimensions:** 690 mm (length) x 580 mm (depth) x 595 mm (height).
- **Classification:** Class I medical device.

Applications:

- **Clinical Settings:** For routine biochemical testing, pre-operative assessments, and emergency diagnostic evaluations in hospitals and clinical laboratories.
- **Research & Development:** Applicable in research and development labs for various biochemical analysis.
- **Laboratory Solutions:** Serves as an optimal chemistry solution for small laboratories and backup tool for mid-to-high-end laboratories.
- **Veterinary Diagnostics:** Offers specialized capabilities for veterinary clinical chemistry.

UNIVERSITY OF LAGOS

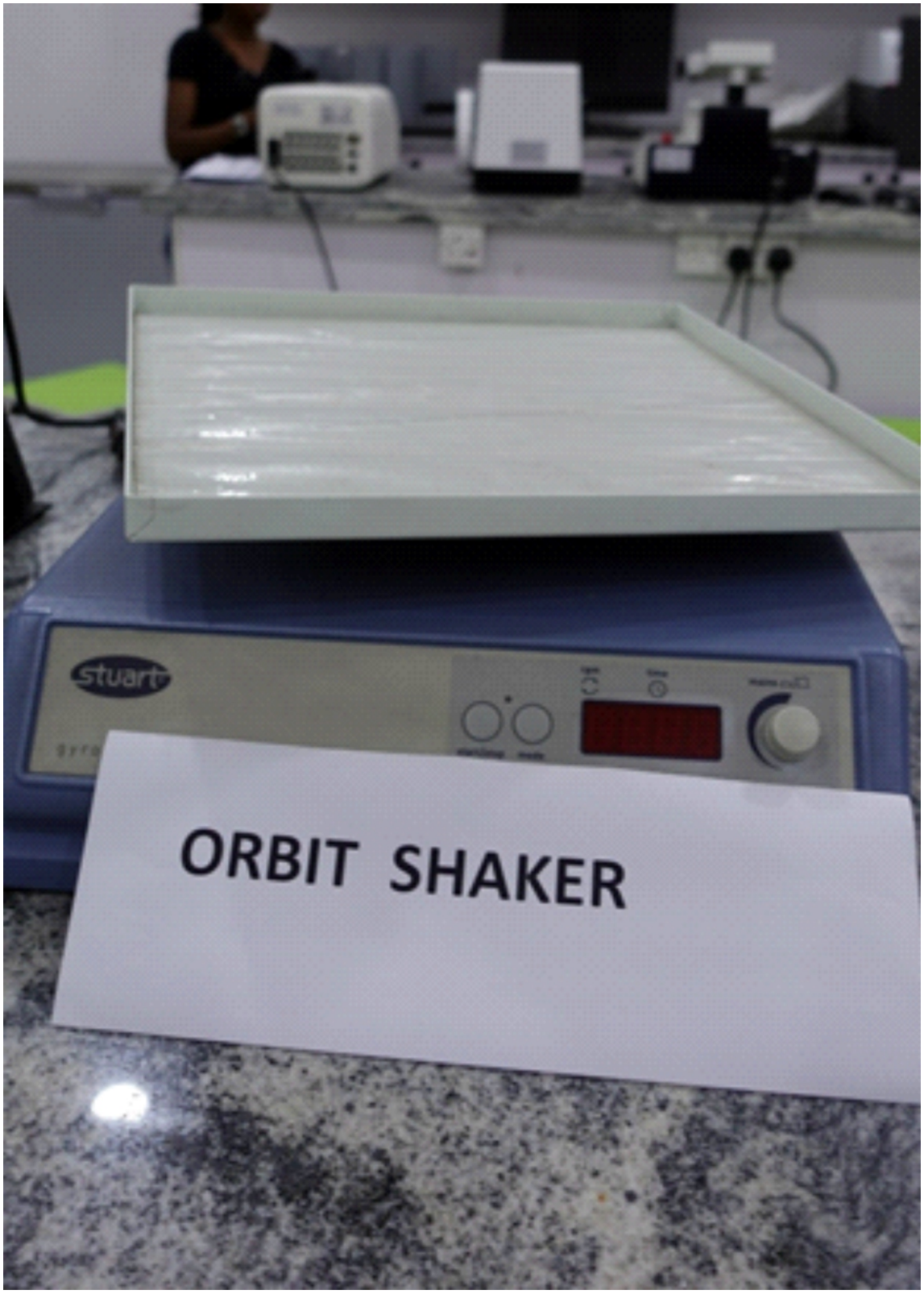
AFRICAN CENTRE OF EXCELLENCE FOR DRUG RESEARCH, HERBAL MEDICINE DEVELOPMENT, AND REGULATORY SCIENCE(ACEDHARS)




PHYTOMETER


MILIQ WATER
PURIFICATION SYSTEM


MILIQ WATER
PURIFICATION SYSTEM

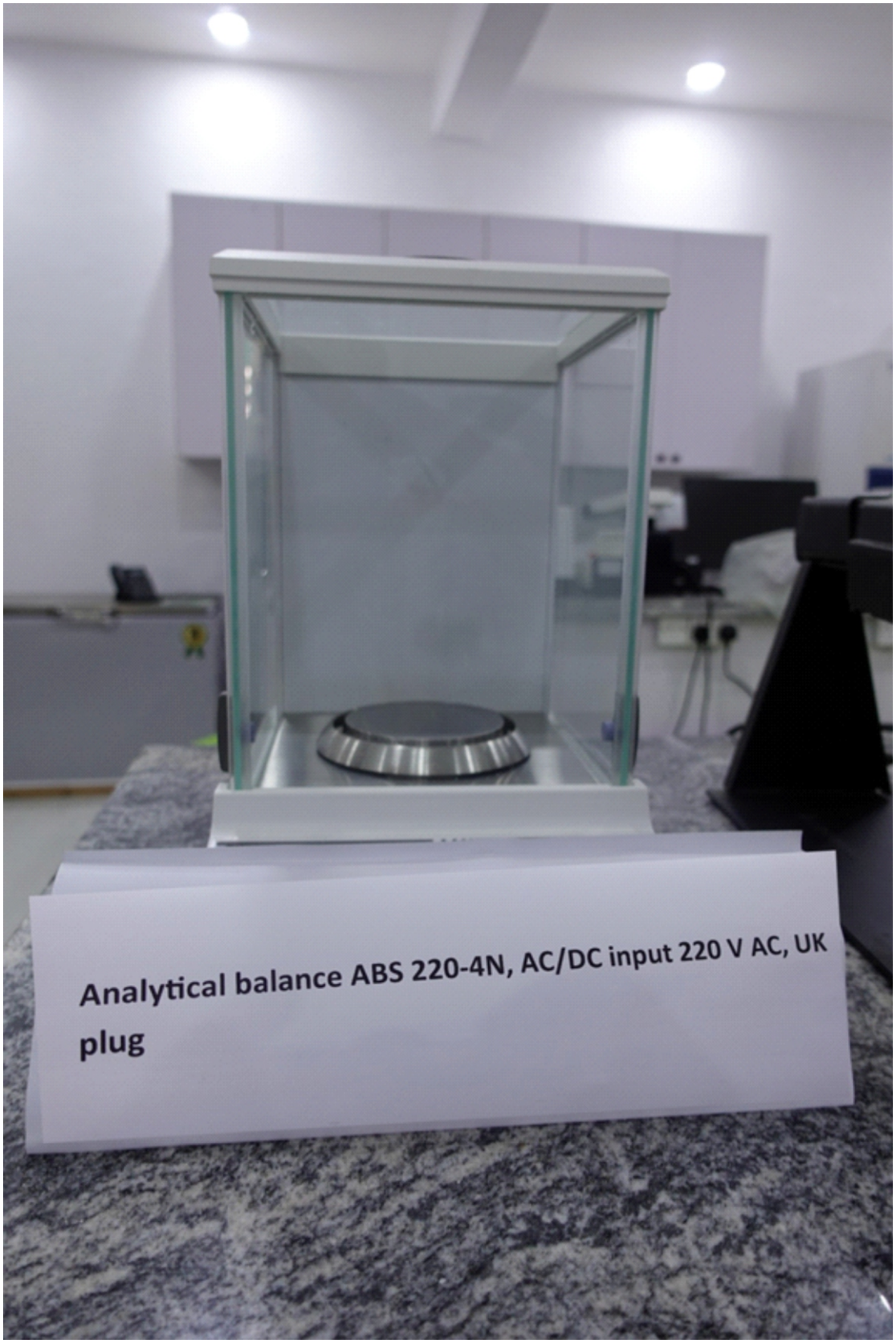

stuart
ORBIT SHAKER


ROTARY MICROTOME

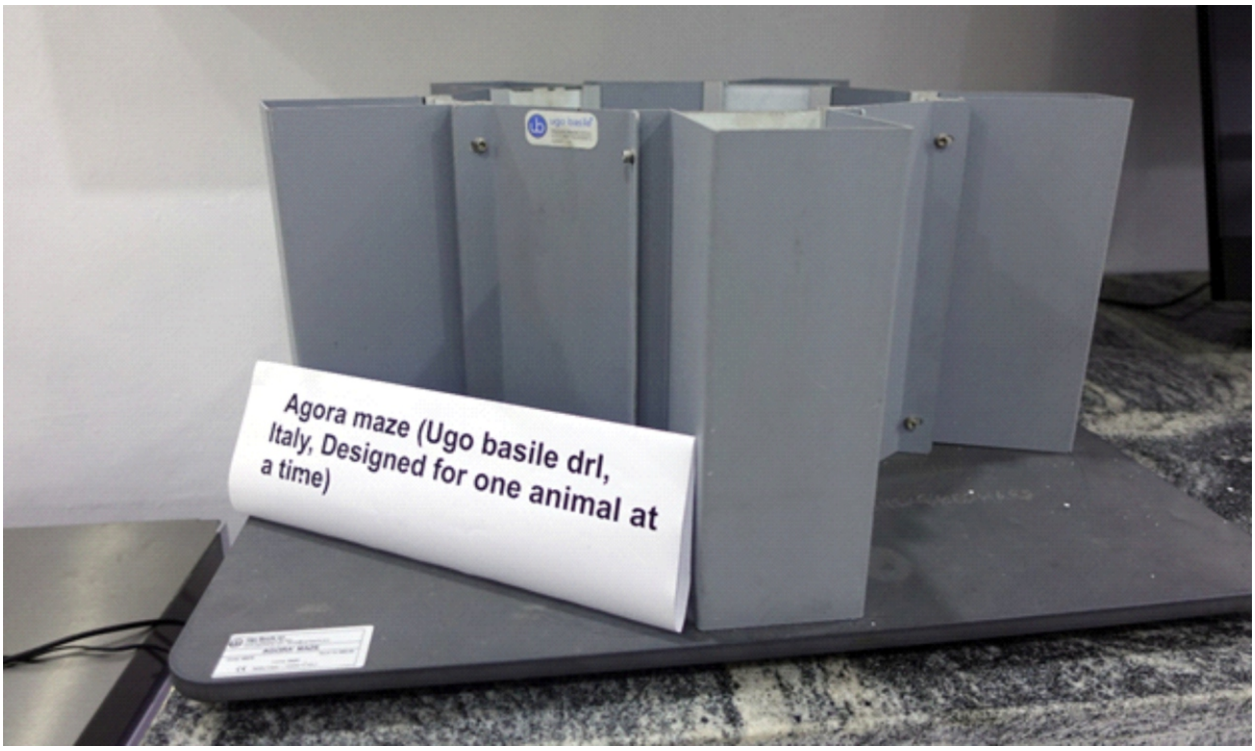

BIOSYSTEM PCR MACHINE

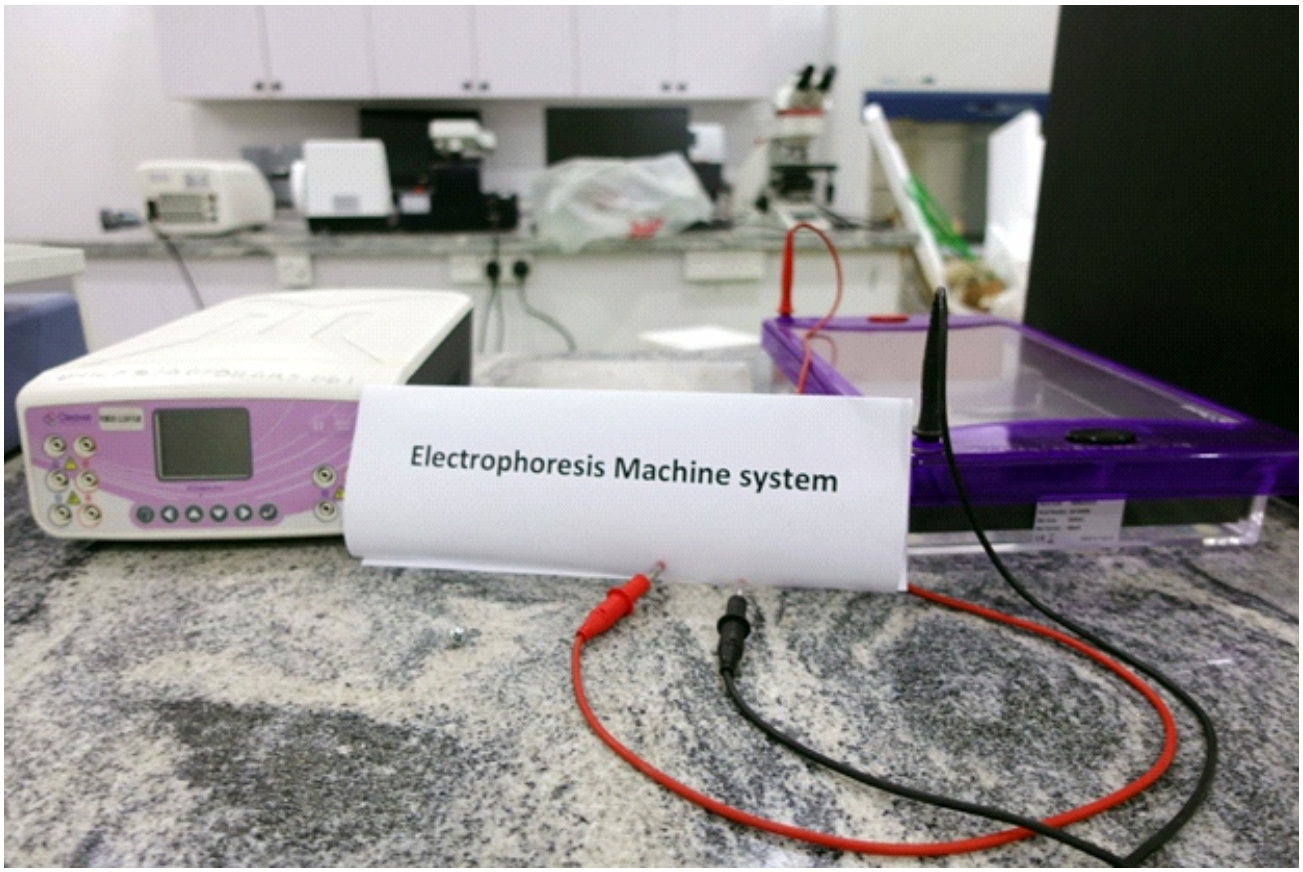

DM4 UPRIGHT MICROTOME


VIBRATOME MICROTOME


Analytical balance ABS 220-4N, AC/DC input 220 V AC, UK
plug


Anymaze software (Stoelting Co, USA; video tracking system for behavioral research)


Agora maze (Ugo basile drl, Italy, Designed for one animal at a time)


Electrophoresis Machine system


Microwave Digestion System
(Multiwave Go Plus 50Hz) for ICP
Analysis for elemental Analysis
Anton Paar
Microwave Digestion System
Multiwave GO Plus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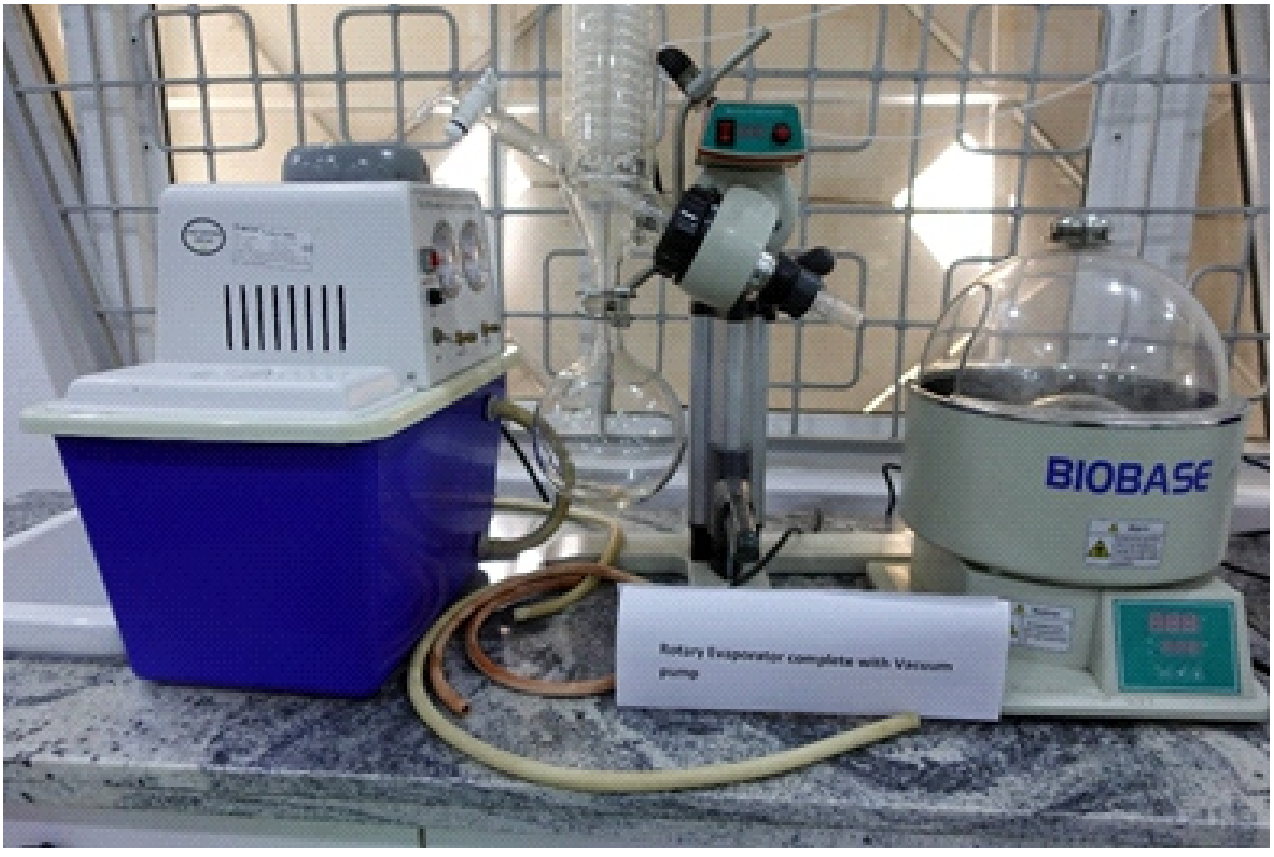
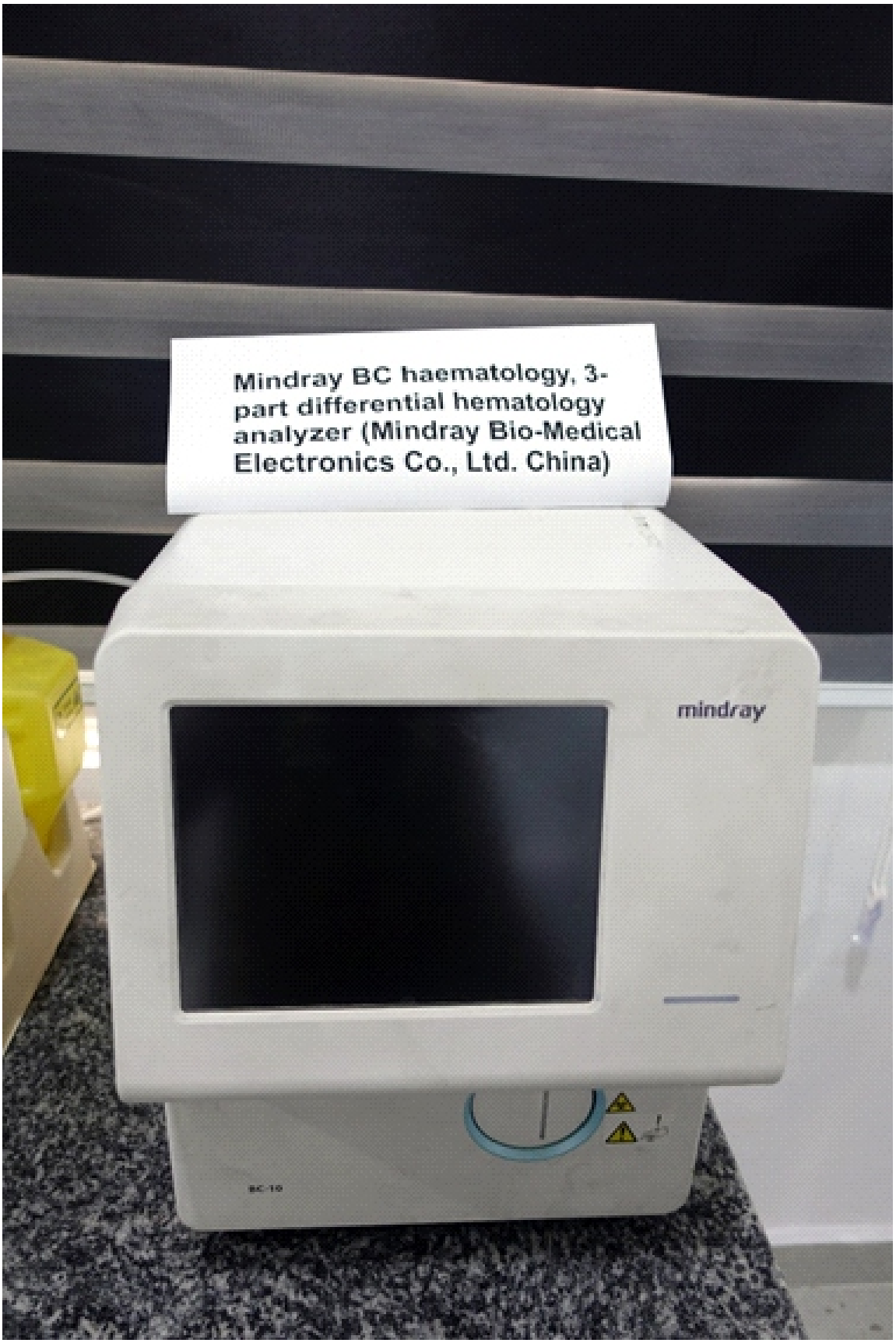
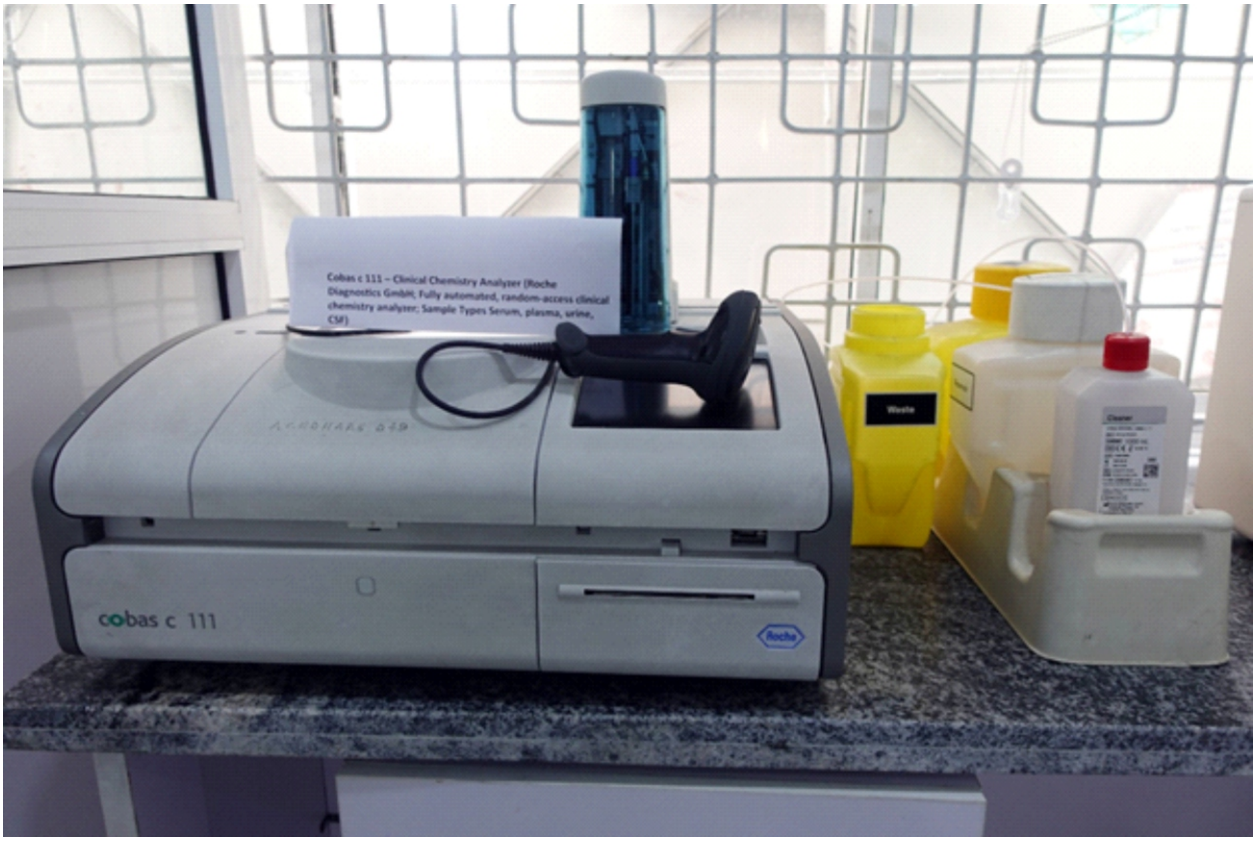
Dissolution Apparatus Tester


BIOBASE


Mindray BC haematology, 3-part differential hematology analyzer (Mindray Bio-Medical Electronics Co., Ltd. China)
mindray


Cobas c 111 – Clinical Chemistry Analyzer (Roche Diagnostics GmbH; Fully automated, random-access clinical chemistry analyzer; Sample Types Serum, plasma, urine, CSF)
cobas c 111
Roche


BIOSYSTEM PCR MACHINE


FREEZE DRYER
Bioevopeak


UNILAG/ACEDHARS
UGO BASILE
BLOOD PRESSURE RECORDER

AHMADU BELLO UNIVERSITY

CENTRE OF EXCELLENCE FOR NEW PEDAGOGIES I N ENGINEERING EDUCATION (ACENPEE)

S/N	Equipment	Location
1	Photochemical Reactor- Brand: Toption Model no: Topt-V	Chemical Engineering Dept., ABU



S/N	Equipment	Location
2	Flow Meter Modbus Partially Filled & Open Channel Flow Meter DOF6000-W Brand name: Lanry Model number: DOF6000-W Accuracy: 1% accuracy	Water Resources and Environmental Engineering Dept., ABU



S/N	Equipment	Location
3	Mini Tensile Testing Machines for Testing Fibre Haida HD-B604-S Tensile Test Machine with accuracy of 0.5% and a resolution of 1/250; designed for various applications, including rubber, plastic, metal, textile, paper, and addition fibric	Mechanical Engineering Dept., ABU

HAIDA INTERNATIONAL

QUOTATION



S/N	Equipment	Location
4	Multifunctional Process Control Teaching System-Brand Name: SSEDU Model No: ZM3208 Weight: 128 kg	Chemical Engineering Dept., ABU



S/N	Equipment	Location
5	NDT Ultrasonic Flaw Detector Testing Machine Touch Screen Ultrasonic Flaw Detector Ndt Equipment Type Non-destructive testing equipments Other attributes customized support OEM, ODM, OBM, Software reengineering place of origin Hebei, China power 36W Voltage 220V	Mechanical Engineering Dept., ABU



S/N	Equipment	Location
6	Gas Absorption Column	Chemical Engineering Dept. ABU

GAS ABSORPTION COLUMN

MTS-909



Specification:

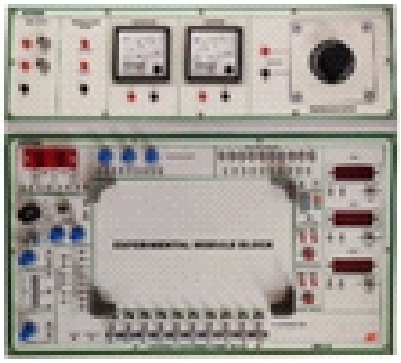
- This apparatus is used to determine the air pressure differential across the column as a function of air flow rate at different water flow rates down the column, and flooding point can be noted. Absorption process of carbon dioxide from air-CO2 mixture into caustic soda solution, is also studied using this system.

S/N	Equipment	Location
7	Power Electronics Trainer Brand Name kitek Model Number KMS-01E	Mechanical Engineering Dept. ABU

Kitek — ELECTRONICS DIDACTIC TRAINER

KMS-01E — ELECTRICAL & ELECTRONICS SYSTEM TRAINER — Make : KITEK

KMS-01E is aesthetically designed injection molded desk Versatile trainer which is capable of performing the role of Linear/Digital IC Trainer, Basic Electronics Trainer, network circuit & theorems trainer, rectifier, filter & regulator trainer, Transistor amplifier circuits trainer, oscillator & wave shaping circuits trainer, linear circuits trainer, electrical bridges trainer, power electronics trainer and digital electronics trainer. Connection tag numbers provided for easy understanding.



Specification

- **Indicators**
  - 10 TTL/CMOS Logic Level Inputs with Dual Color LED for Logic Low & Logic High.
  - 10 output Low level (Green) LEDs & 10 output Hi level (Red) LED's for Logic level Indicators.
- **Clock Generator**
  - Fixed (TTL) of 10MHz.

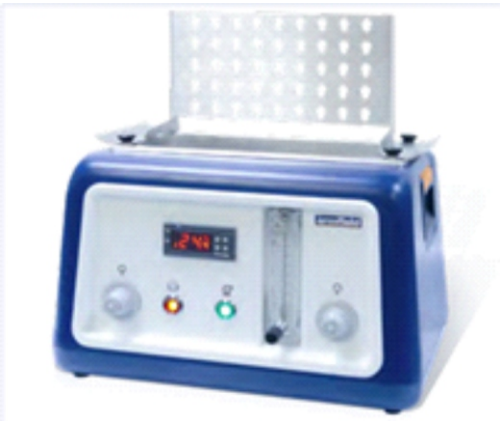
S/N	Equipment	Location
8	Welding Machine Inverter welding machines, Current: 300A	Mechanical Engineering Dept., ABU



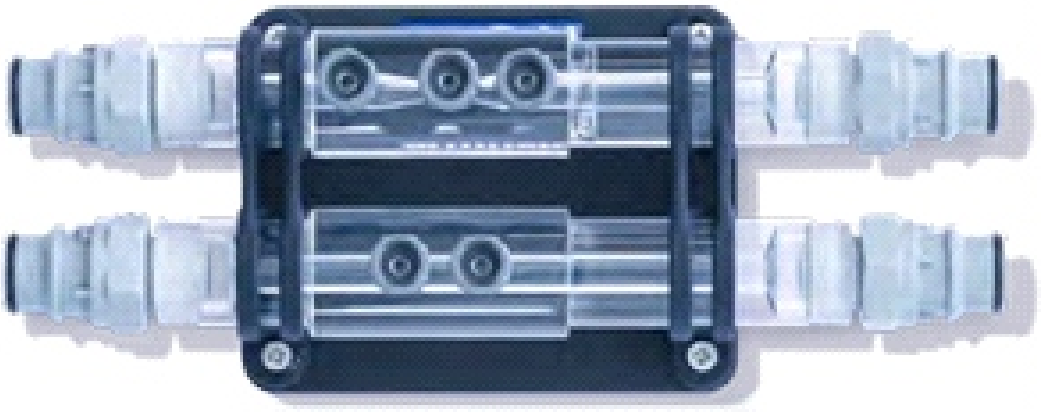
S/N	Equipment	Location
9	Static Cone Penetration Test Apparatus With Vane Shear Test Apparatus force 30kN	Civil Engineering Dept. ABU Zaria



S/N	Equipment	Location
10	Fluid Science Service Unit - FS-SU	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10a	Fluid Science Flow Measurement FS. 1.1	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10b	Energy Losses -Straight Pipes-FS 1.2	ACENPEE Pedagogical Lab



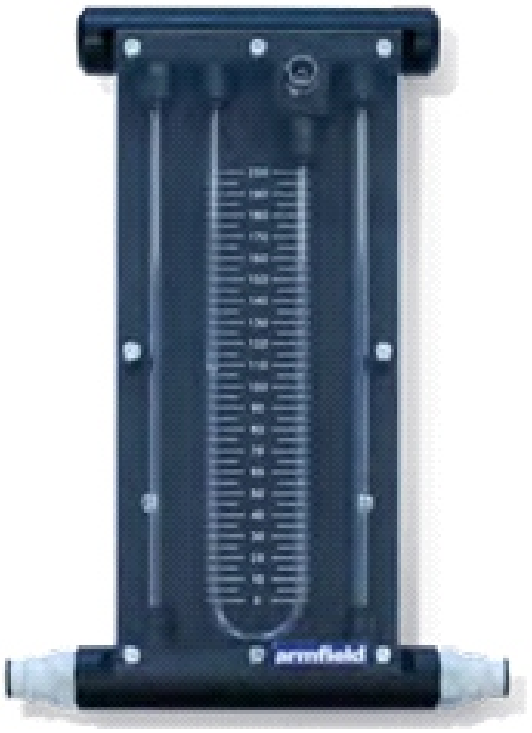
S/N	Equipment	Location
10c	Energy Losses - Bends - FS-1.3	ACENPEE Pedagogical Lab



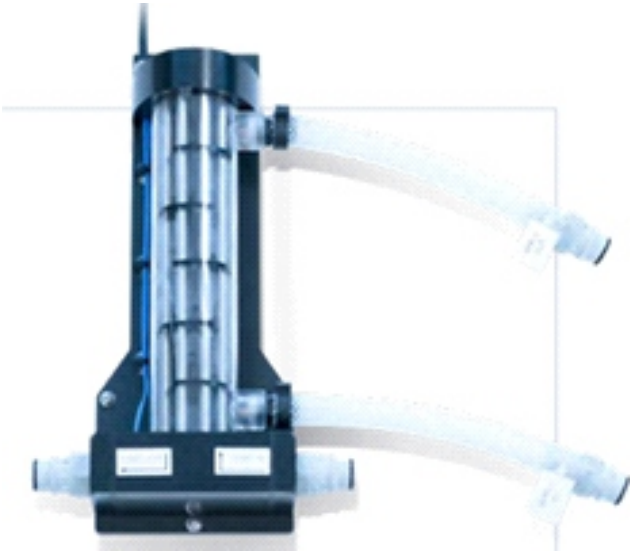
S/N	Equipment	Location
10d	Fluid Science Manometer - Inclined - FS-2.1	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10e	Fluid Science Manometer - U Tube - FS-2.2	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10f	Fluid Science Shell and Tube Heat Exchanger - FS-3.1	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10g	Fluid Science Tubular Heat Exchanger - FS-3.2	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10h	Fluid Science Cross Flow Heat Exchanger FS-3.3	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10i	Fluid Science - Plate Heat Exchanger - FS-3.4	ACENPEE Pedagogical Lab



S/N	Equipment	Location
10j	Fluid Science - Fluidised Bed - FS-4.1	ACENPEE Pedagogical Lab



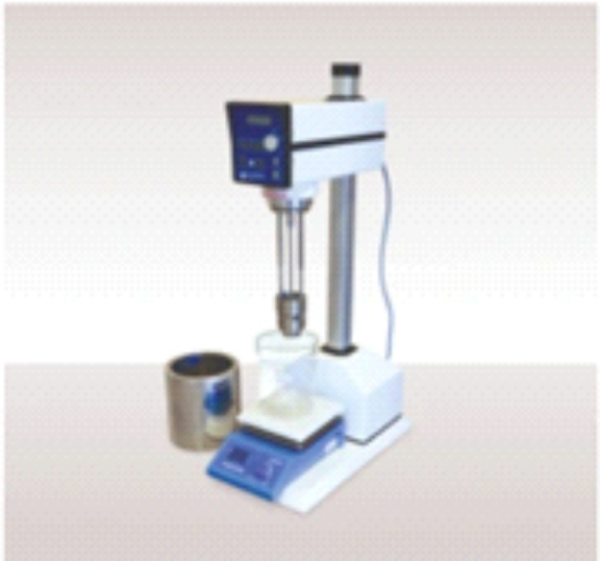
S/N	Equipment	Location
11	Digital Schmidt Rebound Hammer Tester (Two) Brand Name IWIN; Model Number IWIN-HT225; Product Name HT225 Integrated Digital Rebound Hammer; Application Industrial; Function Concrete Test	Civil Engineering Dept., ABU



S/N	Equipment	Location
12	Digital Ultrasonic Pulse Velocity Test Kit:	Civil Engineering Dept., ABU



S/N	Equipment	Location
13	Polymer Modified Bitumen Mixer. Product Code: UTB-1440 Polymer Modified Bitumen Mixer	Civil Engineering Dept., ABU



S/N	Equipment	Location
14	Vacuum Pyknometer (Yale Pycnometer) for Rice Test.	Civil Engineering Dept. ABU Zaria.



S/N	Equipment	Location
15	Differential Scanning Calorimeter-Model:SKZ1052, Brand:	Chemical Engineering Dept. ABU. Zaria.

SKZ1052 Differential Scanning Calorimeter



DSC is designed to determine the inner heat transition relating to temperature and heat flow, it is widely used in the field of polymer development, performance testing & quality control. DSC research and development includes the following field: glass transition temperature, melting point, cold crystallization, crystallization, phase transition, oxidation induction time (OIT).

Standards:
ISO/TR10837:1991, ASTM D3895-1998, ASTM E 967, ASTM E 968, ASTM E 793, ASTM D 3895, ASTM D 3417, ASTM D 3418, ISO 11357-6

S/N	Equipment	Location
16	30 liters laboratory Oven	ACENPEE Pedagogical Lab



S/N	Equipment	Location
16	Ender 3 S1 PRO Creality 3D Printer	



S/N	Equipment	Location
18	1 set of 50-liter air compressor	ACENPEE Pedagogical Lab



S/N	Equipment	Location
19	1 pc of 40 kg digital Scale	ACENPEE Pedagogical Lab



S/N	Equipment	Location
20	1 pc of 50-meter x 2.5mm extension cable	ACENPEE Pedagogical Lab



S/N	Equipment	Location
21	1 pc of battery Analyzer 12/24V	ACENPEE Pedagogical Lab



S/N	Equipment	Location
22	1 pc of 250 Amp Battery Charger	ACENPEE Pedagogical Lab



S/N	Equipment	Location
23	1 pc Mastech AC/DC clamp meter	ACENPEE Pedagogical Lab



S/N	Equipment	Location
24	1 set of 499 pcs tools set	ACENPEE Pedagogical Lab



S/N	Equipment	Location
25	1 pc 12V Tire inflator	ACENPEE Pedagogical Lab



S/N	Equipment	Location
26	1 pc Digital Multimeter - Dt9205a + Bundle	ACENPEE Pedagogical Lab



S/N	Equipment	Location
27	Desiccator	ACENPEE Pedagogical Lab



S/N	Equipment	Location
28	Magnetic stirrer	ACENPEE Pedagogical Lab



S/N	Equipment	Location
29	Microscope	ACENPEE Pedagogical Lab



S/N	Equipment	Location
30	Concrete slump cone testing apparatus with tamping rod Model No: SM-HS	ACENPEE Pedagogical Lab



S/N	Equipment	Location
31	Digital Moisture meter	ACENPEE Pedagogical Lab



S/N	Equipment	Location
32	Schmidt Rebound Hammer	ACENPEE Pedagogical Lab



S/N	Equipment	Location
33	Concrete test cube moulds	ACENPEE Pedagogical Lab



S/N	Equipment	Location
34	Laboratory Dial Gauges (5 nos)	ACENPEE Pedagogical Lab



S/N	Equipment	Location
35	Digital pH meter	ACENPEE Pedagogical Lab



S/N	Equipment	Location
36	Tabletop Turbidity Meter (M100+ Laboratory turbidimeter	ACENPEE Pedagogical Lab



S/N	Equipment	Location
37	1 pcs Bosean 8 in 1 Air Quality Detect (product code 6476884)	ACENPEE Pedagogical Lab



S/N	Equipment	Location
38	1 set of Air riveter	ACENPEE Pedagogical Lab



S/N	Equipment	Location
39	1 pc of 16 mm Rich power drill machine	ACENPEE Pedagogical Lab



S/N	Equipment	Location
40	Electronic Circuit	ACENPEE Pedagogical Lab



S/N	Equipment	Location
41	Parallel Circuit board	ACENPEE Pedagogical Lab



S/N	Equipment	Location
42	Steam Engine model	ACENPEE Pedagogical Lab



S/N	Equipment	Location
43	Planks constant law setup	ACENPEE Pedagogical Lab



UNIVERSITY OF NIGERIA, NSUKKA
CENTRE OF EXCELLENCE FOR SUSTAINABLE POWER AND ENERGY DEVELOPMENT (ACE-SPED)

Axia ChemiSEM Scanning Electron Microscope(SEM) LoVac with Back Scattered Electron Detector(BSED) which enables microstructure to be analysed, visualised and quantified.



Application

The powerful combination of SEM and EDS is widely used in a variety of sectors. Industries that regularly rely on SEM analysis laboratories include: Quality control, failure analysis, Nanowires for gas sensing, Semiconductor inspection, Microchip assembly, analysis of gunshot residue , jewellery examination , bullet marking comparison handwriting and print analysis , examination of banknote authenticity., paint particle and fibre analysis filament bulb analysis in traffic incidents, batteries, construction, production, measuring the effect of climate change of species. identifying new bacteria and virulent strains, soil quality measurement for farming and agriculture, comparing tissue samples between patients in a control and test group testing samples over the lifespan of a patient, geology automotive supplies, plastics manufacturing, pharmaceuticals, and electronics manufacturing, to name a few.

Location
Advanced materials Characterization Laboratory of ACE-SPED Core building

Thermo Scientific ARL QUANT'X EDXRF Spectrometer is a benchtop instrument that enables users to get compositional data on virtually any sample in minutes.



Application

Used for rapid, non-destructive elemental analysis of various materials. It is commonly employed in central and contract laboratories, academic institutions, and various industries for tasks like environmental monitoring, RoHS and WEEE screening, and analysis in the chemicals, mining, forensics, food, cement, and metals sectors

Location

Advanced materials Characterization Laboratory of ACE-SPED Core building

Nicolet™ iS50 FTIR Spectrometer



Application

The Nicolet iS50 FT-IR spectrometer is a versatile instrument used for a wide range of applications, particularly in materials analysis and forensics. It's known for its modular design, allowing for easy switching between different techniques like ATR-FTIR and Raman spectroscopy, and its ability to analyze various sample types including solids, liquids, and gases

Location

Advanced materials Characterization Laboratory of ACE-SPED Core building

FIENES Lab equipment UNN and their typical uses and functions to the lab, university community, and external customers.

1. Prusa FDM 3D Printer

a. Description:

The Prusa FDM (Fused Deposition Modeling) 3D printer is a high-precision desktop additive manufacturing machine that uses thermoplastic filaments (like PLA, ABS, PETG) to build objects layer-by-layer.

b. Functions & Uses:

i. Rapid prototyping of electronic casings, mechanical parts, enclosures, and models
ii. Educational demonstrations of CAD-to-fabrication workflow
iii. Small-scale production of tools, fixtures, and research components

c. Services to Render:

i. Custom part fabrication for engineering students/projects
ii. Manufacturing of low-cost lab tools and equipment enclosures
iii. Commercial 3D printing services for external industries or hobbyists

2. GenmitsuPROVerXL 4030 CNC Router

a. Description:

A desktop CNC (Computer Numerical Control) router used for precision machining of copper-epoxy cladding, wood, plastic, foam, and soft metals based on G-code input.

b. Functions & Uses:

i. Subtractive fabrication of PCB prototypes, chassis, and molds
ii. Educational CNC programming and mechatronics learning
iii. Creation of precision parts for robotics or hardware integration

c. Services to Render:

i. PCB milling for academic projects or external tech startups
ii. Custom signage, panel cutting, or engraving for university branding
iii. Fabrication services for SMEs in mechanical prototyping

3. Signal Generator

a. Description:

An electronic device that produces electrical signals (waveforms like sine, square, triangle) over a range of frequencies.

b. Functions & Uses:

i. Stimulating circuits during testing and measurement
ii. Testing filters, amplifiers, and communication systems
iii. Educational demonstrations in analog and digital electronics

c. Services to Render:

i. Circuit design testing for academic labs
ii. Equipment calibration for departments (Engineering, Physics, Etc.)
iii. Consulting/testing services for local electronics developers

4. Two-Channel and Four Oscilloscope

a. Description:

An electronic instrument that displays and analyzes the waveform of signal (s) (simultaneously) over time.

b. Functions & Uses:

i. Monitoring dynamic and static analog/digital signals
ii. Debugging circuits and embedded systems
iii. Educational labs for signal theory and waveform analysis
iv.

c. Services to Render:

i. Support for undergraduate electronics labs
ii. Troubleshooting student and faculty-designed circuits
iii. Diagnostic services for external device testing

5. Digital Multimeter (DMM)

a. Description:

A versatile hand-held device used to measure voltage, current, resistance, and other electrical parameters.

b. Functions & Uses:

i. Troubleshooting electrical/electronic circuits
ii. Measuring battery voltage, continuity checks, etc.
iii. General-purpose electronic lab diagnostics

c. Services to Render:

i. Lab instrumentation for students

ii. Quick check services for university maintenance teams
iii. Basic diagnostics for community electronics (fans, inverters, etc.)

6. **Standard Precision Tool Kit Sets**
   a. **Description:**
   A set of hand tools including screwdrivers, pliers, tweezers, precision cutters, etc., tools used for electronics assembly and repair.

   b. **Functions & Uses:**
      i. Assembly and repair of circuit boards or devices
      ii. Handling small components in mechatronics projects
      iii. Educational training in hardware fabrication

   c. **Services to Render:**
      i. Training workshops for students on device assembly
      ii. Repair services for university-owned equipment
      iii. Electronics repair services for local community/small businesses

7. **Rework Station**
   a. **Description:**
   A tool used for desoldering and resoldering surface-mounted devices (SMDs), combining hot air gun, soldering iron, and temperature control.

   b. **Functions & Uses:**
      i. Repair and modification of PCBs and embedded systems
      ii. Prototyping with SMD components
      iii. Precision soldering under controlled heat

   c. **Services to Render:**
      i. SMD component replacement and board repairs for labs
      ii. Reworking faulty boards for other departments
      iii. Circuit repair services for SMEs or individual customers

8. **Desktop Computer**
   a. **Description:**
   A workstation used for simulation, CAD design, software development, and embedded programming.

b. Functions & Uses:

i. Running software like MATLAB, KiCad, SolidWorks, Fusion 360

ii. Programming microcontrollers, simulation of circuits and control systems

iii. Serving as controller interface for CNC and 3D printing machines

c. Services to Render:

i. Design services (PCB layout, mechanical parts) for research and commercial use

ii. Simulation-based consulting (e.g., FEA, power analysis)

iii. Student training using lab computing resources

9. CNC Laser Engraver

a. Description:

A CNC laser engraver is a precision machine that uses high-intensity laser beam to engrave, or etch materials like wood, acrylic, leather, glass, fabric, plastic, and select metals. Controlled by computer-generated vector paths (G-code), it enables accurate and repeatable operations on flat surfaces.

b. Functions & Uses:

i. Engraving & Etching: Logos, labels, QR codes, serial numbers, and intricate artwork on wood, acrylic, leather, or anodized aluminum.

ii. Prototyping & Custom Fabrication: Custom parts, panel templates, decorative finishes for devices, personalized items, or educational models.

iii. PCB Marking: Non-contact labeling or marking of printed circuit boards for research or production identification.

c. Services to Render:

i. Precision engraving for prototypes, project enclosures, instrumentation panels for lab users

ii. Fabrication of departmental signage, awards, plaques, branding materials; support for design, art, or engineering students

iii. Commercial engraving and light cutting for local artisans, SMEs, or entrepreneurs (e.g., customized gifts, branded tokens, nameplates)

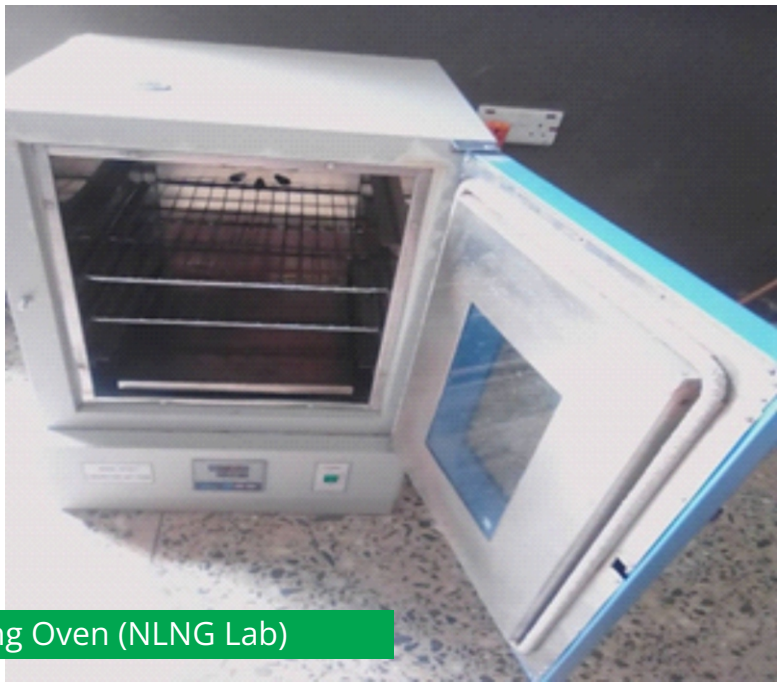
Some list of our equipment usage and their pictures



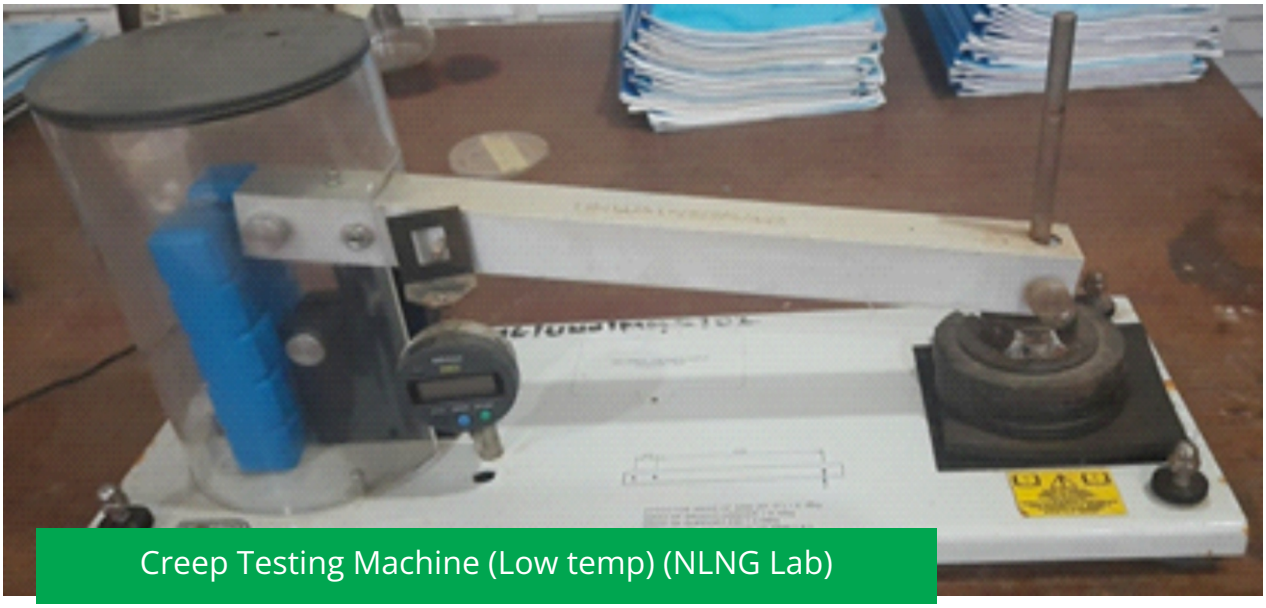
Universal Testing Machine (NLNG Lab)



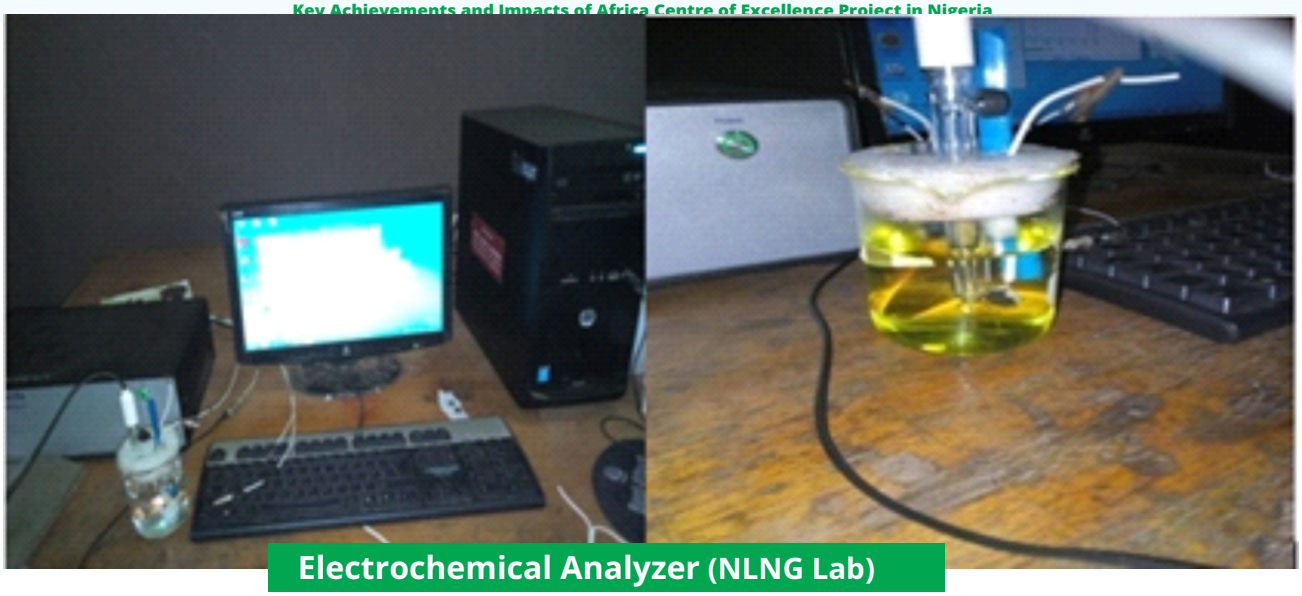
Inverted Metallurgical Microscope (NLNG Lab)



Drying Oven (NLNG Lab)



Creep Testing Machine (Low temp) (NLNG Lab)



Electrochemical Analyzer (NLNG Lab)



Weighing balance (NLNG Lab)



Weighing balance (NLNG Lab)



Water bath (NLNG Lab)



Plasma cutter and welding machine (NLNG Lab)



Heat treatment furnace (NLNG Lab)



Heat treatment furnace (NLNG Lab)



Rotary furnace (NLNG Lab)



Welding machine (NLNG Lab)



Charcoal fired furnace (NLNG Lab)





Ball milling machine (NLNG Lab)



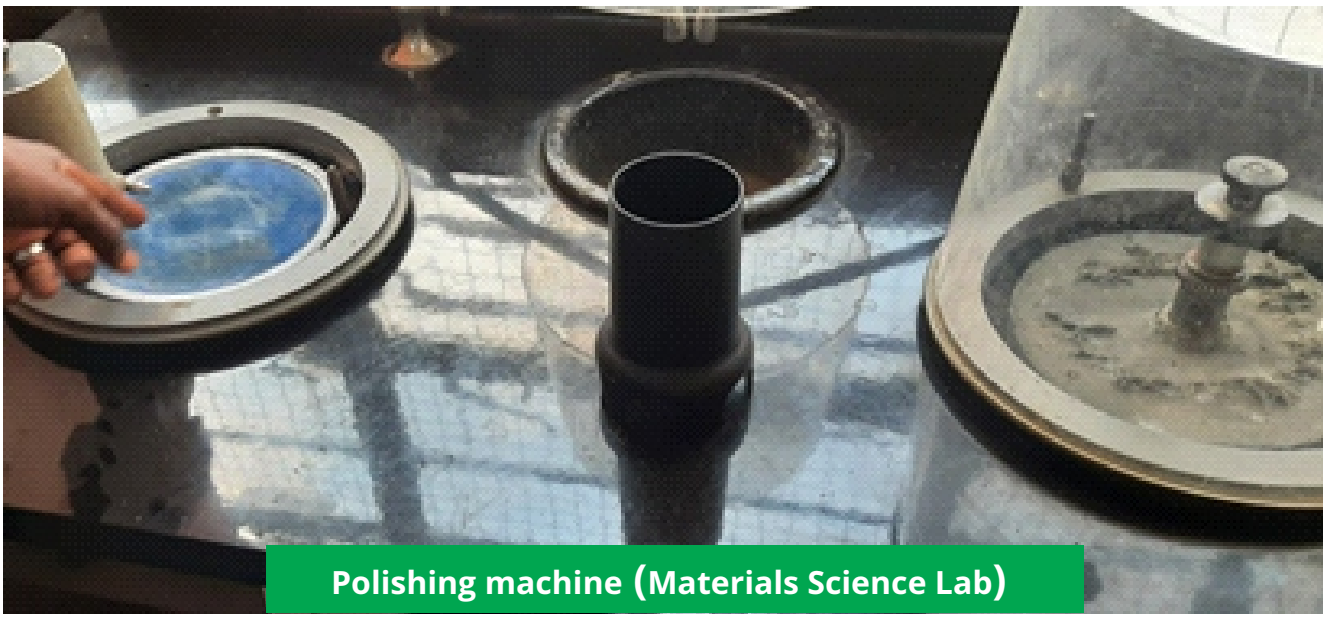
Crucible Furnace (Foundry **Lab**)



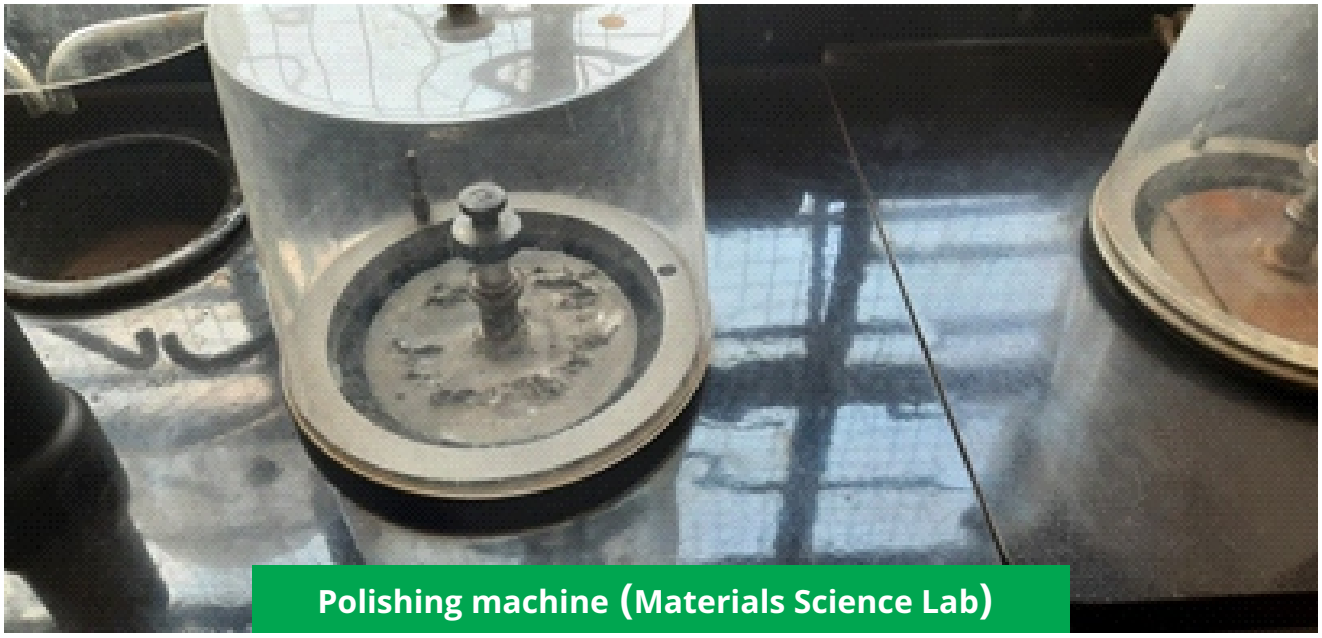
Rockwell hardness testing machine (Foundry Lab)



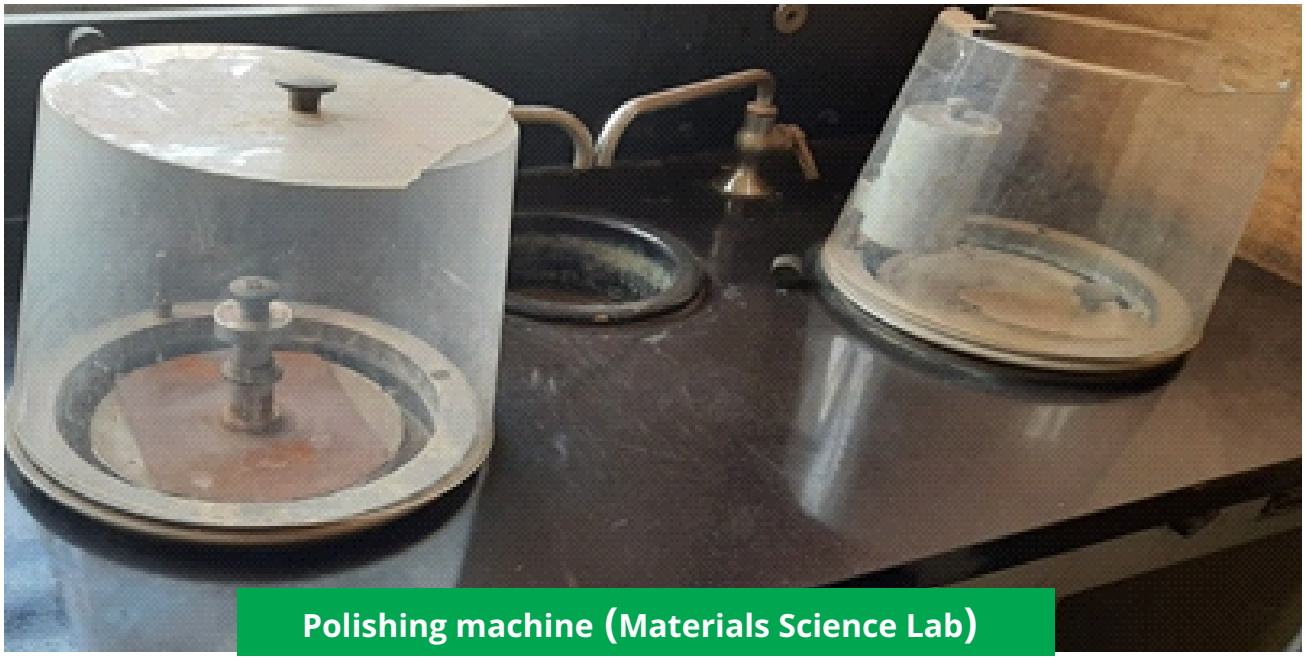
Polishing machine (Materials Science Lab)



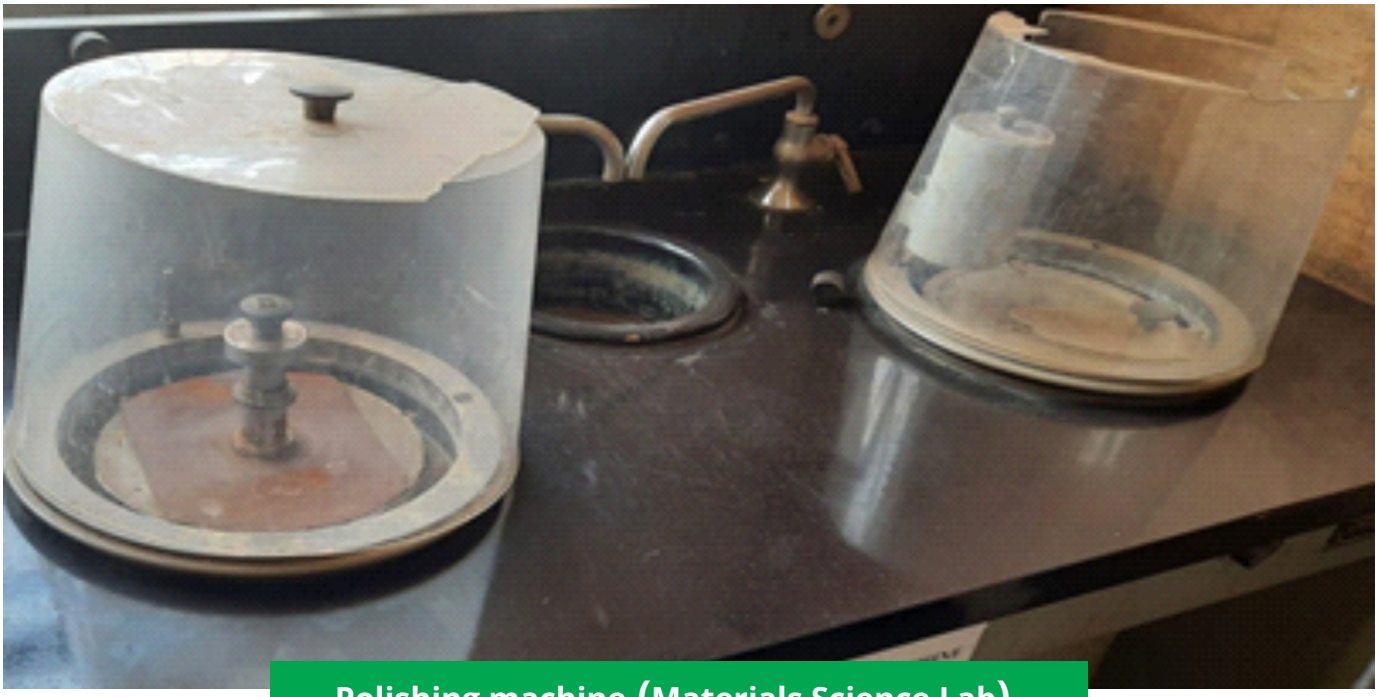
Polishing machine (Materials Science Lab)



Polishing machine (Materials Science Lab)



Polishing machine (Materials Science Lab)



Polishing machine (Materials Science Lab)



Mounting press (Materials Science Lab)



Impact testing machine (Materials Science Lab)



Optical Emission Spectrometer (Materials Science Lab)

FEDERAL UNIVESITY OF TECHNOLOGY OWERRI

CENTRE OF EXCELLENCE IN FUTURE ENERGIES AND ELECTRO CHEMICAL SYSTEMS (ACE-FUELS)



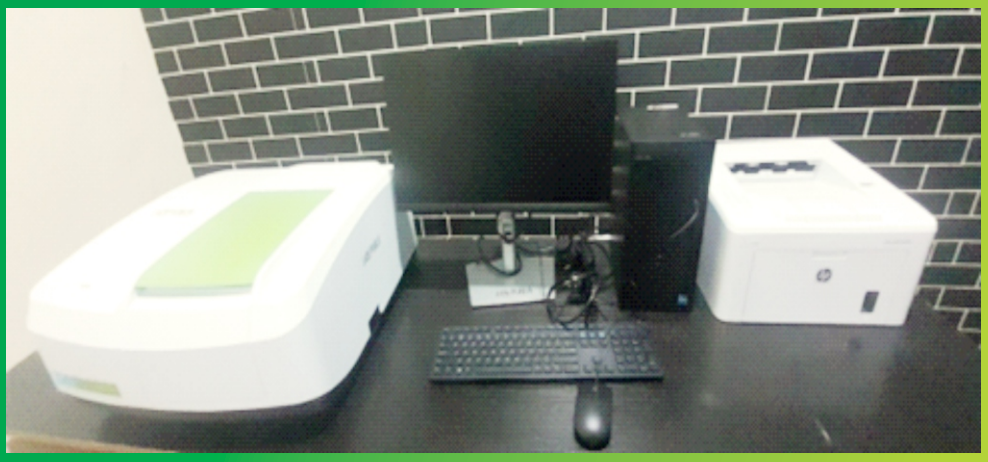
1. Shimadzu gas chromatograph with mass spec GC-MS-TQ8040



2. Angstrom gas chromatograph with flame ionization detector 8000 GC (FID)



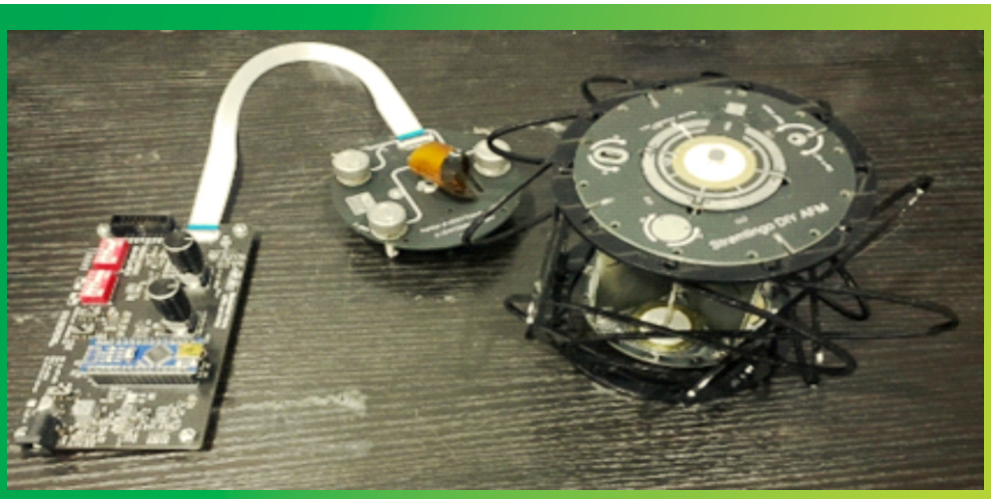
FT-IR Spectrometer Spectrum 2



4 UV/Visible Spectrometer LAMBDA 365 Perkin Elmer



5 nGuage Atomic Force Microscope (AFM) - by ICSPI



6 Do-it-Yourself Atomic Force Microscope - by Stromlinet Nano



7 LUMOS II FT-IR Microscope by Brucker



8 EZStat Pro Potentiostat /Galvanostat by Nuvant



9 SP-200 Potentiostat/Galvanostat (BioLogic)



10 Planetary Ball Mill



11 Thermostatic water bath with shaker



12 Thermostatic water bath



13 Precision lapping/polishing machines



14 Hot air oven



15 Digital muffle furnace



16 Fume Cupboard



17 Incubator



18 Gasometric Assembly



19 Digital Weighing balance



20 Tubular Stirred tank reactor



21 Glove box (Nitrogen Env)



22 Glove box (Argon Env)



23 Centrifuge



24 pH Meter



25 Digital Conductivity meter



26 Water De-Ionizer Unit





27 Magneric Stirrers



28 DC Power Supply



29 Refrigerator

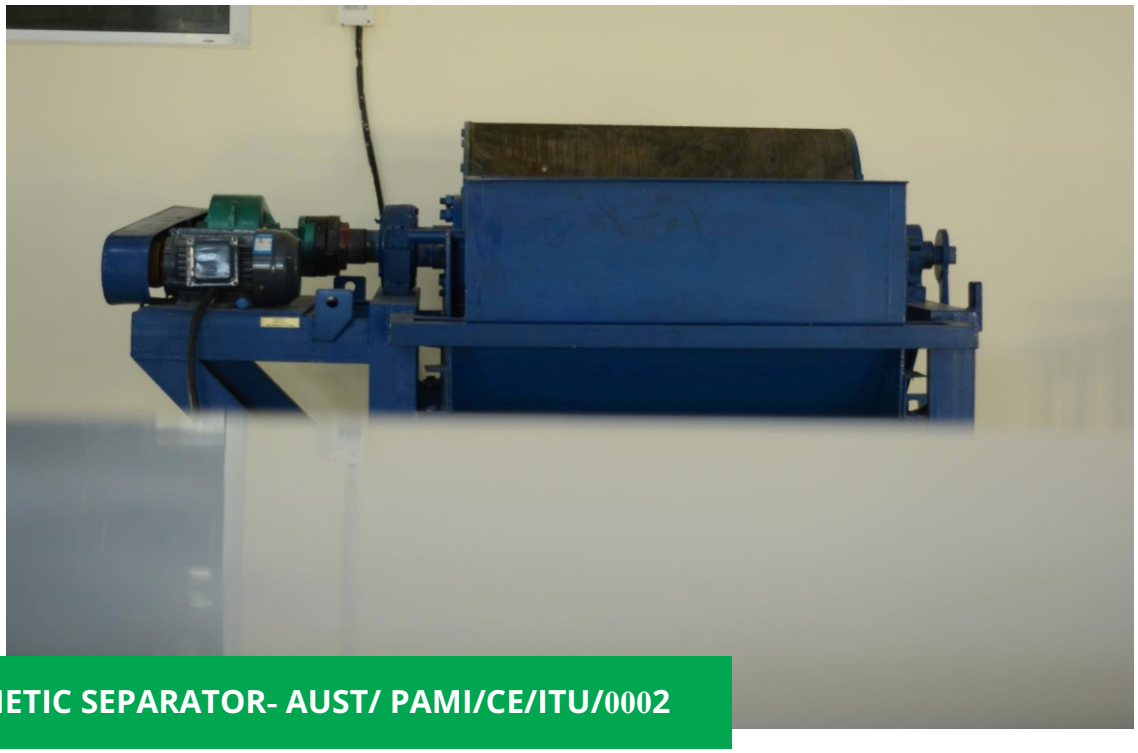


30 Colony Counter

AFRICA UNIVERSITY OF SCIENCE AND TECHNOLOGY, ABUJA PAN AFRICAN MATERIALS INSTITUTE(PAMI)



BREAKING JAW CRUSHER- AUST/PAMI/CE/ITU/0001



MAGNETIC SEPARATOR- AUST/ PAMI/CE/ITU/0002



GOLD SHAKING TABLE- AUST/PAMI/CE/ITU/0003



PUNCHING FACILITY- AUST/PAMI/OE/PMS/0003



SHAKING TABLE-AUST/PAMI/CE/ITU/0004



ELECTRIC OVEN- AUST/PAMI/CE/ITU/0005



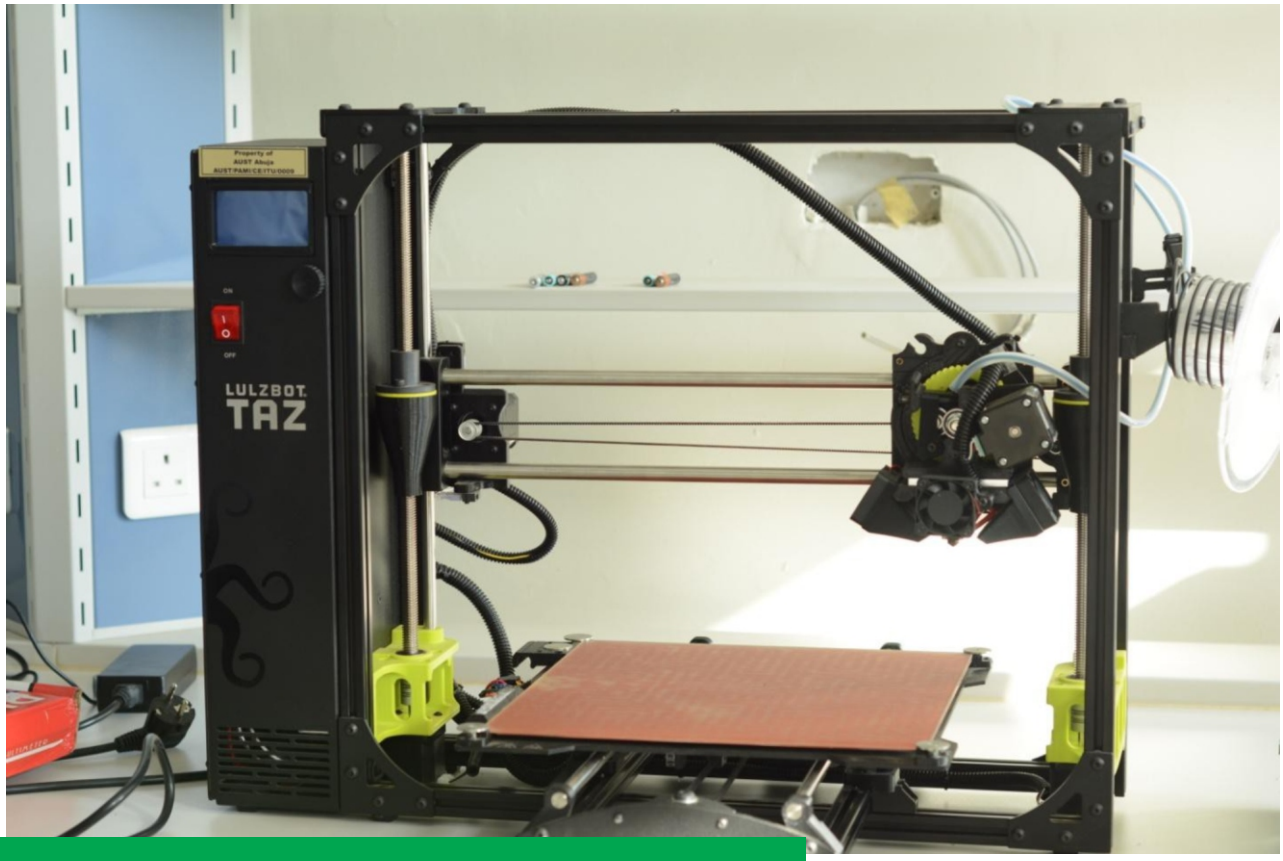
MRI MACHINE- AUST/PAMI/CE/ITU/0006



XRD MACHINE-AUST/PAMI/CE/ITU/0007



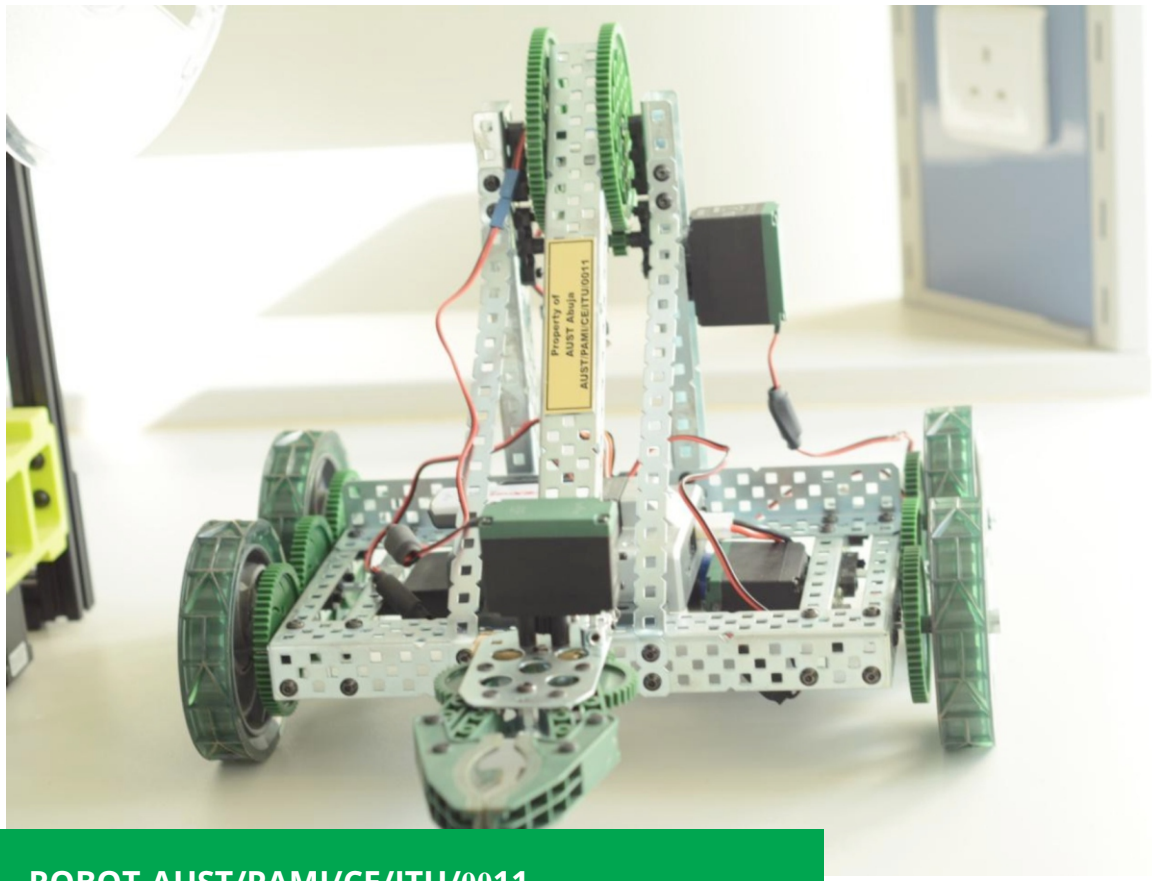
VACUUM DE-WETTING UNIT-AUST/PAMI/CE/ITU/0008



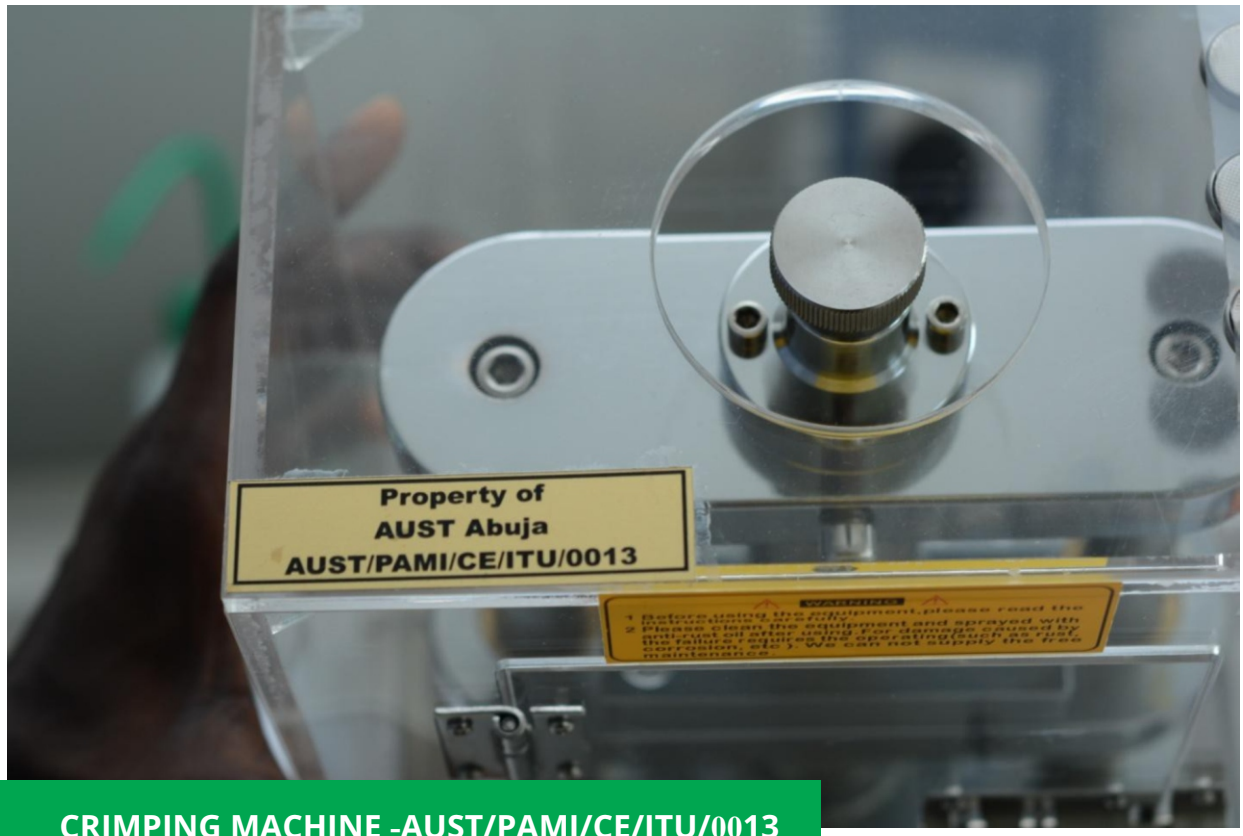
3D PRINTER-AUST/PAMI/CE/ITU/0009



SIEVING MACHINE-AUST/PAMI/CE/ITU/0010



ROBOT-AUST/PAMI/CE/ITU/0011



CRIMPING MACHINE -AUST/PAMI/CE/ITU/0013





AFRICA CENTRE OF EXCELLENCE IN PHYTOMEDICINE RESEARCH AND DEVELOPMENT (ACEPRD)

S/N	ITEM	QTY
1.	UV/VI SPECTROPHOMETER	3
2.	GAS CHROMATOGRAPHY	2
3.	MASS SPECTROSCOPY	1
4.	MACRO ELEMENTAL ANALIZER	1
5.	STEREO MICROSCOPE	1
6.	ULTRASONIC BATH	1
7.	SPECTROPHOTOMETER	1
8.	GAS CYLINDER WITH FLOW REGULATOR	1
9.	WATER BATH	1
10.	HEATING APPANATUS	1
11.	MICROWAVE OVEN	1
12.	PURGE INTERFEROMETER DETECTOR	1
13.	MILI Q SYSTEM	1
14.	DIGITAL MELTING/BOILING POINT APPARATUS	1
15.	MICROPLATE READER	1
16.	VENT FILTER TANK	1
17.	ELECTROPHORESIS MACHINE (JY 300)	1
18.	DISSECTING MICROSCOPE	1
19.	MINI INCUBATOR	1
20.	DIGITAL PH METER	1
21.	SIMPLIAAMP TIMER	1
22.	CENTTRIFUGE	1
23.	DRY BATH	1
24.	BIOSAFETY CABINATE	1
25.	GENOME LAB GEXP	1
26.	MICROSCOPE YS-T	1
27.	MICROSCOPE 13395H2X	1
28.	AUTOCLAVE	1
29.	OVEN 9052A	1
30.	INCUBATOR WITH SHAKER	1
31.	WORKING HOOD	1
32.	INCUBATOR MINI SHAKER	1
33.	SOXHLET EXTRACTOR	1
34.	ANALYTICAL BALANCE MB-200	1
35.	ALLEGRA X-15R CENTRIFUGE	1

36.	ELECTRIC THERMOSTATIC INCUBATOR	1
37.	ROTARY EVAPORATOR RE-52A	1
38.	CENTRIFUGE 5424R	2
39.	FREEZE DRYER	1
40.	PICK UP VEHICLE (TOYOTA HILUX)	1
41.	60KVA GENERATOR	2
42.	HAIER BIOMEDICAL ULTRA LOW TEMPERATURE FREEZER (-8°C)	1
43.	PROJECTOR/BEAMERS	3
44.	COMPUTERS (DESKTOP)	40
45.	CESI 8000 PLUS	2
46.	ANALYTIK JANA	1
47.	GCMS	2
48.	FTIR	1
49.	NMR	1

AFRICA CENTRE OF EXCELLENCE IN AGRICULTURAL DEVELOPMENT AND SUSTAINABLE ENVIRONMENT (CEADESE)

Federal University of Agriculture, Abeokuta

S/N	Equipment	Model	Quantity	Status
1	Digital CP 40 II Cone Penetrometer (with 4 cones)	Rimik Electronics	1	Functioning



S/N	Equipment	Model	Quantity	Status
2	Hydrometer	HUMBOLD H-4263A	2	Functioning



S/N	Equipment	Model	Quantity	Status
3	Protimeter Speedy	MERLIN LAZER	1	Functioning



S/N	Equipment	Model	Quantity	Status
4	Computer Assisted Semen Analyzer (CASA)	Model Palmary PL 6800T	1	Functioning



S/N	Equipment	Model	Quantity	Status
5	Laboratory Mill Rotor (With 2 Rotary Sieves)	Retsch ZM-200	1	Functioning



S/N	Equipment	Model	Quantity	Status
6	Texture Analyser TA - XT Plus with PC	Stable Micro Systems	1	Functioning



S/N	Equipment	Model	Quantity	Status
7	Mincing Machine (Stainless Steel)	LINKRICH	1	Functioning



S/N	Equipment	Model	Quantity	Status
7	Mincing Machine (Stainless Steel)	LINKRICH	1	Functioning



S/N	Equipment	Model	Quantity	Status
8	Chroma Meter Minolta CR-300 Japan,	Konica Minolta	1	Functioning



S/N	Equipment	Model	Quantity	Status
9	Laboratory Hot Air Oven	DHG - 9030A	1	Functioning



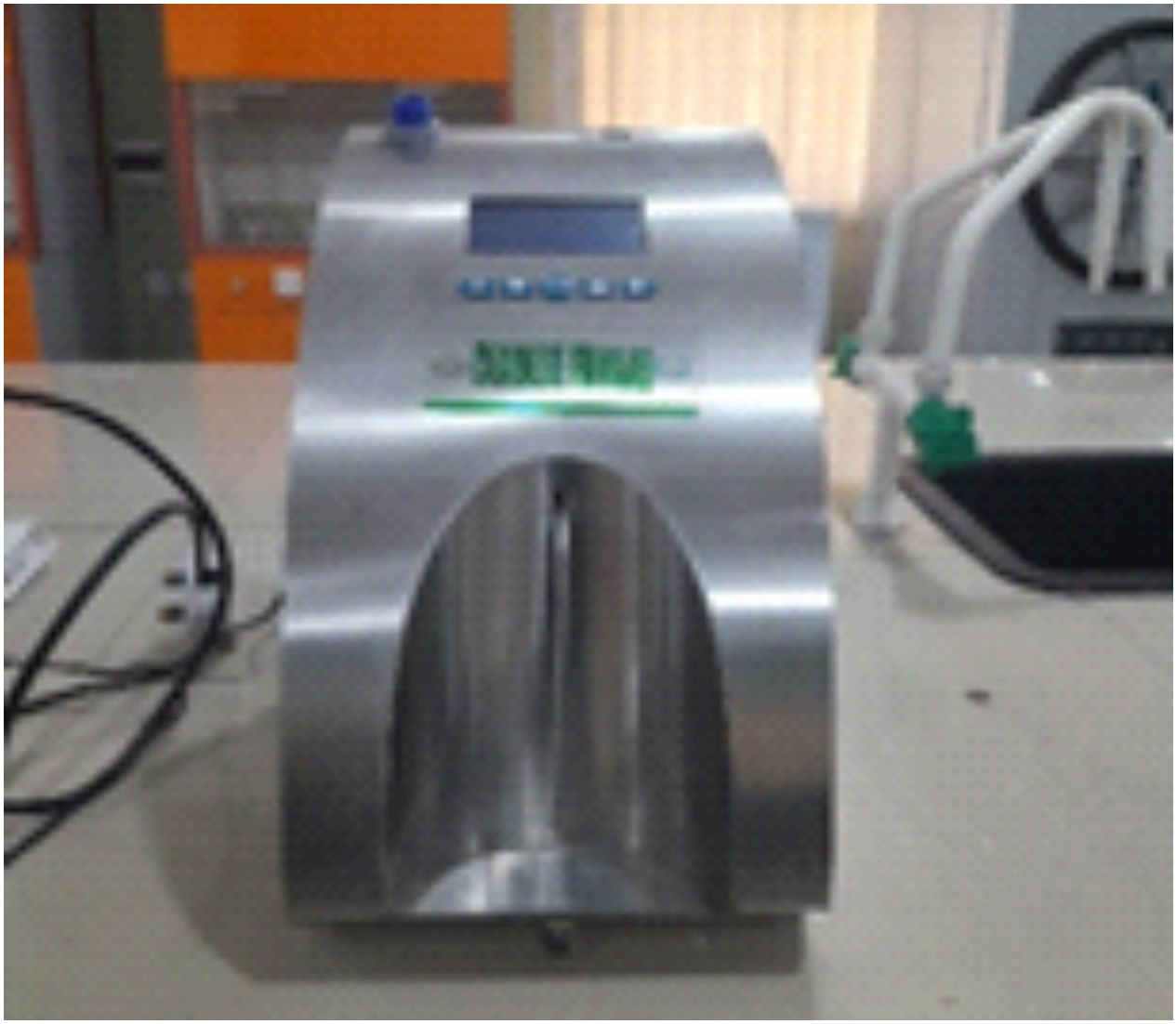
S/N	Equipment	Model	Quantity	Status
10	Electric Grill	PANINI	1	Functioning



S/N	Equipment	Model	Quantity	Status
11	Electric Smoker with Window	LINKRICH	1	Functioning



S/N	Equipment	Model	Quantity	Status
12	Lactoscan (Milk Analyzer)	Milktronic Ltd	1	Faulty



S/N	Equipment	Model	Quantity	Status
13	Digital Viscometer Brookfield - with 4 Spindles	Model DV-II	1	Functioning



S/N	Equipment	Model	Quantity	Status
14	Chlorophyll Meter	SPAD 502 PLUS	1	Functioning



S/N	Equipment	Model	Quantity	Status
15	Seed Germinator model	A1000 (CONVIRON CMP 6010	1	Functioning



S/N	Equipment	Model	Quantity	Status
16	Growth Chambers	SGC120 (FITOTRON)	1	Functioning



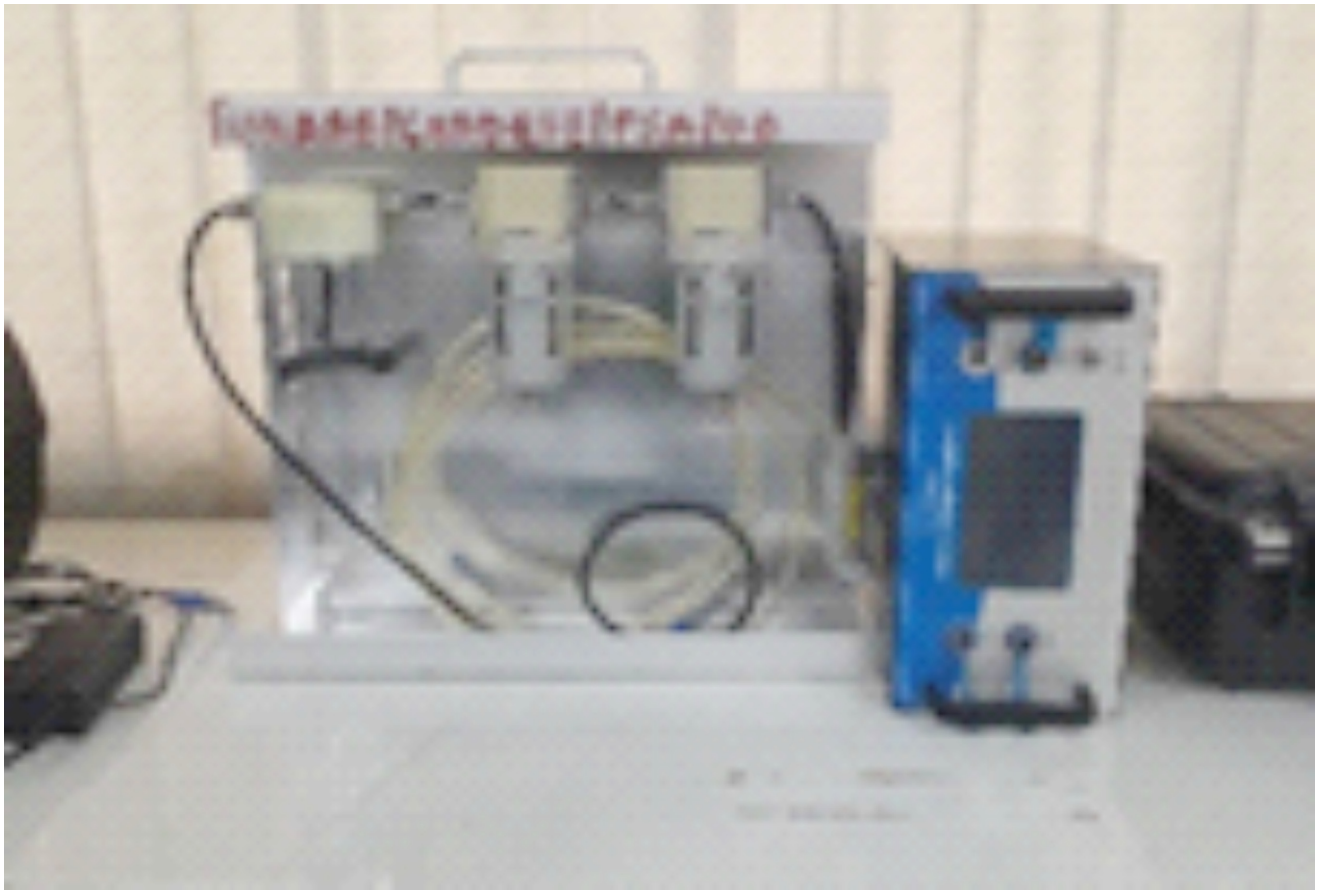
S/N	Equipment	Model	Quantity	Status
17	Dual pH/Conductivity Meter	Multilab IGS 4010-2	1	Functioning



S/N	Equipment	Model	Quantity	Status
18	Hotplate with Stirrer	SB162, STUART	1	Functioning



S/N	Equipment	Model	Quantity	Status
19	Portable Syngas Analyzer	IR-GAS-600P	1	Functioning



S/N	Equipment	Model	Quantity	Status
20	Horizontal Cylindrical Pressure Steam Sterilizer	ASTELL	1	Functioning



S/N	Equipment	Model	Quantity	Status
21	X-Ray Diffractometer	ANGSTROM ADX2700	1	Faulty



S/N	Equipment	Model	Quantity	Status
22	Air Quality Measurement Device	DM106A	5	Functioning



S/N	Equipment	Model	Quantity	Status
23	KENW00D Food Processor with Accessories	KMC010 - KMM020 Series	1	Functioning



S/N	Equipment	Model	Quantity	Status
24	Analytical Balance, 220g x 0.0001g	Mettler Toledo	1	Functioning



S/N	Equipment	Model	Quantity	Status
25	Water Distiller	Chinese	1	Functioning



S/N	Equipment	Model	Quantity	Status
26	Multiparameter water quality Photometer	Exact Micro 20	1	Functioning



S/N	Equipment	Model	Quantity	Status
27	Solar Power Meter	SM206-SOLAR	1	Functioning



S/N	Equipment	Model	Quantity	Status
28	Laboratory Incubator, 30Ltrs	DNP-9022-1A	1	Functioning



S/N	Equipment	Model	Quantity	Status
29	Thermostated Water bath, 20Ltr	DK-420	1	Functioning



S/N	Equipment	Model	Quantity	Status
30	Thermostated Water bath, 4Ltr	GFL	1	Functioning



S/N	Equipment	Model	Quantity	Status
31	Autoclave 20 Ltrs	Biobase BKM-224N	2	Functioning



S/N	Equipment	Model	Quantity	Status
32	Bench Centrifuge	HETTICH EBA 200	2	Faulty



S/N	Equipment	Model	Quantity	Status
33	T-VLF Receiver 10kHz	IRIS	1	Functioning



S/N	Equipment	Model	Quantity	Status
34	X-Ray Fluorescense Spectrometer	Rigaku	1	Functioning



S/N	Equipment	Model	Quantity	Status
35	Water Isotope Analyzer	ABB	1	Functioning



S/N	Equipment	Model	Quantity	Status
36	3D & 4D Digital syscal pro Resistivity meter	WDZJ-4 and WDA-1	1	Functioning



S/N	Equipment	Model	Quantity	Status
37	Gas Chromatograph Mass Spectrometer (GCMS)	Angstrom 8000A	1	Faulty



S/N	Equipment	Model	Quantity	Status
38	High Performance Liquid Chromatograph (HPLC)	Angstrom HPLC 500	1	Functioning



S/N	Equipment	Model	Quantity	Status
39	Vacuum Oven	DZF - 6050	1	Functioning



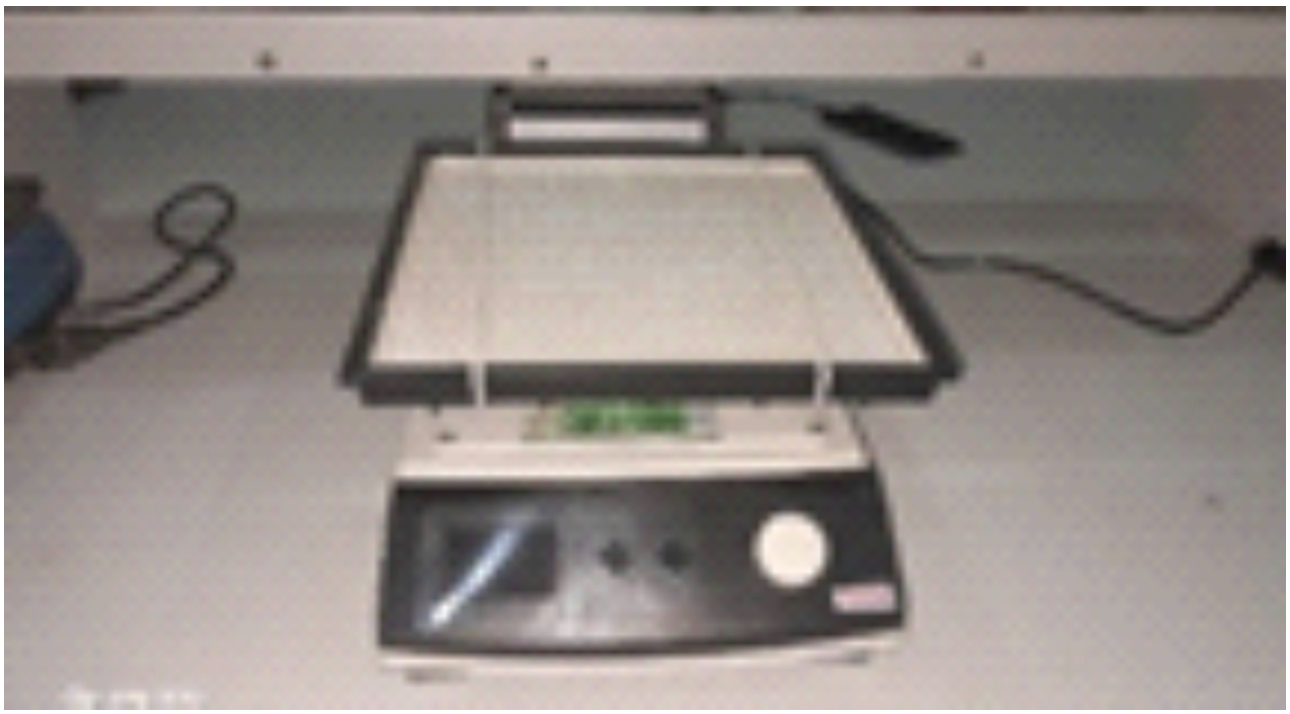
S/N	Equipment	Model	Quantity	Status
40	Analytical Balance, 250g x 0.0001g	Adams	1	Functioning



S/N	Equipment	Model	Quantity	Status
41	Vortexing Machine	M101002D, FOUR E'	1	Functioning



S/N	Equipment	Model	Quantity	Status
42	Shaker (Compact Digital Waving Rotator)	THERMO	1	Functioning



S/N	Equipment	Model	Quantity	Status
43	Amino Acid Analyzer	SYKAM	1	Functioning



S/N	Equipment	Model	Quantity	Status
44	Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES)	PG Instrument	1	Functioning



S/N	Equipment	Model	Quantity	Status
45	ELISA Reader	PG Instrument	1	Functioning



S/N	Equipment	Model	Quantity	Status
46	Turbidity meter	WGZ-1A	1	Functioning



S/N	Equipment	Model	Quantity	Status
46	Dissolved Oxygen Meter	Hanna Hi98193	1	Functioning





ISBN 978-978-698-137-6