
Departmental Seminar

Seminar Title	: Conference Return Seminar: Enhancing Slaughterhouse Wastewater Treatment Using Natural Biochar: A Cost-Effective and Sustainable Alternative to Activated Charcoal
Speaker	: Alok Sahu
Supervisor	: Dr. M. Gattu
Venue	: CE Seminar Hall
Date and Time	: 11 Mar 2025 (400pm)
Abstract	: Slaughterhouse Waste water (SWW) features a high degree of organic matter which makes it a significant source of environmental pollution. It has high pathogen content and heavy weight metal speciation pollution potential. Our goal is to determine the water quality in Slaughterhouse Waste water (SWW), then assess the amount of pollutants removed using pure natural biochar adsorbent. Biochar was made from four different natural materials including cow dung, cauliflower and pumpkin pulp and seeds along with bentonite clay as a binder in different combined ratios. This biochar was benchmarked for natural pollutant removal against conventional activated charcoal. Key quality indicators of water such as pH, turbidity, Hardness, BOD, chloride, and heavy metals were measured before and after treatment. The results demonstrated that the natural biochar produced from optimized mixing ratios was able to remove organic pollutants more efficiently than activated charcoal and pathogens and heavy metals with comparable efficiency. Graphical Forward comparison of natural biochar with activated charcoal showed the removal efficiency of activated charcoal after treatment outperformed natural biochar. This work demonstrates the promising potential of using inexpensive agricultural and natural waste-based biochar in Slaughterhouse Waste water (SWW) treatment and provides a semi-alternative solution to existing methods and provide better water quality with less negative effects on the environment.