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## ARSENIC REMEDIATION OF AQUEOUS MEDIA USING *PINUS ROXBURGHII* SARG. (PINOPHYTA) BARK

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### Abstract

The arsenic removal from aqueous medium was investigated through adsorption by employing finely powdered bark of *Pinus roxburghii* Sarg. The batch mode laboratory scale experiments were conducted to investigate the removal efficiency of Pinus bark against total arsenic and the effect of pH, contact time, adsorbent dose and initial adsorbate concentration on adsorption to optimize the process. Langmuir and Freundlich isotherms were used to validate the adsorption data and respective constants were evaluated. The removal efficiency was found to be dependent on pH, adsorbent dose, contact time and initial concentration. The maximum arsenic uptake was 95 % at pH 4, 40 g L<sup>-1</sup> adsorbent dose and 90 minutes contact time. The Freundlich constants,  $K_f$  and  $n$  were found to be 3.5 mg g<sup>-1</sup> and 0.529, respectively. The results obtained in this study clearly demonstrate the potential of *Pinus roxburghii* Sarg. bark for the arsenic removal from aqueous solutions.

*Key words:* adsorption isotherms, arsenic, drinking water, *Pinus roxburghii* Sarg.

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