

Electronic Supplementary Information

Efficient enrichment of Uranium(VI) on amidoximated magnetite/graphene oxide composites

Yingguo Zhao,^{ab} Jiaxing Li,^{*a} Shouwei Zhang,^a He Chen,^a Dadong Shao^a

^a Key Laboratory of Novel Thin Film Solar Cells, Institute of Plasma Physics,
Chinese Academy of Sciences, 230031, Hefei, PR China

^b School of Chemistry and Chemical Engineering, Anqing Normal College, 246011,
Anqing, PR China

Fax: +86-551-559-1310; Tel: +86-551-55-2788; E-mail: lijx@ipp.ac.cn (J. X. Li)

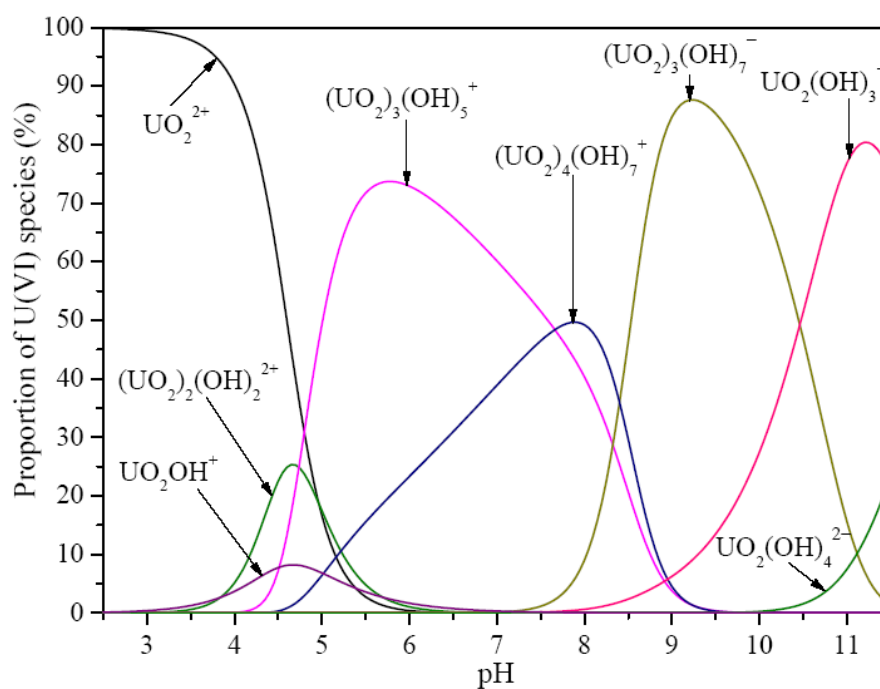


Figure S1 Relative proportion of U(VI) species in $0.01 \text{ mol} \cdot \text{L}^{-1} \text{ NaClO}_4$ calculated using Visual MINTEQ version 2.51 (J.P. Gustafsson, Visual MINTEQ version 2.51, 2006.). $T = 298 \text{ K}$, $C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}$.

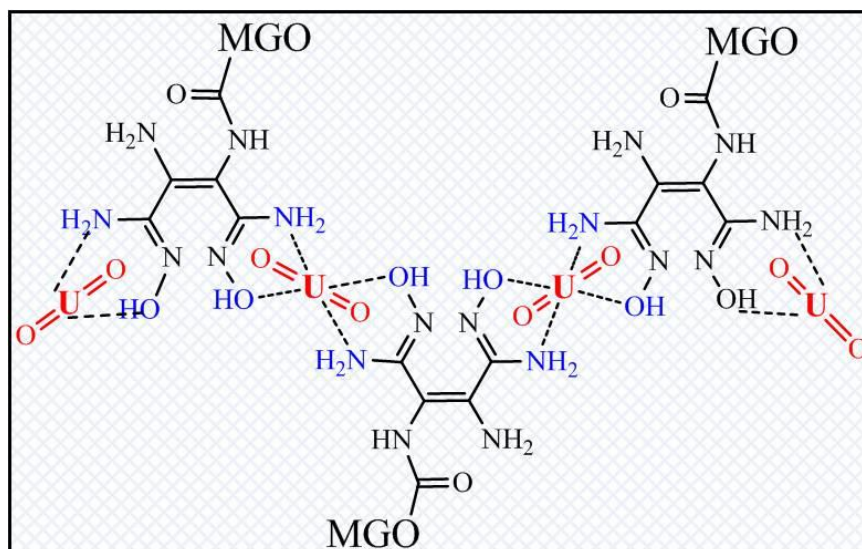


Figure S2 Schematic diagram for UO_2^{2+} complexation with amidoxime chelating functional groups (A. Y. Zhang, G. Uchiyama and T. Asakura, *Separ. Sci. Technol.*, 2003, **38**, 1829-1849.).

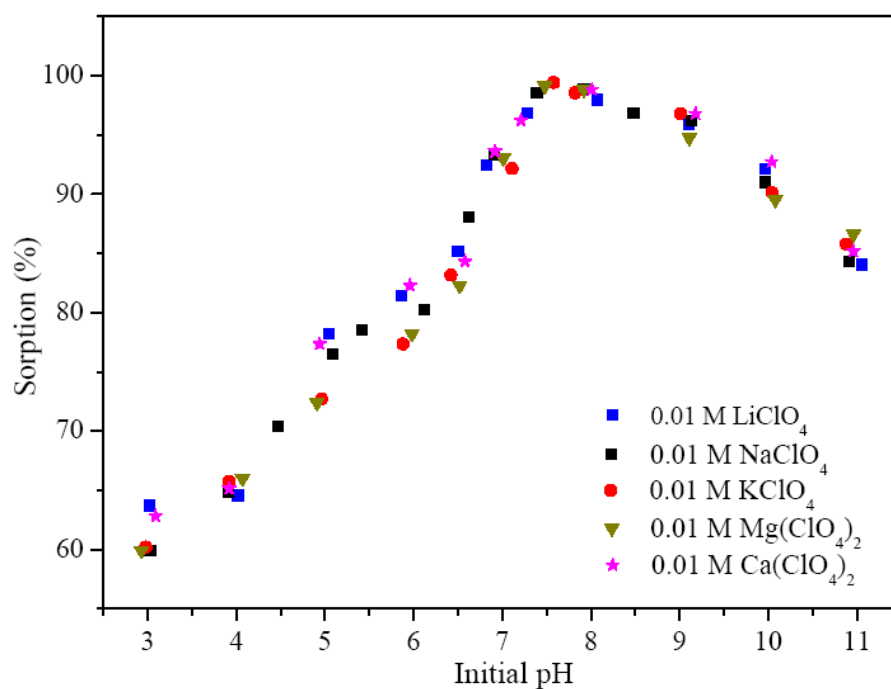


Figure S3 Effect of foreign cations on U(VI) sorption on the AOMGO composite. $T =$

$$298 \text{ K}, C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}, m/V = 0.2 \text{ g} \cdot \text{L}^{-1}.$$

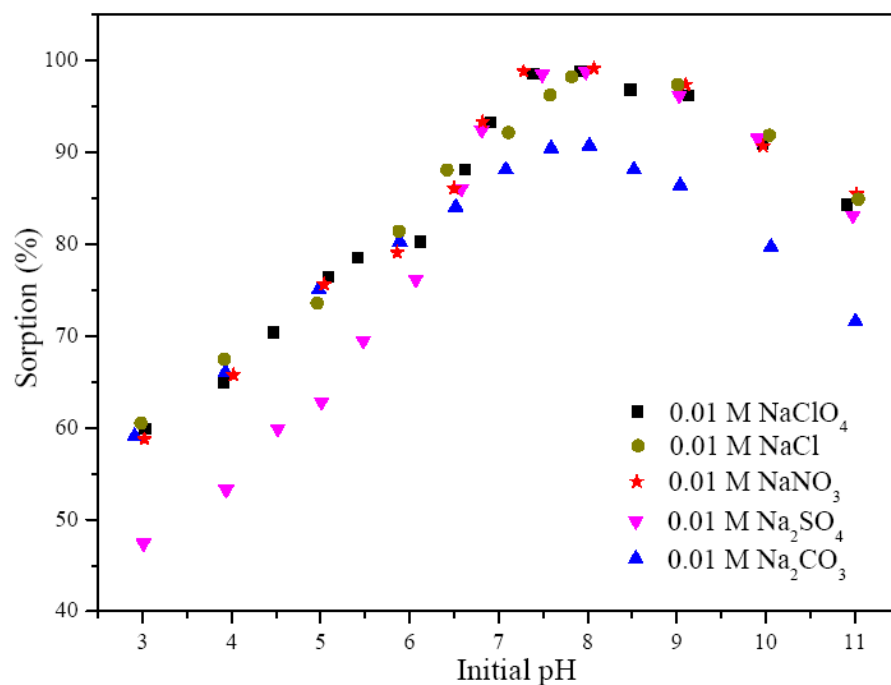


Figure S4 Effect of foreign anions on U(VI) sorption on the AOMGO composite. $T =$

$$298 \text{ K}, C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}, m/V = 0.2 \text{ g} \cdot \text{L}^{-1}.$$

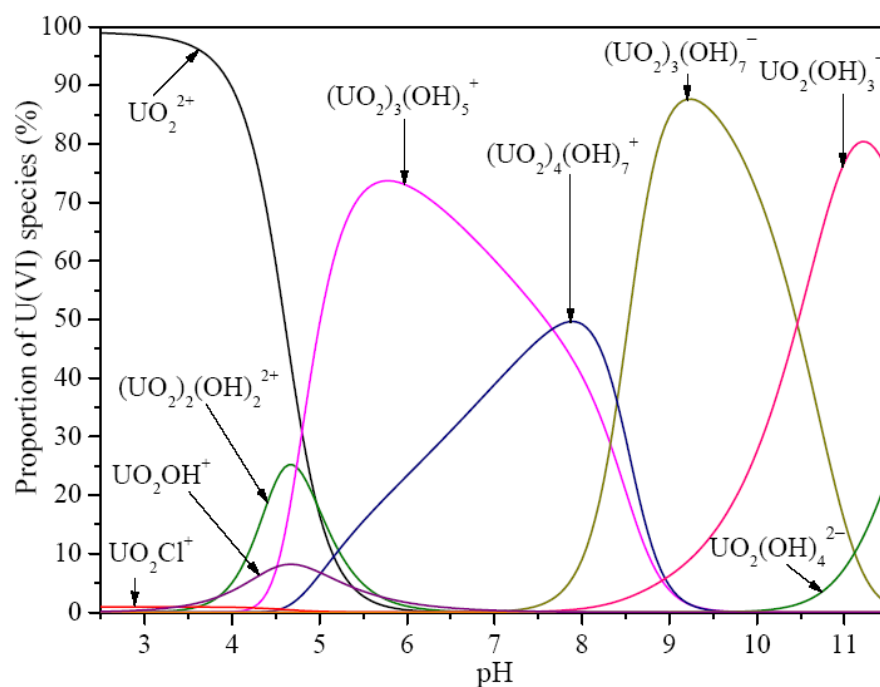


Figure S5 Relative proportion of U(VI) species in $0.01 \text{ mol} \cdot \text{L}^{-1}$ NaCl calculated using Visual MINTEQ version 2.51. $T = 298 \text{ K}$, $C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}$.

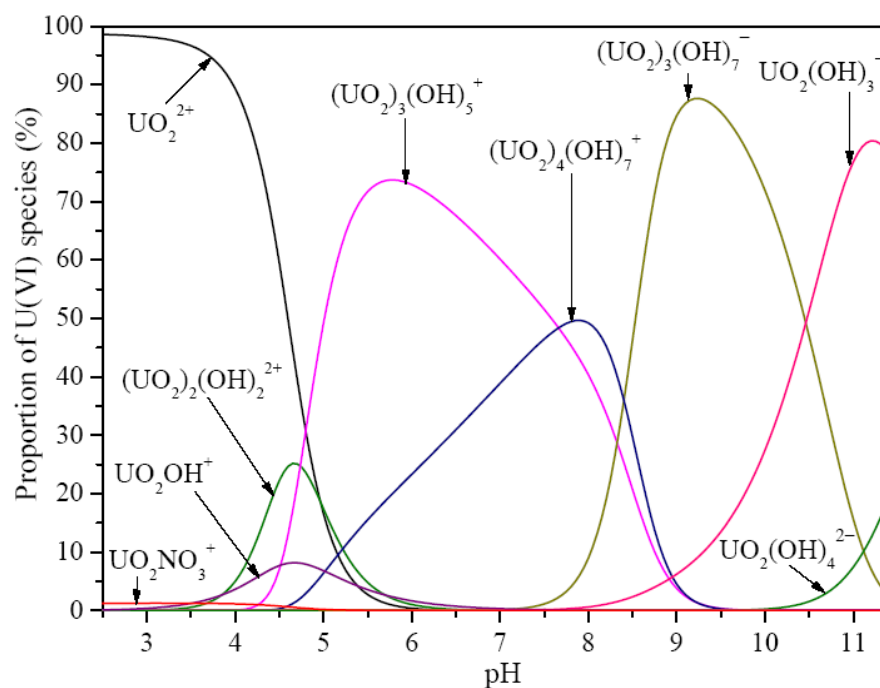


Figure S6 Relative proportion of U(VI) species in $0.01 \text{ mol} \cdot \text{L}^{-1}$ NaNO₃ calculated using Visual MINTEQ version 2.51. $T = 298 \text{ K}$, $C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}$.

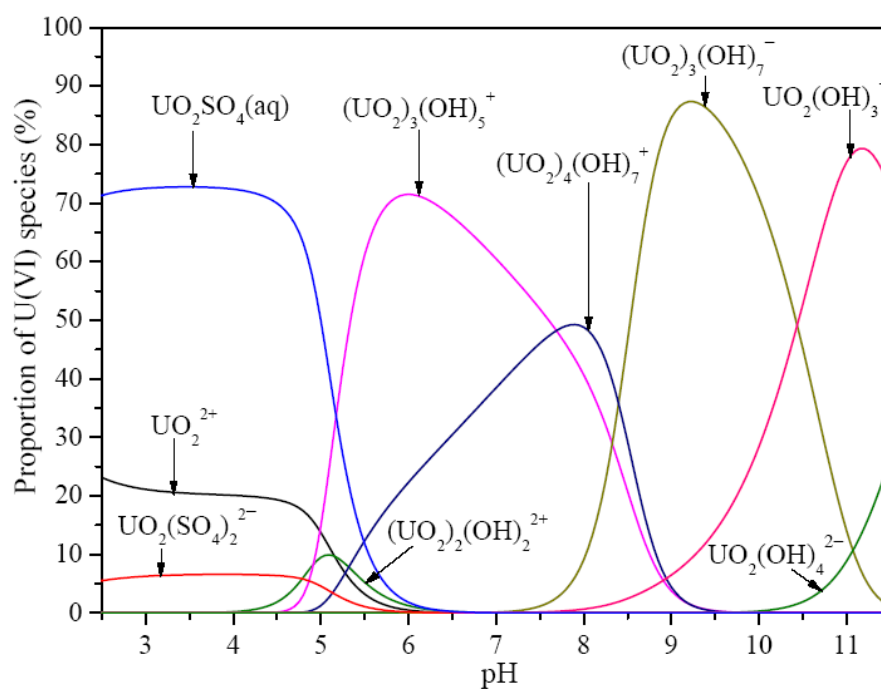


Figure S7 Relative proportion of U(VI) species in $0.01 \text{ mol} \cdot \text{L}^{-1} \text{ Na}_2\text{SO}_4$ calculated using Visual MINTEQ version 2.51. $T = 298 \text{ K}$, $C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}$.

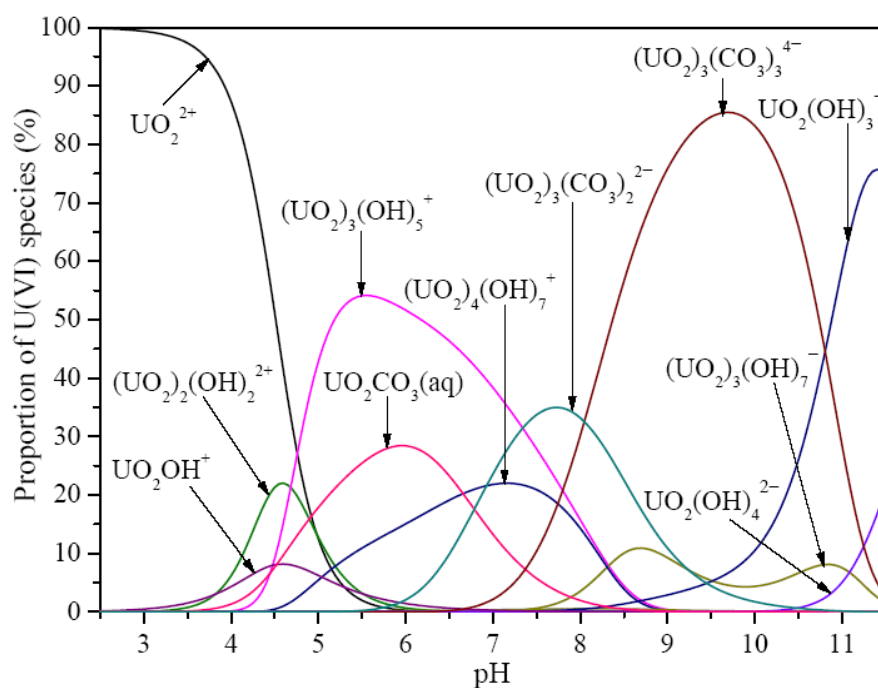


Figure S8 Relative proportion of U(VI) species in $0.01 \text{ mol} \cdot \text{L}^{-1} \text{ Na}_2\text{CO}_3$ calculated using Visual MINTEQ version 2.51. $T = 298 \text{ K}$, $C_{\text{U(VI)}}^{\text{initial}} = 0.2 \text{ mmol} \cdot \text{L}^{-1}$.