

## **Congratulations for seeking Govt. Sponsored Project**

Name: **Dr. Tanushree Bhattacharya & Dr. Nishi Srivastava (Principal Investigator)**

Department: **Civil and Environmental Engineering & Physics**

Project Title: **Source apportionment of PM2.5 and PM10, air pollution data analysis and identification of plants (shrubs and trees) with good dust capturing capacity and air pollution tolerance in Ranchi city.**

Funding Agency: **Jharkhand State Pollution Control Board**

Sanction Amount: Rs. **7776300**

Fund Utilised.: 0

Tenure: **3 Years**

Abstract:

**This project presents a comprehensive two-year research initiative by Birla Institute of Technology, Mesra under the National Clean Air Programme, focusing on source apportionment of PM2.5 and PM10, air pollution data analysis, assessment of air pollution indicators, and identification of plants with high dust-capturing capacity and air pollution tolerance in Ranchi city. The study aims to chemically characterize particulate matter, apply receptor modeling techniques to identify major pollution sources, analyze spatial and temporal pollution patterns, and evaluate the effects of lockdown and unlock periods on air quality. In addition, the project emphasizes nature-based mitigation strategies by assessing shrubs and trees using Air Pollution Tolerance Index (APTI), Anticipated Performance Index (API), and Dust Capturing Capacity (DCC) to identify suitable native species for green belt development in pollution hotspots and traffic-dominated areas. Through seasonal sampling, advanced chemical analysis, and plant biomonitoring, the project seeks to generate scientific evidence that will support effective air quality management, urban greening, and sustainable pollution mitigation strategies for Ranchi city. The expected outcomes include source-wise pollution estimates, seasonal air quality assessments, and a scientifically validated list of pollution-tolerant plant species for urban plantation programs.**