

Dry Chemistry Analyzer

Vs

Wet Chemistry Analyzer

Dr Piyush Tailor & Dr Kiran Chauhan

Professor & Head

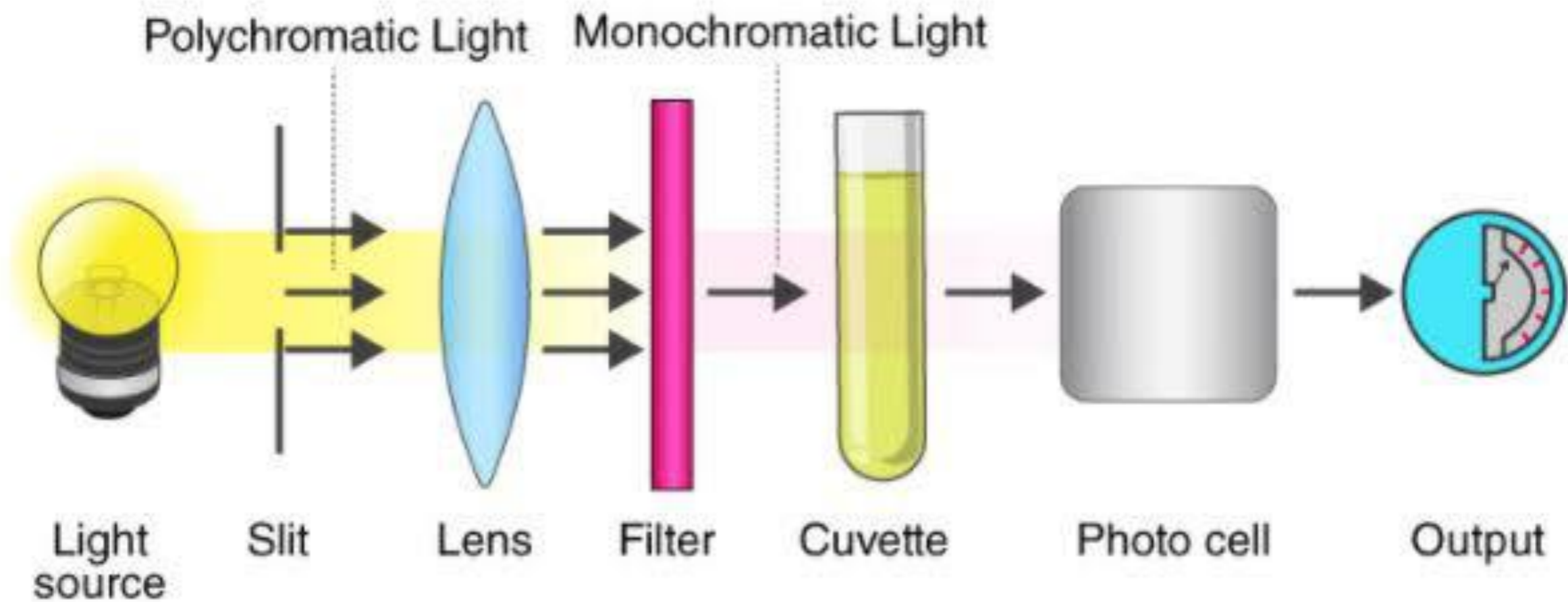
Department of Biochemistry

GMC Bhavnagar - GMERS Gandhinagar

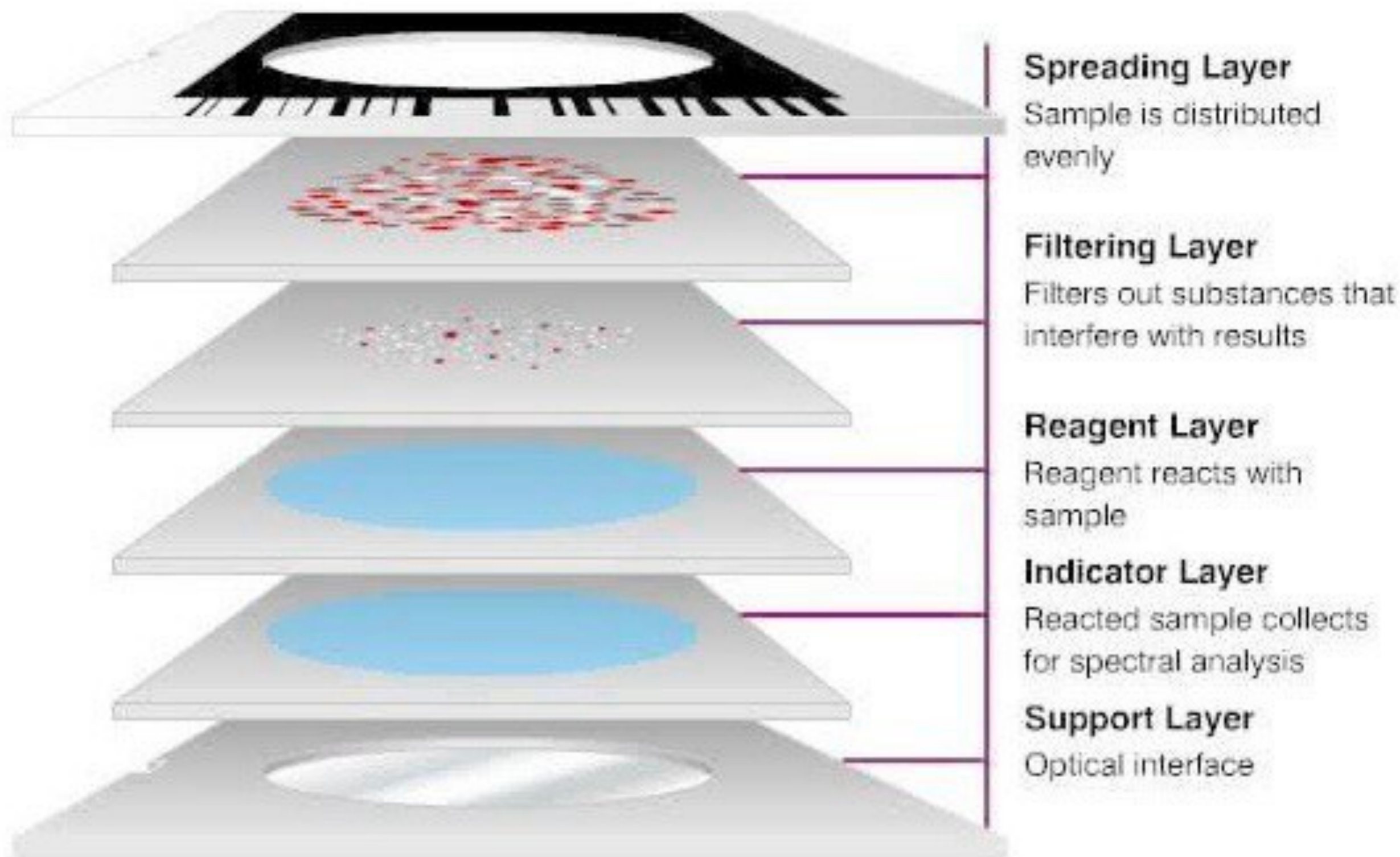
Date : 17/12/2023

Wet Chemistry Analyzer

Beer–Lambert law

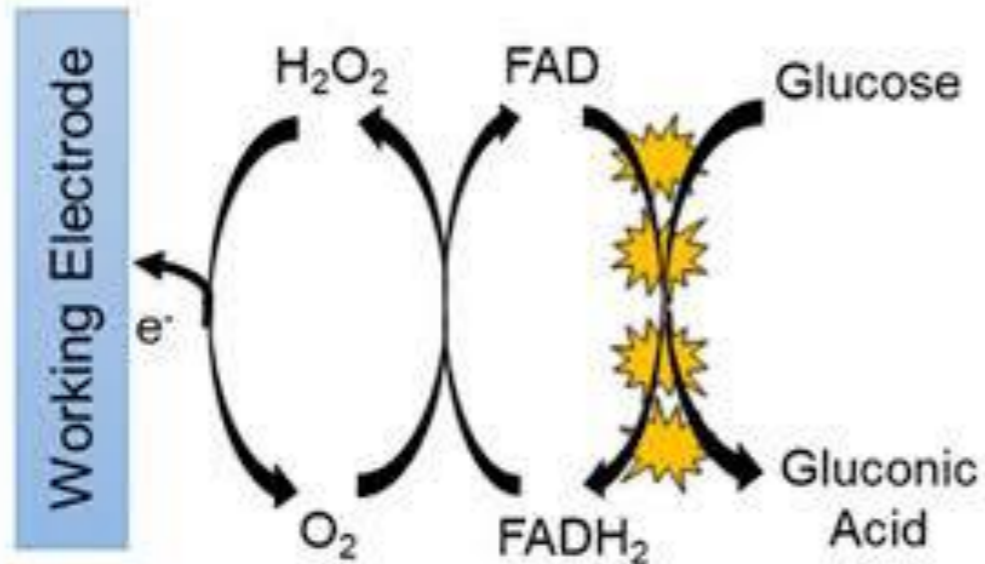


Dry Chemistry Analyzer

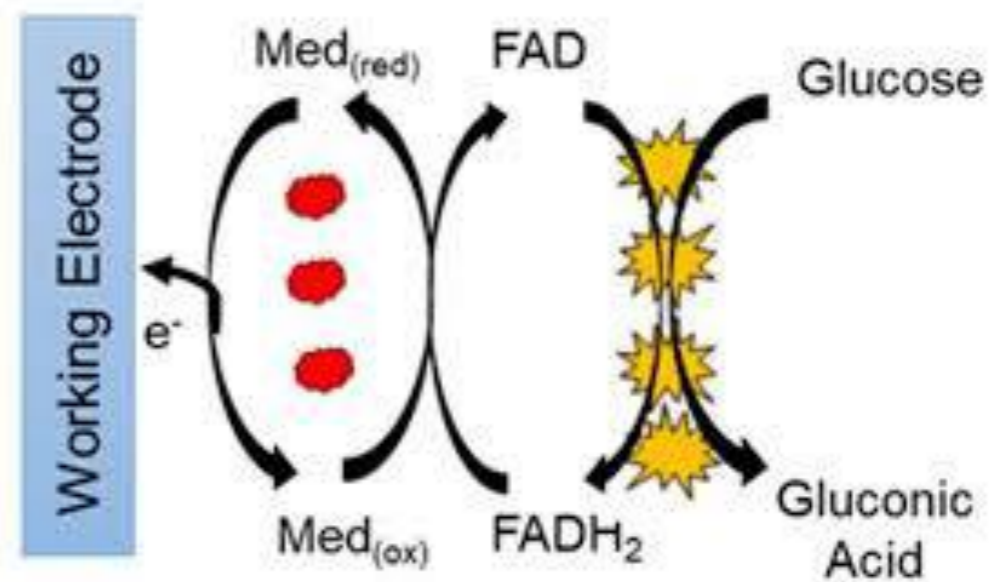


Glucometer

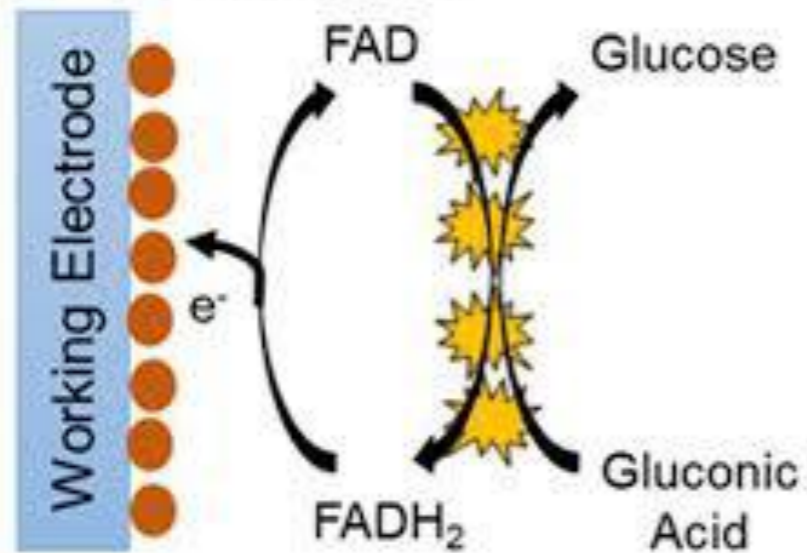
First Generation



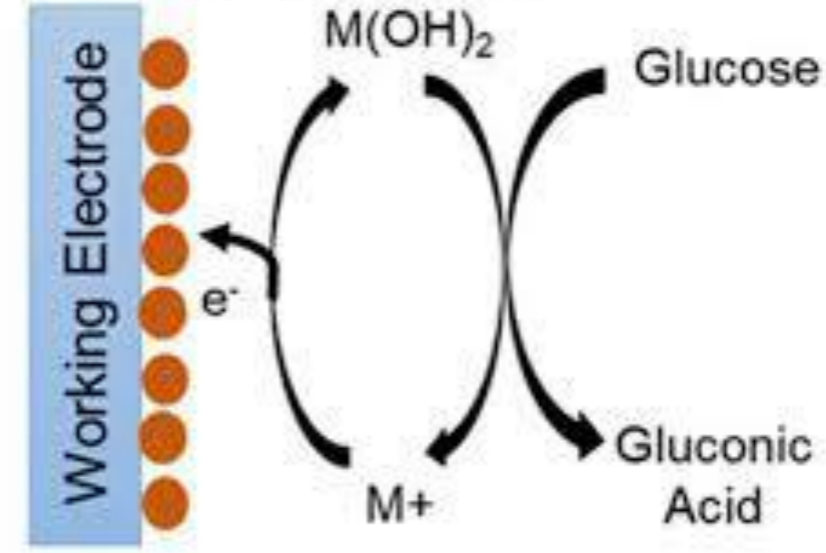
Second Generation



Third Generation



Fourth Generation



● Mediator ✨ Gox Enzyme ● Nanomaterials

Wet Chemistry

Vs

Dry Chemistry

- **Liquid** Chemical Reagents
 - In Reagent containers
 - Liquid Stable
 - Lyophilized Powder
 - **Require water for reconstitution**
-

Need Water / Draining
Increase Cost

Analysis methods

- Absorption Spectrophotometry

- **Dry** Chemical reagents
 - **Deposited on a film** or particle support.
 - **Eliminate need** for solvents / water
-

No Need of Water / Draining

Decrease Cost

Eliminates Risk of Error associated with water quality.

Analysis methods

- Reflectance Spectrophotometry

Wet Chemistry Vs Dry Chemistry

Small & Big Pack Size

- 500+ glucose tests per pack

Large Size Laboratory

- **Less Frequent Loading** require
-

Calibration frequency

- **Less Stable**
 - Once a week to Once a Month
-

2-3 pipetting Steps

- For Sample & Reagents
- Multiple Step - **Non Disposal Tips**
- Chance of **Carry Over**

Small Pack Size

- 60 + Reagent Pack

Large Size laboratory

- **Frequent loading** require
-

Calibration frequency

- **Very Stable**
 - Only when lot changes
-

Only 1 Step

- For Sample
- **Single-Use tips**
- Eliminates **Risk of Carryover**

Wet Chemistry

Vs

Dry Chemistry

1. **More Chances** Interference
 - May facility of HIL index (Hemolysis, Icterus, Lipemia)
2. **Not measure Delta Bilirubin**
3. **More** Sample **Volume** require
4. Electrolyte - ISE
 - **Falsely Low**
 - In Hypertriglyceridemia , as Lipid displaces water
5. Immunoassay Analysis
 - **Increase** Chance of **Hook Effect**
 - Very high analyte / antigen

1. **Very Less** Interference
 - Due to multilayered technology
2. **Measure** Delta bilirubin
3. **Fewer** Sample **Volume** Require
4. **Less** Chance of **bias** in electrolyte
 - Direct ISE
5. Immunoassay Analysis
 - **Reduces** the hook effect

Limitation of Dry Chemistry Analyser

Very Expensive

Space requirement - More

-20 Refrigerator Requirement

Limited Test Panel

Humidity & Temperature >>>> Interfere with Test Results

Very Few Manufacturers

THANK YOU VERY MUCH

Organizing Committee

of

GAPM-2023

&

Vadodara Associate of Pathologists & Microbiologists