

Electronic Supplementary Information

Selective Separation of ^{152}Eu from a Mixture of ^{152}Eu and ^{137}Cs Using Chitosan Based Hydrogel

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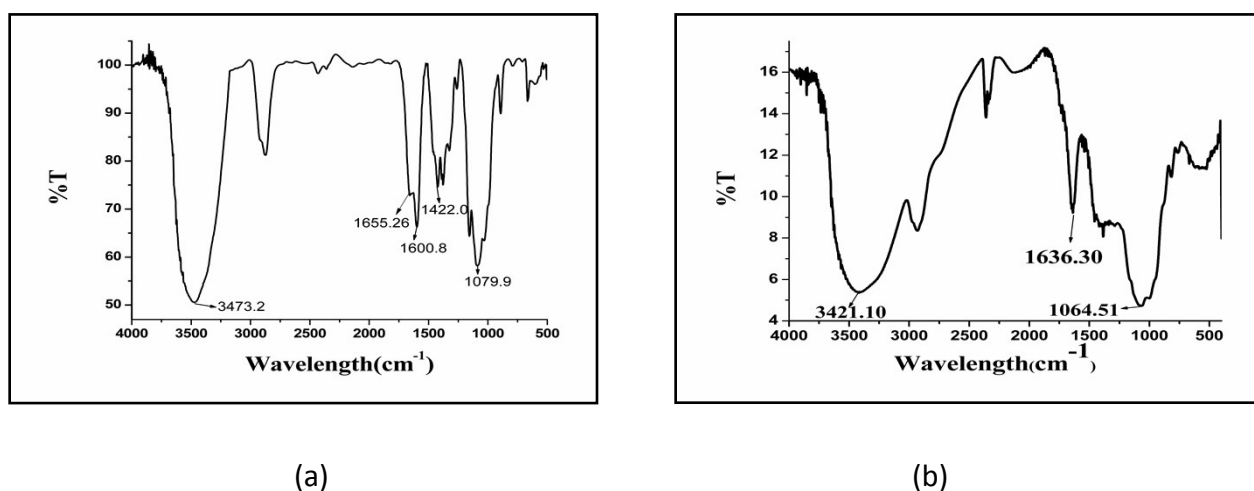


Figure S1: FT-IR spectra of (a) chitosan and (b) ChG .

Sample	$\nu_{\text{C=O}}$ (amide I)	$\delta_{\text{N-H}}$ (amide II)	$\nu_{\text{C=N}}$ (imine)	$\nu_{\text{(bridge C-O-C)}}$
Chitosan	1655.26	1600.8	absent	1079.9
ChG	absent	absent	1636.3	1073.3

Table S1. The most significant IR peaks (cm^{-1}) of chitosan and the synthesized Schiff bases

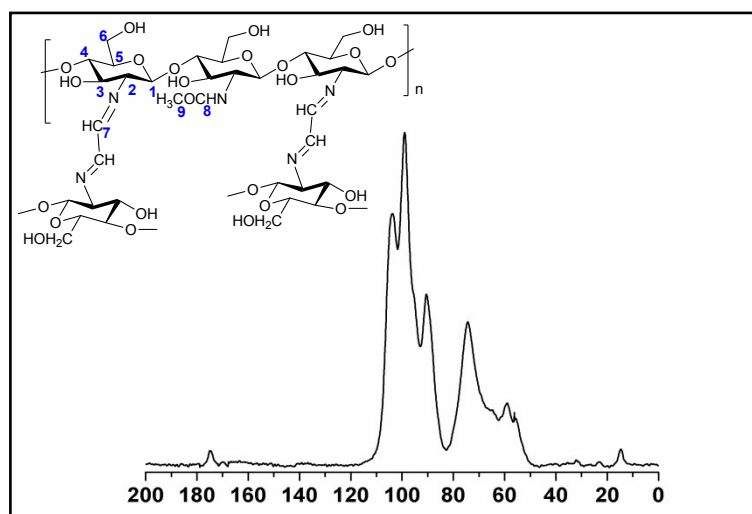
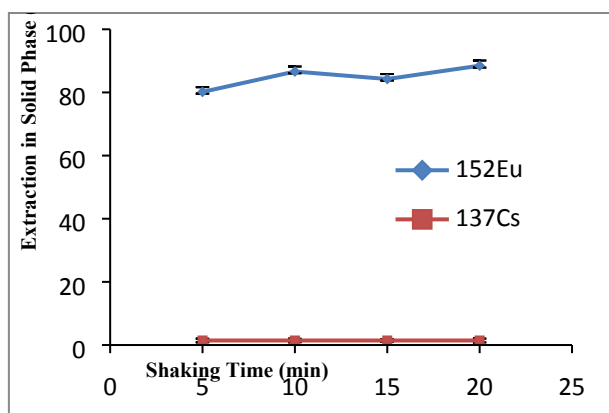


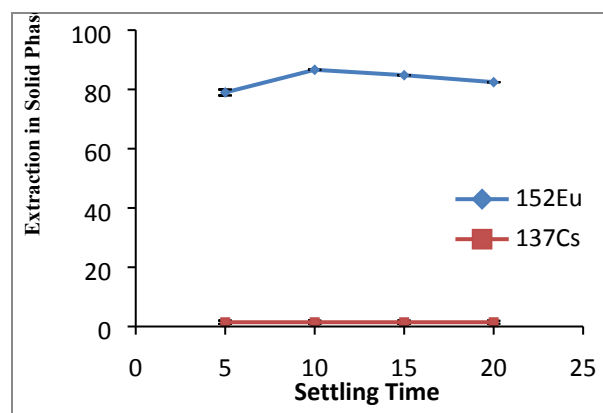
Figure S2: ^{13}C CP-MAS NMR spectrum ChG

C_1	$\text{C}_{1'}$	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9
104.04	98.93	56.14	74.57	90.74	74.57	59.10	170.67	174.65	14.90

Table S2. The chemical shifts (δ , ppm) in ^{13}C CP-MAS NMR spectrum of ChG



(a)



(b)

Figure S4: SLX profile of ^{152}Eu and ^{137}Cs in solid phase (hydrogel) by varying (a) shaking time and (b) settling of the medium

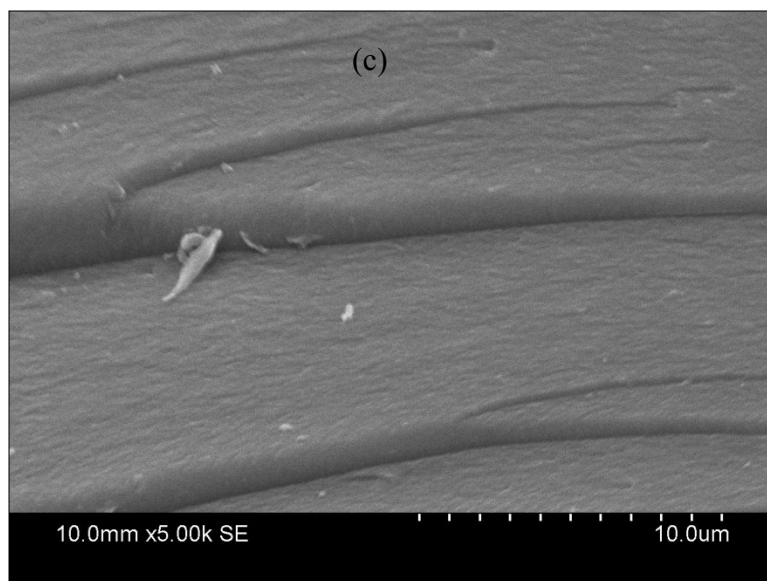
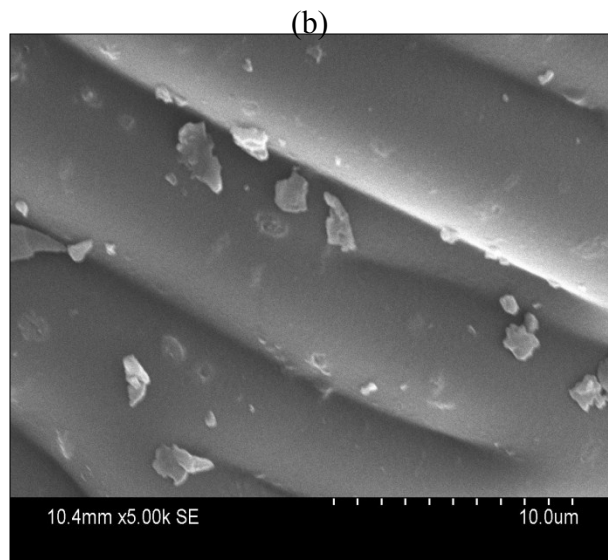
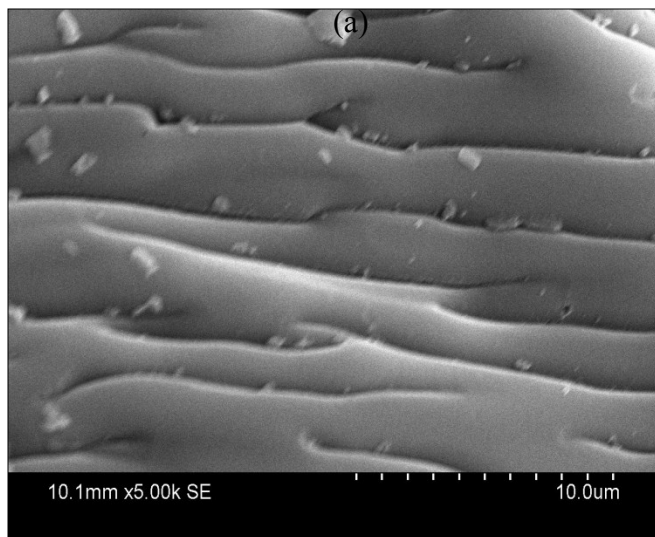


Figure S5: Morphological Study of ChG after gamma irradiation (a) 1 kGy, (b) 4 kGy and (c) 8 kGy.