

Treatment of Flowing and Standing Rainwater Using Nanotechnology

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Abstract: This project report investigates the application of nanotechnology in the treatment of water sourced from roof runoff and lakes, focusing on water bed filtration techniques. The primary objective is to develop efficient and sustainable methods for purifying and storing water, ensuring its safety for agricultural and household use.

The report highlights the unique properties of nanomaterials, such as Titanium Dioxide (TiO₂) and Aluminium Oxide (Al₂O₃), which enhance the effectiveness of filtration systems by removing contaminants like heavy metals, bacteria, and organic compounds. The study emphasizes the advantages of nanotechnology, including reduced energy consumption, self-cleaning properties, and the ability to tailor filtration systems to specific regional challenges.

Experimental results demonstrate significant improvements in water quality post-treatment, showcasing the potential of nanotechnology to address global water quality issues. The findings advocate for the integration of advanced filtration systems in both urban and rural settings to promote sustainable water management practices.

Keywords: Titanium Dioxide (TiO₂) and Aluminium Oxide (Al₂O₃)

