

Objective

The colour of filter paper is White.

Anoxia which triggers Algae growth

Cephalosporin is antibiotics derived from the Mold Acremonium (Cephalosporium).

Bacteriophage in nature everywhere bacteria exist (virus)

The E-tongue uses an array of several chemical sensors

Subjective

What is Organoids?

Organoids are

- 3-D assemblies of cells produced by tissue culture.
- Containing more than one cell type.
- Exhibit at least some physiological features of an organ.

What is ethylene blue and its principle?

The monitoring of the freshness of climacteric fruits is important. It is monitored by measuring plant hormones. Ethylene is a gas that serves as a hormone in plants. It plays a critical role in plant growth and development such as

- Stimulating of fruit ripening
- Regulating the ripening of fruit
- Opening of flowers
- Shedding of leaves

What is conductive ink pen?

A conductive pen is a liquid polymer delivery system a standard ink pen. The polymer is electrically conductive and is rapid to dry. They are used to create or repair conductive traces on printed circuit boards. Silver-infused conductive inks used in modern transit tickets.

Biochemical oxygen demand?

Biochemical oxygen demand (BOD) represents the amount of oxygen consumed by bacteria and other microorganisms while they decompose organic matter under aerobic (oxygen is present) conditions at a specified temperature.

Controller system types?

Controller system on Chip: All the necessary components are integrated all on chip.

Controller system off Chip: There is a main system to control the functioning of the chip.

What is array?

An array is a data structure that contains a group of elements. The collection of elements have

- Same Name
- Same Data type

Arrays are arranged in natural numbers (any integer greater than zero). In Arrays data is organized that a related set of values can be easily sorted or searched.

Define Capillary Electrophoresis?

Capillary electrophoresis (CE) is a separation technique that separates molecules in an electric field according to size and charge. CE is performed in a small glass tube called a capillary that is filled with an electrolyte solution.

How Ellipsometry measures the change of polarization?

In an ellipsometer system, the source emits light with a known polarization, which is obliquely incident on the sample, and the detector measures the polarization state of the light reflected from the sample.

What is a nanozyme. How nanozymes are comparable with the protein enzyme?

Nanozymes

Nanozymes are nanomaterials that display enzyme-like characteristics. They are an important way of connecting nanomaterials to biological systems. Nanozymes are mainly composed of metal and metal oxides. Broadly, the nanozymes that have been discovered so far can be divided into two categories, as either scavenging the free radicals or generating free radicals.

Antioxidants

- Superoxide Dismutase Mimetic NP
- Catalase Mimetic NP

Pro-oxidants

- Peroxidase Mimetic NP
- Oxidase Mimetic NP

Write the tailoring of Nanowires?

Tailoring of Nanowires

- **Doping**

The transport properties can be tuned by means of doping.

- **Introduction of Hetrostructures**

By making use of hetero-structures the nanowire properties can be tailored.

- **Use of higher band gap material**

By covering the NW radially by a higher band gap material surface, can improve the performance.

The band gap is the energy difference between the top of the valence band and the bottom of the conduction band.

Sources of radioactive contamination in drinking water?

Radioactive contamination comes from man-made sources. Radionuclides found in drinking water are members of three radioactive series, uranium, thorium, and actinium.

What is Porus silica-based Biosensor?

Porus silica-based Biosensor for heavy metals

A bio sensing platform, based on nanostructured porous Si (PSi), thin films.

- The biosensor is for label-free monitoring of heavy metal ions $\text{Ag}^+ > \text{Pb}^{2+} > \text{Cu}^{2+}$).
- Bio sensing principle is based on the enzyme inhibition.
- Optical transducers is used in the biosensor.
- The detection limit range of 60-120 ppb.

What is papain enzyme digest?

Papain is a cysteine protease with wide specificity, cleaving the peptide bonds of basic amino acids, such as leucine and glycine. It also hydrolysis esters and amides. Papain will digest most protein substrates more extensively than the pancreatic proteases do.

What is Signal Analysis?

Signal Analysis involves the ability to collect and understand sensitive information sent via various signals.

What is Sol-gel?

The sol-gel process is a method for producing solid materials from small molecules. The method is used for the fabrication of metal oxides, especially the oxides of silicon and titanium.

What is Photocatalysis?

Photocatalysis is a process when a light source interacts with the surface of semiconductor materials. Photocatalysis is used for the removal of pollution. Degradation of methylene blue was considered as a marker for photocatalyst activity of the nanorods.

Loop-Mediated isothermal Amplification (LAMP)? And advantage?

What is the difference between Qualitative biomarker and Quantitative biomarker?