Removal of Quinolone Antibiotics from Wastewater by the Biochar-Based Sludge Adsorbent

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Table S1. The main components in the secondary treatment wastewater used in this study

Parameters	Average Concentration ($mg \cdot L^{-1}$)	Main intervals ($mg \cdot L^{-1}$)	Discharge standard
COD	76	58-82	100
TP	0.029	0.022-0.034	3
TN	7.289	7.153-7.561	/
TOC	20.98	20.91-21.05	30

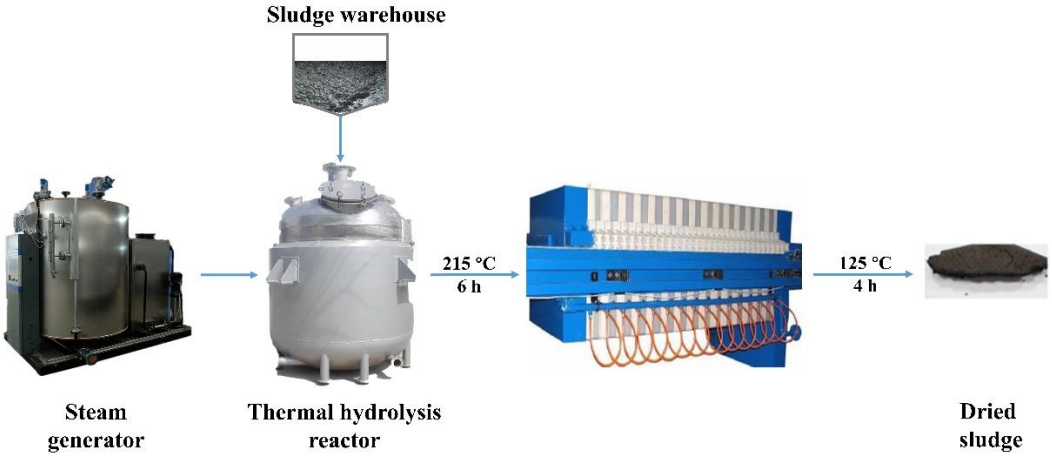

Figure S1. The flow chart of thermal hydrolysis of excess sludge from a MWTP.

Text S1. Several modifiers were used to improve RBA performance, as shown in Figure S2 (a). In general, the removal efficiency of NOR significantly improved by 21.0-62.7% after modification. A lower concentration of acid solution showed higher modification performance. Figure S2 (b) shows the XRD of different adsorbents. Usually, the raw materials of the adsorbent and the processing method can affect the type and structure of the substances in the adsorbent. By comparing with PDF cards, the peaks at 2θ=26.82°, 38.90°, 57.37° and 67.96° matched with quartz (SiO_2, PDF#46-1045) and the peak at 2θ=12.35° matched with kaolin ($Al_2Si_2O_5(OH)_4$, PDF#79-1570), suggesting that the main inorganic components in RBA were quartz and kaolin.

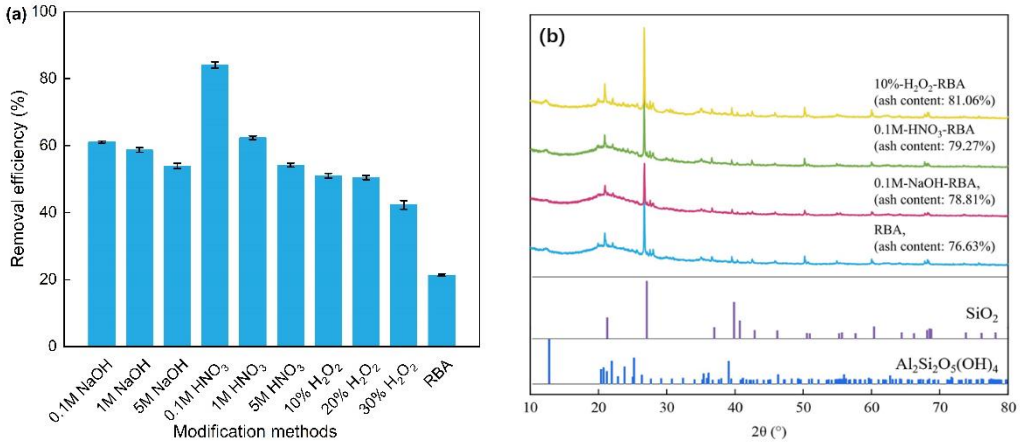

Figure S2. The (a) antibiotic removal efficiency and (b) XRD of RBA with different modification methods.