

Supporting Information

Synthesis process and adsorption performance of temperature-sensitive ion-imprinted porous microspheres (ReO₄⁻-TIIM) for the selective separation of ReO₄⁻

In order to study the practical application effect of CS-RE-TIICM, the separation ability of CS-RE-TIICM on Re was investigated using the secondary leaching solution of high-temperature alloys as the target solution. The high temperature alloy secondary leaching solution was prepared: Firstly, the waste high-temperature alloy grinding was dissolved in HCl(36%)-H₂O(2:1, v/v) at 80°C for 4 h with solid-liquid ratio 1:8. After that, the solution was stored, and the residue was collected and dissolved in mixture of HCl(36%) and H₂O₂(30%) (1:2, v/v) for 4 h with a solid-liquid ratio of 10:1 to obtain the secondary leachate. After filtration the residue, the secondary leaching solution was obtained. Secondly, the secondary leaching solution was oxidized by adding to HNO₃(65%) (10:1, v/v) and H₂O₂(30%) (1:1, v/v), and reacted in an autoclave at 180°C for 48 h to obtain a final adsorption solution.