

**Electronic Supplementary Information (ESI)  
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**Ammonium molybdate phosphate functionalized silicon dioxide  
impregnated in calcium alginate for highly efficient removal of  $^{137}\text{Cs}$  from  
aquatic bodies**

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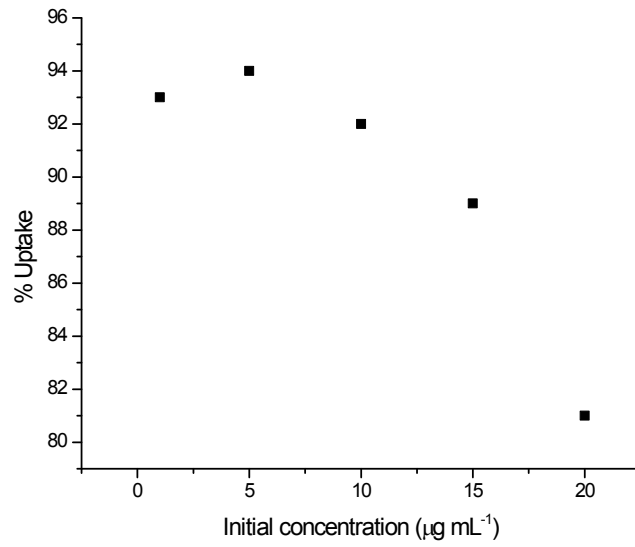
E mail: [rsinghal@barc.gov.in](mailto:rsinghal@barc.gov.in) ;Tel:91-22-25592233 fax No 91-22-25505151



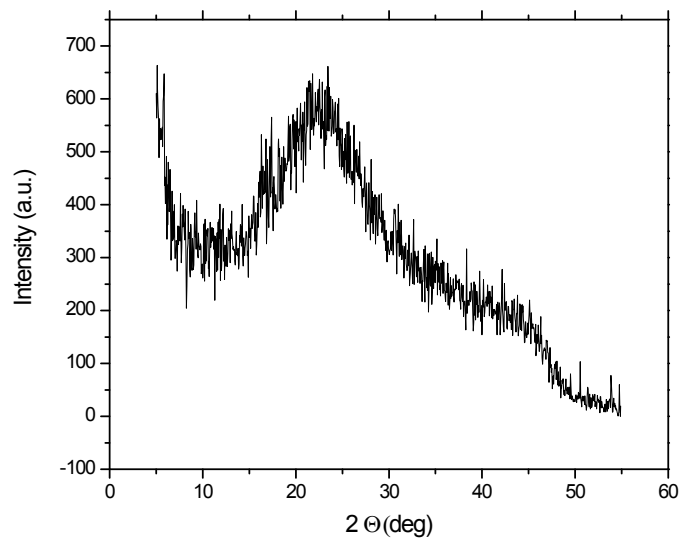
**Fig. S-1** Stepwise synthesis of SiO<sub>2</sub> from rice husk



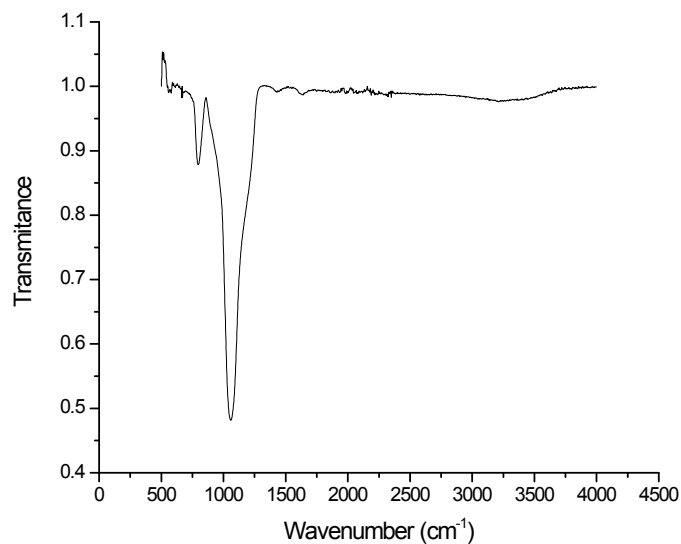
**Fig. S-2:** Set up for AMP-SiO<sub>2</sub>-Ca-Alg bead synthesis



**Fig. S-3:** % uptake of Cs by AMP-SiO<sub>2</sub>-Ca-Alg beads synthesised from commercial silica



**Fig. S-4:** XRD of AMP modified SiO<sub>2</sub> after regeneration



**Fig. S-5:** ATR-FTIR spectra of AMP modified SiO<sub>2</sub> after regeneration

**Table S-1:** Physicochemical characteristics of groundwater before and after removal of Cs using AMP-SiO<sub>2</sub>-Ca-Alg beads

Parameters treatment	Before treatment	After
pH	5.4–7.3	5.6–7.1
Conductance (mS)	301–412	346–388
Redox potential (mV)	111–135	123–139
DOC (mg L <sup>-1</sup> )	7–10	9–11
Cl <sup>-1</sup> (mg L <sup>-1</sup> )	16.6–21.3	15.1–
20.9		
PO <sub>4</sub> <sup>3-</sup> (mg L <sup>-1</sup> )	0.53–0.56	0.52–
0.56		
Na (mg L <sup>-1</sup> )	23.1–28.0	23.4–
28.7		
K (mg L <sup>-1</sup> )	0.81–0.90	0.87–
0.89		
Mg (mg L <sup>-1</sup> )	14.4–15.9	15.3–
16.4		
Ca (mg L <sup>-1</sup> )	40.1–43.3	38.8–
44.2		
Cu (mg L <sup>-1</sup> )	4.5–8.3	6.1–
8.9		

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Fe (mg L <sup>-1</sup> )	1.1–2.4	1.2–
2.3		
Si (mg L <sup>-1</sup> )	32.3–41.5	39.0–
48.1		

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