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Title: Enhancing the antimony sorption properties of nano titania-chitosan beads using epichlorohydrin as the crosslinker

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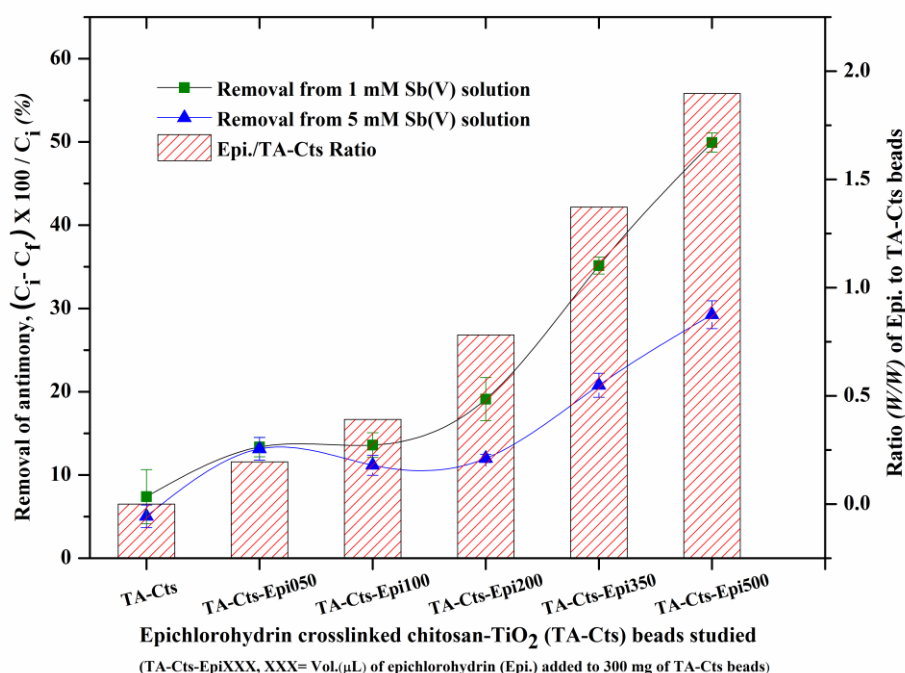
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Graphical abstract



Epichlorohydrin crosslinked chitosan-TiO₂ (TA-Cts) beads studied
(TA-Cts-EpiXXX, XXX= Vol.(μ L) of epichlorohydrin (Epi.) added to 300 mg of TA-Cts beads)

Highlights:

- Nano-titania-chitosan beads containing varying amounts of crosslinker were prepared
- First detailed study on crosslinker dependent capacity of chitosan composite beads
- Crosslinker increases the capacity and decreases the rate of attaining equilibrium
- High capacity for the anionic species of antimony has been demonstrated
- All the three components in the beads participate in the sorption process

ABSTRACT

Antimony is classified as a pollutant of priority importance by USEPA. We have earlier reported the synthesis of nano-titania impregnated epichlorohydrin crosslinked chitosan (TA-Cts-Epi) beads, in a format suitable for large scale applications with high sorption capacity for antimony. To understand the sorption mechanism, and to fine tune the bead composition,

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