Title: Bioremediation of Acid Mine Drainage Using Sulfate-Reducing Bacteria

Abstract: Acid Mine Drainage (AMD) is a significant environmental challenge for the coal industry, contaminating water sources with heavy metals and acidity.
This project proposes the development of a passive, in-situ bioremediation system utilizing indigenous sulfate-reducing bacteria (SRB). The research will focus on isolating and cultivating robust SRB strains from local mine water, optimizing their growth conditions in a bioreactor, and testing their efficacy in neutralizing pH and precipitating heavy metals from AMD effluent.
The goal is to create a cost-effective and sustainable alternative to conventional chemical treatment methods.