

Supplementary Material

PAMPS-graft- $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4$ multiwalled nanotubes as a novel nano-sorbent for effective removal of Pb(II) ions

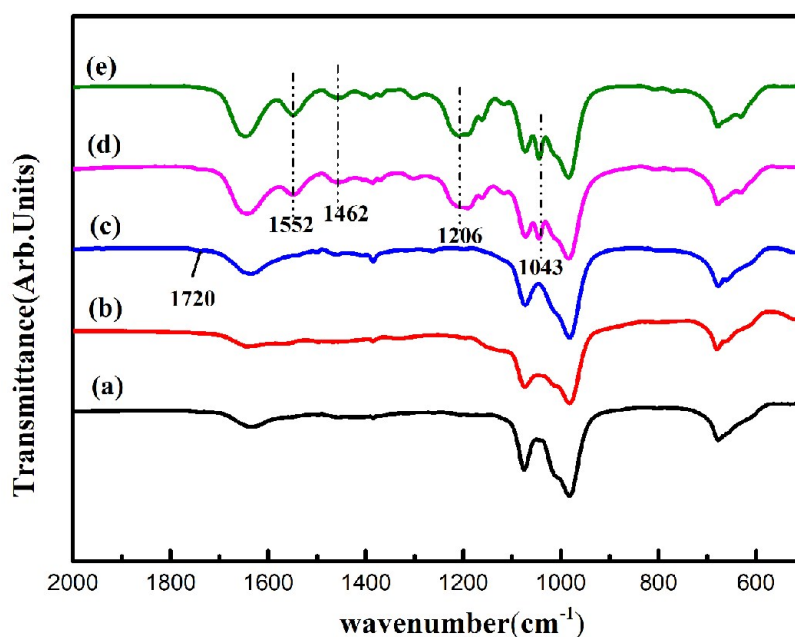


Fig. S1 Partial enlarged drawing of FT-IR spectra. (a) $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4$, (b) $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-NH}_2$, (c) $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-Br}$, (d) $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-g-PAMPS-1}$ prepared after 2 h ATRP reaction, (e) $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-g-PAMPS-2}$ prepared after 8 h ATRP reaction.

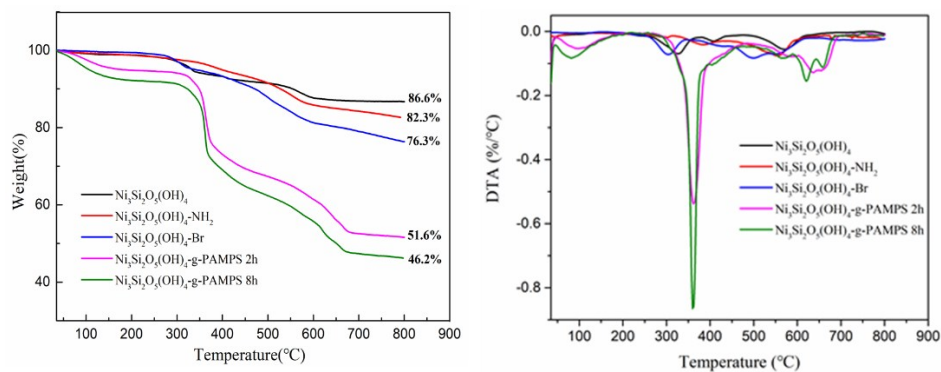


Fig. S2 TG and DTA curves of $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4$, $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-NH}_2$, $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-Br}$, $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-g-PAMPS}$ with 2 h ATRP reaction, and $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-g-PAMPS}$ with 8 h ATRP reaction.

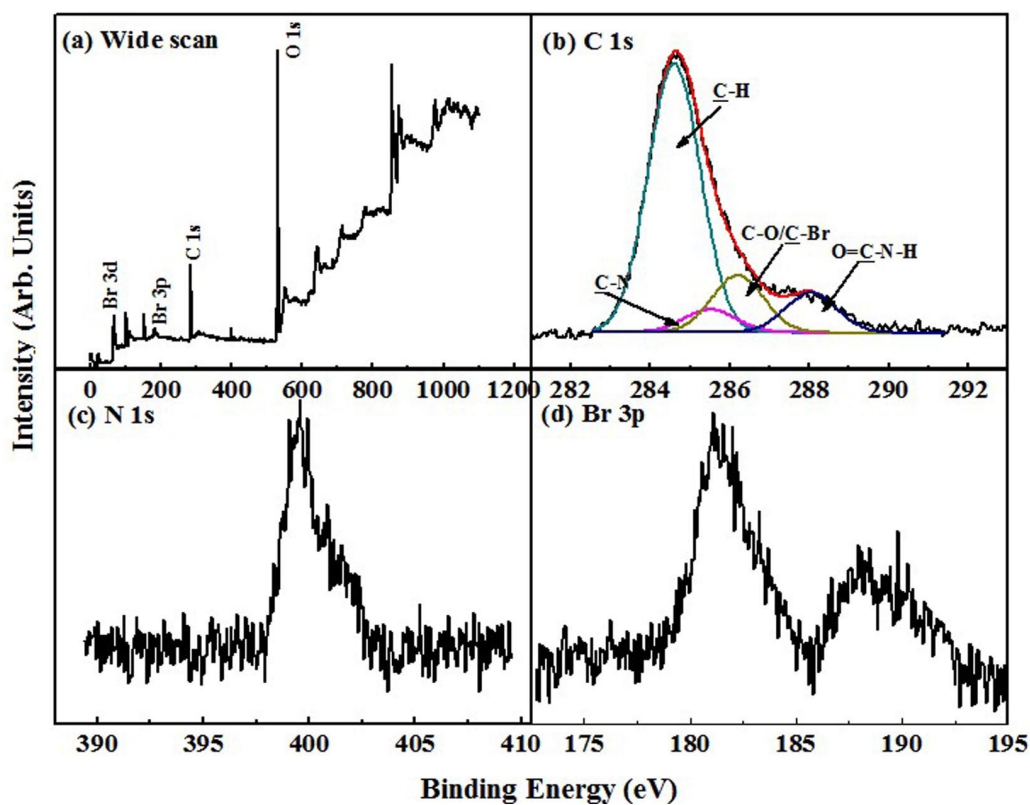


Fig. S3 XPS spectra of the intermediate product $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-Br}$.

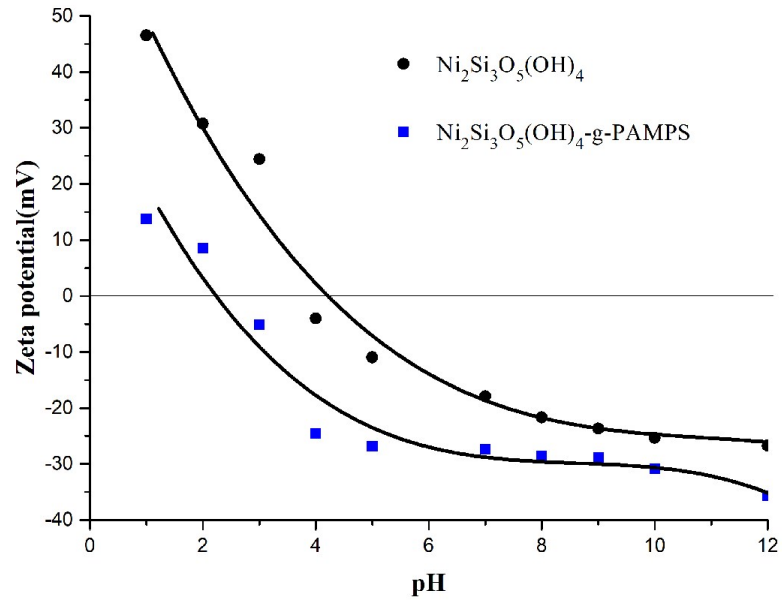


Fig. S4 The Zeta potential of $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4$ and $\text{Ni}_3\text{Si}_2\text{O}_5(\text{OH})_4\text{-g-PAMPS}$ under different pH.