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Fabrication of Ti/Pt electrode for Electrochemical Decomposition of Refractory Organic Materials

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Ti/Pt electrode was fabricated by RF Magnetron Sputtering with various deposition conditions for the electrochemical decomposition of refractory aromatic compounds. Surface characterization of Ti thin film on Pt substrate was performed with SEM and XPS followed the heat treatment of the thin films in air or oxygen environment. The grain size of Pt was decreased as decreasing the temperature of substrate. The temperature of Ti substrate for the deposition of Pt was 200 ℃. Well defined surface morphology was obtained with annealing the Ti/Pt electrode at 400 ℃ for 10 min in an atmosphere. From the cyclic voltammograms obtained for the Ti/Pt electrodes that prepared at different deposition conditions, the optimized conditions for the preparation of Ti/Pt electrode were confirmed as following; the temperature of substrate was 200 ℃, The annealing temperature was 400 ℃ for 10 min. in air and working pressure for Pt sputtering was 1×10^{-2} Torr.

[참고문헌]

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