



Development of a High-Efficiency Adsorbent for Arsenic Removal from Water: Synthesis, Characterization, and Performance Evaluation

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Abstract:

This collaborative research, conducted by Juliana B. Rossi and Professor Isabela Oliveira during Juliana's master's studies at the Federal University of Rio de Janeiro, presents a groundbreaking adsorbent material designed for the efficient removal of arsenic from water.

Keywords:

1. Arsenic Removal
2. Adsorbent Material
3. Water Treatment
4. Surface Area

Introduction:

The introduction highlights the significance of addressing arsenic contamination in water and introduces the research objective: the development of a highly efficient adsorbent material for arsenic removal.

Methods:

The study details the synthesis and characterization of the adsorbent material, emphasizing its impressive surface area of 532 square meters. The manufacturing process and key features of the adsorbent are thoroughly described.

Main Results:

The developed adsorbent material demonstrated exceptional efficiency in arsenic removal, showcasing its potential for practical application in water treatment systems. The study provides insights into the material's performance under various conditions, validating its efficacy.

Conclusion:

In conclusion, the research represents a significant advancement in arsenic removal technology, presenting an adsorbent material with a large surface area that proves highly efficient in water treatment. The findings contribute to the ongoing efforts to address arsenic contamination in water sources.