

Supplementary Materials

for

Decomplexation of Pb-EDTA by electron beam irradiation technology: Efficiency and mechanism

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Number of tables: 2

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Table S1. Degradation intermediates of Pb-EDTA formed in electron beam irradiation.

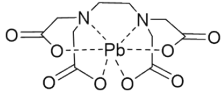
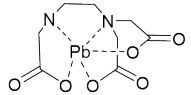
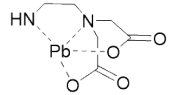
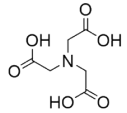
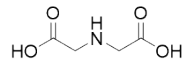
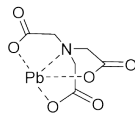
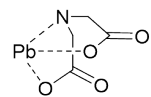
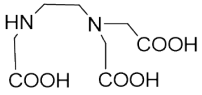
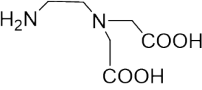
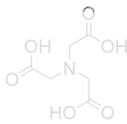
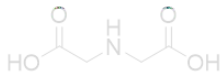
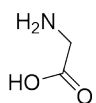
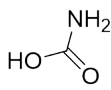
Compounds	Predicted Formula	Observed m/z	Ionization Mode	Predicted Structure
PbED3A	$C_8H_{10}PbN_2O_6$	437.4208	ESI+	
PbED2A	$C_6H_{10}CuN_2O_4$	395.8438	ESI+	
PbEDA	$C_2H_4N_2Pb$	263.2548	ESI+	
NTA	$C_6H_7NO_4$	189.1458	ESI+	
IDA	$C_4H_7NO_4$	133.2107	ESI+	
Pb-NTA	$C_6H_7PbNO_4$	396.4452	ESI+	
Pb-IDA	$C_4H_7PbNO_4$	340.5121	ESI+	

Table S2. Toxicity data of intermediate products

Atom	Acute toxicity LC50	Growth inhibition IGC50	Developmental toxicity	Bioaccumulation factor
	661.84	938.1	0.3	0.002
	673.7	2317.8	0.23	0.086
	762.37	3518.2	0.71	0.6
	702.23	414.25	0.56	0.17
	288.53	4019.4	0.69	0.066
	334.66	2772.4	0.38	0.095
	679.39	1741.8	0.64	0.29
	683.48	3612.34	0.91	0.3

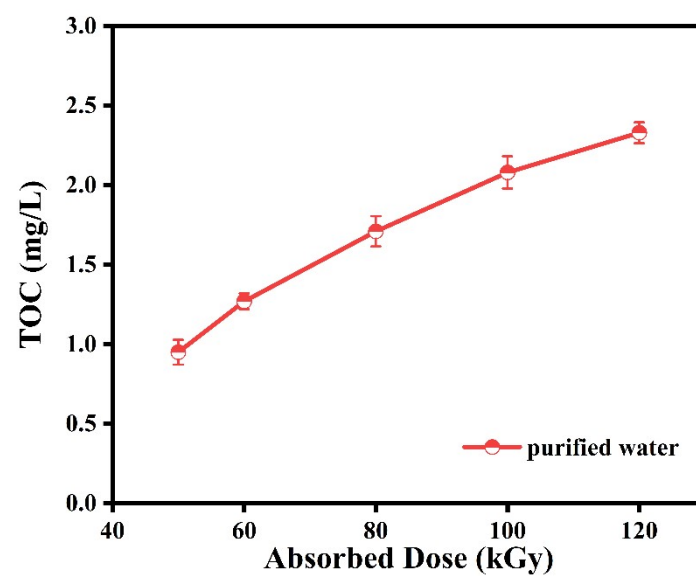


Fig. S1. TOC of purified water in irradiated plastic bags

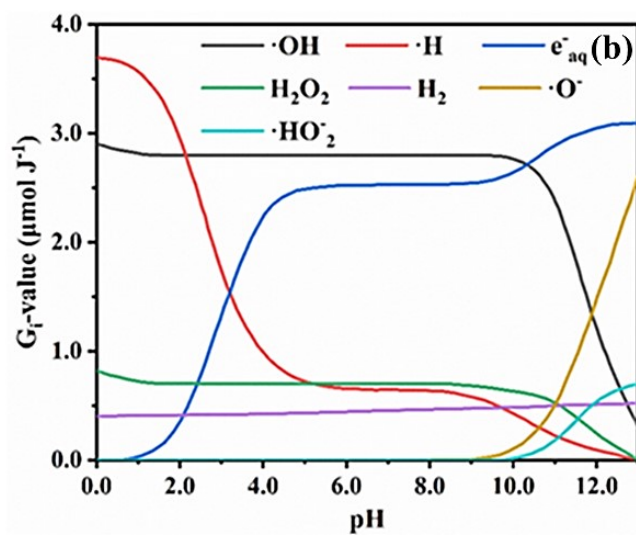


Fig. S2. The change of G value of the main product of water radiative decomposition at different pH.

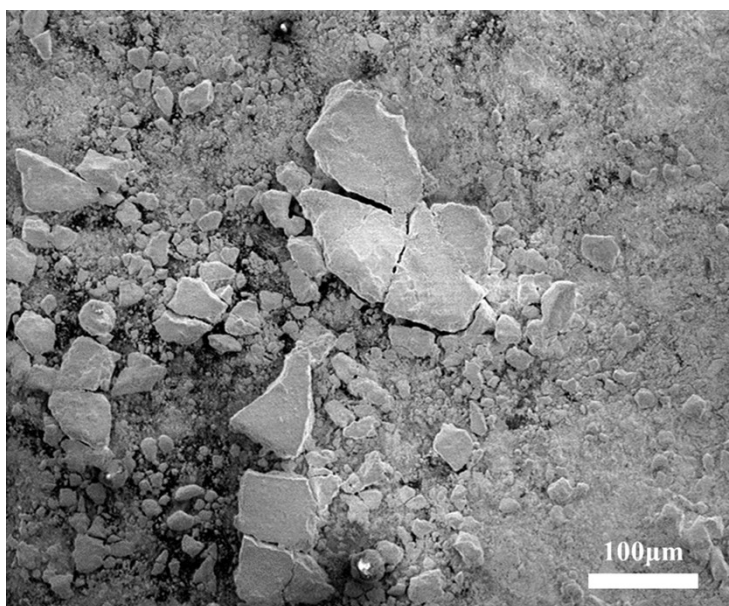


Fig. S3. SEM image of the precipitated product.

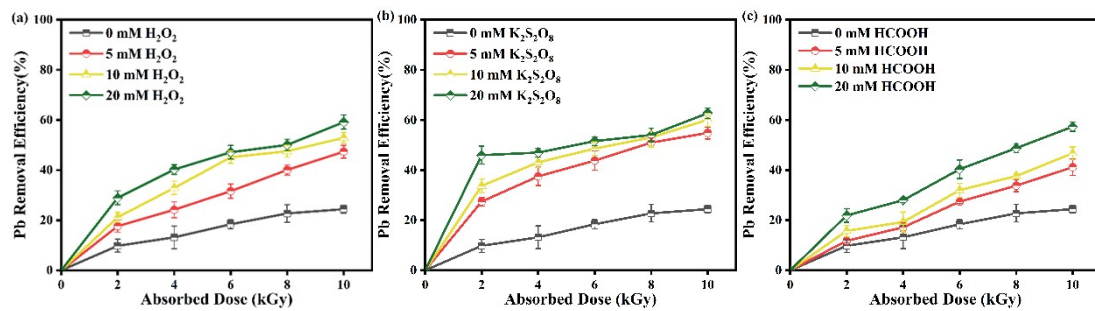


Fig. S4. (a) The impact of H_2O_2 dosage on Pb^{2+} removal at low doses; (b) The impact of $\text{K}_2\text{S}_2\text{O}_8$ dosage on Pb^{2+} removal at low doses; (c) The impact of HCOOH dosage on Pb^{2+} removal at low doses.

