Major factors in incineration for Pd recovery from Pd-sorbed biosorbent

원성옥, 박지영, 모주앤, 곽인섭, 윤영상*
전북대학교
(ysyun@chonbuk.ac.kr*)

To improve the purity efficiency of Pd recovered from Pd-sorbed polyethylenimine (PEI)-modified biomass, the incineration method was used and major factors such as temperature, metal amount, and N_2 condition were investigated. PEI-modified biomass used in this study was prepared by crosslinking PEI onto the surface of inactive *Corynebacterium glutamicum* biomass. The maximum palladium uptake of PEI-modified biomass was enhanced up to 178.8 mg/g and the kinetic experiment revealed that sorption equilibrium was obtained within 10 min. To recover palladium from Pd-loaded biosorbent, the effects of temperature, metal amount sorbed on the biomass, and N_2 condition were evaluated in an electrical furnace. The result showed that the temperature was strongly affected on Pd recovery and the purity of metallic Pd in ash was approximately 84.6% at 800 ℃. Also, as the sorbed metal amounts increased, the purity of Pd increased up to above 99%. However, the effect of N_2 condition was negligible regardless of metal amounts sorbed. Therefore, temperature and metal amount could play an important role in enhancement of Pd purity efficiency.