**Team id:PNT2022TMID13519**

**Project title:Real time river water quality Monitoring using IOT**

**Project Objective**:

Real-time data access can be done by using remote monitoring and Internet of Things (IoT) technology.Data collected at

the apart site can be displayed in a visual format on a server PC with the help of Spark streaming analysis through Spark MLlib, Deep learning

neural network models,Belief Rule Based (BRB) system and is also compared with standard values. Also it assures low cost

efficent water quality monitoring and control over river water.Since its battery operated,it is much safer for the locality and people to use the

river water that has low rate of electrical shocks as the batteryis completely insulated and rechargable so that the system is continuous.

By using this product people can predict ,analyse the hardness of water and also the factors like temperatureand turbidity of water for having

a safe drinking and water with better consistancy for house hold purposes.Since water is an essential compound in our daily basis intake of it

in an healthy manner is provided by our cost efficient quality monitoring and control system which is market affordable and greatly life saving

factor for people using river water. The environment around consists of five key elements e.g., soil, water, climate, natural vegetation, and

landforms. Among these water is the utmost crucial element for human life. It is also vital for the persistence of other living habitats. Whether

it is used for drinking, domestic use, and food production or recreational purposes, safe and readily available water

is the need for public health .

So it is highly imperative for us to maintain water quality balance. Otherwise, it would severely damage the health of the

humans and at the same time affect the ecological balance among other species . Water pollution is a foremost global

problem which needs ongoing evaluation and adaptation of water resource directorial principle at the levels of international

down to individual wells. It has been studied that water pollution is the leading cause of mortalities and diseases worldwide.

The records show that more than 14,000 people die daily worldwide due to water pollution. In many developing countries,

dirty or contaminated water is being used for drinking without any proper prior treatment. One of the reasons for this happening

is the ignorance of public and administration and the lack of water quality monitoring system which makes serious health issues.

In this paper, we depict the design of Wireless Sensor Network (WSN) that assists to monitor the quality of water with the

support of information sensed by the sensors dipped in water. Using different sensors, this system can collect various parameters

from water, such as pH, dissolved oxygen, turbidity, conductivity, temperature, and so on. The rapid development of WSN

technology provides a novel approach to real-time data acquisition, transmission, and processing.

The clients can get ongoing water quality information from far away. Now a day’ s Internet of things (IoT) is an innovative

technological phenomenon. It is shaping today’ s world and is used in different fields for collecting, monitoring and analysis

of data from remote locations. IoT integrated network if everywhere starting from smart cities, smart power grids, and smart supply chain to

smart wearable . Though IoT is still under applied in the field of environment it has huge potential. It can be applied to detect forest fire and

early earthquake, reduce air population, monitor snow level, prevent landslide, and avalanche etc. Moreover, it can be implemented

in the field of water quality monitoring and controlling system .

Water quality monitoring has gained more interest among researchers in this twenty-first century. Numerous works are

either done or ongoing in this topic focusing on various aspects of it. The key theme of all the projects was to develop an

efficient, cost-effective, real-time water quality monitoring system which will integrate wireless sensor network and

internet of things.

In this research, we monitor the physical and chemical parameters of water bodies inside Chittagong city by using an

IoT based sensor network.