

Arsenic Removal from Groundwater Utilizing Modified Ashes as Adsorbent †

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Abstract: Arsenic is found naturally in soil and rocks in both organic and inorganic forms and is the byproduct of different activities like mining, copper smelting, and coal burning. Groundwater is one of the most important pathways for the human population to get exposed to arsenic. Being tasteless, odorless, and colorless, it becomes undetectable and causes nausea, blindness, stomach pain, discoloration, and paralysis of the human body. According to the WHO, the permissible limit of arsenic in groundwater is 10µg/L, but the concentration in groundwater usually exceeds this limit. Various technologies like Ion exchange, precipitation, solid/liquid separation, and adsorption are used to remove arsenic from water. In this study, different types of modified ashes are used as an adsorbent for efficient removal of arsenic from water, and separately, the results are compared with the permissible limit given by WHO.

Keywords: arsenic; adsorbent; ash; adsorption.

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Conflicts of Interest

The authors declare no conflict of interest.