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Patent Search

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Abstract:

Abstract There is a growing need for efficient and effective dewatering methods due to the widespread pollution of water sources by industrial sludge. This study intr new way of dewatering sludge using bamboo charcoal (BC), an eco-friendly and renewable material. This study strictly followed the Water Act of 1974 and the regulat by India's Central Pollution Control Board (CPCB) to guarantee the integrity of the results. Traditional dewatering methods and the BC approach were compared using measures, such as water content, turbidity, and chemical oxygen demand (COD). The study found that the BC method was able to reduce water content significantly (turbidity (by 60%), and COD levels (by 50%). However, the approach showed a high adsorption capacity, which enhanced the quality of the treated water. According tc findings, Bamboo Charcoal is an alternate method for sludge dewatering that is feasible, environmentally friendly, and economical, and it may have potential applicat wastewater treatment plants. This research makes a substantial contribution to the body of previously accumulated knowledge. In accordance with the judgements h as a result of the National Green Tribunal Act of 2010, it provides a workable solution for reducing water pollution.

Complete Specification

Description: Clearing the Waters through Innovative Sludge Dewatering Techniques Using Bamboo Charcoal

Field and Background of the Invention

Water pollution remains one of the most significant environmental challenges due to its considerable risks to human health and ecological systems. This issue is significantly exacerbated by discharging sewage from factories and other types of waste into bodies of water. Consequently, water resources have become polluted and the quality of aquatic ecosystems has deteriorated. The problem is worsened in India by increasing industrialization and inadequate wastewater treatment facilities. The regulatory framework given by the Water (Prevention and Control of Pollution Act), 1974 and the procedures set forth by the Central Pollution Control Board (CPCB) This act was passed in 1974 and was intended to prevent and control pollution in water supplies. Even though the Water Act was passed in 1974, this continues to be a situation. The act's purpose is to prevent and regulate water pollution by restricting the discharge of pollutants; nonetheless, the act's execution has been fraught with problems. The act aims to reduce and manage pollution in water sources. In addition, the decisions handed down due to the National Green Tribunal Act of 2010 have continuously highlighted the necessity of finding innovative solutions favourable to the environment to battle water pollution effectively. Even though standard processes for dewatering sludge, such as centrifugation, filtration, and chemical coagulation, have seen broad application, these approaches have some limitations. These methods often ask for considerable input energy, produce secondary pollutants, and have a reduced capacity for removing particular contaminants. For this reason, it is of the utmost importance to study alternative technologies that are kind to the environment, cost-effective, and capable of treating sludge and wastewater effectively. This investigation aims to present Bamboo Charcoal (BC) as a novel material for the dewatering of sludge. Throughout history, bamboo, a material that is abundant

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