PROJECT REPORT

DEPARTMENT OF CHEMISTRY

Title of the Project: Water quality assessment of rive Ganga

Theme of the project: The Department of Chemistry of Dhruba Chand College has conducted a project for the 6th Semester HONOURS students. The name of the project is "Water quality assessment of rive Ganga".

Water is one of the most essential and precious resources for life on Earth. However, water quality is often compromised by various natural and anthropogenic factors, such as climate change, population growth, urbanization, industrialization, agriculture, and pollution. Water quality assessment is a process of measuring and evaluating the physical, chemical and biological characteristics of water in relation to its suitability of different purposes and uses.

Usually, the wildlife consumes water once or twice a day which indicates that the water is not perfect for them. A calf's body contains 75-80% water at birth and about 55-65% water at maturity, clean water is very important for their healthy survival. To search for the cause of contamination of River Ganga, reveals that the entertainment work of tourists, disposal of waste, pesticides are sources of some manmade pollution of waste. Therefore, restriction must be done to reduce it.

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Outcome of the project: The above study showed that the Ganga River is slightly alkaline. Among the all tested physico-chemical parameters; pH, As, Alkalinity, BOD within the limit whereas DO exceeds standard limit. EC, Chloride ion, fluoride ion and TDS level are much higher than permissible amount. Some parameters have no standard limit for the animals. The overall test results that the water of River Ganga is not suitable for wildlife.

Since the above project provides information about the pollution level of the most important and sacred river Ganga, students were enthusiastic about performing the experiment and curious to know the outcome of the work. Nine students of the Honours course were given equal load of work to survey the existing literature on water pollution, collect the water from Kakdwip 8 no. Harwood point, performing experiments using various instrumental technique and writing the several portion of the project by group discussion.

Following are the major outcome of the project:

a) Students learnt how to read research articles and create a powerpoint presentation to show the final result of the work.
b) Students used different experimental technique outside the scope of their syllabus to determine amount of Arsenic, Biological Oxygen

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Demand (BOD), Chemical Oxygen Demand (COD), Dissolved Oxygen (DO), Fluoride ion concentration using absorption spectroscopy.

c) Since the experiment to determine the amount of Arsenic was performed in collaboration with Dr. Tarit Roychowdhury, Associate Professor, Department of Environmental studies, Jadavpur University, students obtained a glimpse of the environment of hardcore research laboratory in a premier Institute.

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