



SDI Review Form 1.6

PART 1:

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	2012 IRJPAC 2713
Title of the Manuscript:	ARSENIC REMOVAL FROM REAL-LIFE GROUNDWATER BY ADSORPTION ON NEEMBARK (<i>Azadirachta indica</i>)

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Line 172, Coconut shell, Neem bark, Orange peel, Nut shell, Flax, Saw dust, Wheat stalk and News paper were discussed for arsenic treatment. However, it was commonly believed that iron or calcium based materials were effective in arsenic adsorbent. The author should clarify the advantages of Neem bark in arsenic treatment compared to the effective arsenic adsorbents. Line 175, the saturated adsorption capacity is the most important factor for evaluating the adsorbent. Authors should compare the saturated adsorption capacities of different adsorbents.	Neem bark is very low cost natural adsorbent and available waste material in Bangladesh. # “Until now, various kinds of adsorbents has been studied for the removal of arsenic. The maximum As(III) removal efficiency achieved was 99% for iron oxide-coated sand at an adsorbent dose of 20 g/L with an initial As concentration 100 µg/L in batch studies.³² The removal efficiencies for As(III) from an aqueous solution (100 µg/L, 100 mL) by 0.1 g of modified fungal biomass were 75%, after a 12-h batch treatment.³³ When an aqueous As(III) solution of 10 mg/L concentration was stirred in the presence of both 1.0 g/L TiO₂ and 1.0 g/L activated alumina under sunlight irradiation, the arsenic removal increased with time and reached 89% after 24 h.³⁴ Although the removal efficiencies in the proposed system were similar to those obtained with the other adsorbents, the treatment time was very short because of the flow method (column system).” have already been inserted, as pointed out.



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	Line 204, it is well known that low pH is advantage for arsenic removal. Authors should clarify the reasons why pH 2.36 was selected. Figure 1-5 were provided to show the effect of pH, particle size etc.. However, arsenic removal efficiency and arsenic removal capacity in different columns could not be evaluated using “adsorption percent”. Authors should provide “breakthrough curve” of column test in different conditions, with “Bed volume” in x-axis and “effluent arsenic concentration” in y- axis. Table 2 final As concentration was 60 µg/l, which was higher than arsenic standard of WHO in drinking water (10 µg/l).	# It is shown that lower pH at 2.36 comparatively higher % of arsenic adsorption. # Next time, we will try for “breakthrough curve”. # The final concentration is 60 µg/l with the help of our developed process which is about acceptable level for Bangladesh because arsenic standard of WHO in drinking water (50 µg/l) for Bangladesh.
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		